



**FACULTY OF LETTERS AND HUMANITIES BEN MSIK**  
**HASSAN II UNIVERSITY OF CASABLANCA**

Department of English, Hassan II University of Casablanca

Applied Language Studies

# **Transforming Higher Education: Harnessing Artificial Intelligence for Enhanced Learning Experiences in the Humanities**

A Research Paper Submitted in Partial Fulfilment of the Requirement of a Licence Degree

Prepared by

Abderrahman Gouhmad

Supervised by

Prof. Ayoub Loutfi

Copyright by:

Abderrahman Gouhmad

June 2024

# Contents

<b>DEDICATION</b>	<b>i</b>
<b>ACKNOWLEDGEMENTS</b>	<b>ii</b>
<b>ABSTRACT</b>	<b>iii</b>
<b>1 INTRODUCTORY CHAPTER</b>	<b>1</b>
1.1 Problem statement . . . . .	1
1.2 The purpose of the study . . . . .	2
1.3 The Rationale and significance of the study . . . . .	2
1.4 Research questions and hypotheses . . . . .	3
1.4.1 Research questions . . . . .	3
1.4.2 Hypotheses . . . . .	3
1.5 The Organization of the paper . . . . .	4
<b>2 LITERATURE REVIEW</b>	<b>5</b>
2.1 Introduction . . . . .	5
2.2 Defining Key Concepts . . . . .	5
2.2.1 Artificial Intelligence (AI) . . . . .	5
2.2.2 AI-driven tools in education . . . . .	6

2.2.3	Learning experience in higher education . . . . .	6
2.2.4	Intelligent Tutoring Systems . . . . .	7
2.2.5	ChatBots . . . . .	7
2.2.6	Education Data Mining (EDM) . . . . .	7
2.3	The use of AI in Higher Education for enhancing academic performance and engagement . . . . .	8
2.3.1	AI-Assessment . . . . .	8
2.3.2	Personalized Learning . . . . .	9
2.3.3	Intelligent Tutoring Systems (ITS) . . . . .	9
2.3.4	ChatBots “ChatGPT” as a module . . . . .	10
2.3.5	AI and Administrative Efficiency: Streamlining Operations . . . . .	10
2.3.6	Educational Data Mining (EDM) . . . . .	11
2.4	Challenges of AI in higher education . . . . .	11
2.4.1	AI bias . . . . .	12
2.4.2	Data privacy . . . . .	12
2.5	Conclusion . . . . .	13
<b>3</b>	<b>METHODOLOGY</b>	<b>14</b>
3.1	Introduction . . . . .	14
3.2	Objectives of the study . . . . .	14
3.3	Research Questions and hypotheses . . . . .	15
3.3.1	Research Questions . . . . .	15
3.3.2	Hypothese . . . . .	15
3.4	Research design . . . . .	16
3.5	Participants . . . . .	16

3.6	Instrument . . . . .	19
3.7	Data collection procedure . . . . .	19
3.8	Data analysis . . . . .	20
3.9	Conclusion . . . . .	20
<b>4</b>	<b>DISCUSSION &amp; ANALYSIS</b>	<b>21</b>
4.1	Introduction . . . . .	21
4.2	Results . . . . .	21
4.2.1	The students' academic performance while using AI-driven tools . . .	22
4.2.2	The students' engagement while using AI-driven tools in an academic setting . . . . .	23
4.2.3	Challenges faced while using AI-driven tools in academic settings . . .	24
4.2.4	AI-driven tools and opportunities for improving learning experiences in the humanities . . . . .	24
4.3	Discussion . . . . .	26
4.4	Conclusion . . . . .	28
<b>5</b>	<b>GENERAL CONCLUSION</b>	<b>29</b>
5.1	Introduction . . . . .	29
5.2	Summary of the Research Goal . . . . .	29
5.3	Summary of the Findings . . . . .	30
5.4	Limitations of the study . . . . .	30
5.5	Implications of the Study . . . . .	31
5.6	Suggestions for further research . . . . .	31
5.7	Conclusion . . . . .	32

<b>REFERENCES</b>	<b>33</b>
<b>6 APPENDICES</b>	<b>38</b>
6.1 Questionnaire on Students' Attitudes towards the Use AI for enhancing academic performance and engagmet. . . . .	38

# List of Tables

3.1	Participants by Age and Gender . . . . .	16
3.2	Participants by Academic Year and usage of AI for academic purposes . . . . .	17

# List of Figures

3.1	Distribution by Gender . . . . .	17
3.2	Distribution by Age . . . . .	17
3.3	Distribution by Academic year . . . . .	18
3.4	Distribution by the usage of AI for academic purposes . . . . .	18
4.1	Perceived academic performance using AI-driven tools . . . . .	22
4.2	Perceived academic engagement using AI-driven tools . . . . .	23
4.3	challenges faced when using AI-driven tools in academic settings . . . . .	24
4.4	AI and opportunities . . . . .	25



## **DEDICATION**

With the guidance and blessing of ALLAH SWT, I embark on the journey of completing this research paper. I wholeheartedly dedicate this work to my cherished family—a source of unconditional love, inspiration, motivation, and support throughout my life. Their steady belief in my attempts has been a beacon of strength and hope. To my dearest family, your unshakable faith in me is the mainspring of my achievements. Therefore, I am eternally grateful.

## **ACKNOWLEDGMENTS**

I extend my sincere gratitude to my professor and supervisor Prof. Ayoub Loutfi, whose guidance has enlightened the path of modernity often overlooked in higher education. I also extend my appreciation to him as being an invaluable lens, enabling me to delve into profound knowledge and successfully complete this paper. Hence, I appreciate his support and mentorship throughout this academic year.

## **ABSTRACT**

This research paper explores using artificial intelligence (AI) to enhance learning experiences in the humanities, focusing on English university students at Hassan II University in Casablanca, Morocco. The study investigates students' perceptions and experiences with AI-driven tools to determine if these technologies can improve academic engagement and performance. It also examines the challenges and opportunities associated with integrating AI into higher education in Morocco, specifically within the humanities department. A mixed-methods approach was employed, combining quantitative surveys and qualitative analysis. Surveys were administered to gather data on students' perceptions and experiences with AI-driven tools. Participants included 60 English department students from different academic years. Data collection was carried out via WhatsApp, ensuring diverse and comprehensive responses. Through a thorough analysis of data and previous, the findings demonstrate the positive impact of AI on learning outcomes and emphasize the importance of embracing AI technologies in educational settings. This research provides valuable insights for educators, policymakers, and researchers interested in using AI to enhance learning experiences and promote academic success in the digital age.

# Chapter 1

## INTRODUCTORY CHAPTER

### 1.1 Problem statement

Artificial intelligence has taken all over the industries and become a revolutionized technology. It potentially transforms various industries to be more productive (Czarnitzki et al., 2023). However, the emergence of similar AI-driven tools like “ChatGPT”, which have significance capabilities, there remains a massive gap comprehending how to effectively interact with it, especially that these tools have gained prominence across sectors since their launch in late November 2020 (Marr, 2023); their full potential has not yet been used within the realm of education to foster genuine engagement and knowledge acquisition among humanities students. This has arisen questions about practical ways of integrating these tools in this context. Therefore, the key focus of this study lies in exploring how AI can be effectively integrated into education to enhance learning experiences within the humanities. The significance of this problem goes beyond implementing technology; it involves transforming education practices and methodologies. Using AI in higher education, especially in humanities, can potentially revolutionize it. Facilitating personalized learning, encouraging critical thinking skills, and en-

hancing engagement during lectures (Baskara, 2023). Addressing this gap is vital for improving the quality and effectiveness of humanities education ensuring that students have the skills to succeed in an increasingly digital and interconnected society. Therefore, exploring ways to use AI in education is an effort with significant implications, for the future of learning and acquiring knowledge.

## **1.2 The purpose of the study**

This study examines practical ways of integrating artificial intelligence (AI) into the humanities. It also investigates effective AI-driven tools for improving learning experiences in higher education. To better understand students' perceptions and experiences, this study explores students' attitudes toward their academic performance using AI-driven tools. Furthermore, this study examines the challenges and opportunities associated with the use of AI in higher education, specifically in the humanities. By addressing these objectives, this study aligns with the goal of enriching learning experiences in humanities disciplines.

## **1.3 The Rationale and significance of the study**

The widespread accessibility and prevalence of AI shows that 73% of US companies have already implemented AI into some aspects of their businesses as (PricewaterhouseCoopers, 2024) reports. Consequently, the fame of using AI in recent years prompted researchers to investigate practical ways of using AI tools for enhancing human productivity across various fields, including education. This study delves into AI-driven tools within a framework aimed at addressing how they can be effectively used to enhance learning experiences within humanities.

## **1.4 Research questions and hypotheses**

### **1.4.1 Research questions**

The study seeks to investigate the potential ways of harnessing Artificial Intelligence for Enhanced Learning Experiences in the Humanities. Hence, the following research questions will be addressed in this paper:

- What are the attitudes of students regarding their academic engagement when utilizing AI-driven tools in educational settings?
- What are the attitudes of students toward their academic achievement and performance while employing AI-driven tools?
- What are the challenges and opportunities associated with using AI in higher education in Morocco, specifically in the humanities?

### **1.4.2 Hypotheses**

Following intended objectives, these hypotheses have been developed:

- AI-driven tools are significantly fostering engagement in academic setting.
- AI-driven tools are significantly improving academic performance.
- There are challenges and opportunities are associated with using AI in higher education in Morocco, specifically in the humanities

## **1.5 The Organization of the paper**

The monograph comprises five chapters, each serving a purpose within this study. The first chapter gives an overview of the study discussing its problem, purpose, rationale, significance, questions and hypotheses. The second chapter review of relevant literature. It reviews the most existing studies on AI in education to highlight current trends, challenges, and potential strategies for using AI-driven tools. This chapter explores emerging trends, challenges, and practical approaches for using AI-driven tools. The third chapter is designed to provide a comprehensive explanation of data-collection. It describes the research design, participants, instrument, and relevant procedures adopted for analysis. The finding chapter will analysis, interpret, and discuss data-collection in depth. The chapter also aims to either validate or reject the hypotheses of the study. Finally, the concluding chapter will focus on a summary of research objectives, methodology, and findings. Furthermore, this chapter will address the study's limitations and implications while offering suggestions for further studies.

# **Chapter 2**

## **LITERATURE REVIEW**

### **2.1 Introduction**

it is imperative first to appraise the most significant insights and perspectives. This chapter presents a comprehensive survey of how AI has been incorporated into higher education, emphasizing practical methods for utilizing AI-based resources to improve academic achievement and efficiency. The chapter concludes by addressing the obstacles that arise when implementing AI in educational institutions. The objective is to elucidate the findings surrounding this subject matter, gleaned from other researchers' diverse viewpoints.

### **2.2 Defining Key Concepts**

#### **2.2.1 Artificial Intelligence (AI)**

Artificial Intelligence is the intelligence demonstrated by machines, involving tasks such as speech recognition, computer vision, and language translation. Machines can perceive, synthesize, and infer information, distinguishing it from the intelligence displayed by non-human



animals and humans (Ola, 2023). In addition, AI has the ability of a computer system to perform human tasks that human intelligence can accomplish (Sadiku et al., 2021). It has the potential to optimize and improve various aspects of human life, including education, health, business, and technology (Cheng, 2023).

### **2.2.2 AI-driven tools in education**

AI-driven tools encompass the application of AI tools such as “ChatGPT” to assist students, educators and administration in an education process. These AI-driven tools are used for planning and reactive execution of educational phases, such as student admission, lesson planning, knowledge delivery and performance evaluation (Mallik & Gangopadhyay, 2023). Additionally, it serves as an extension of human intelligence, enabling increased productivity in the educational sphere by performing tasks such as problem-solving, learning, and decision-making (Cheng, 2023).

### **2.2.3 Learning experience in higher education**

It refers to designing and implementing educational activities to create positive and foster engaging student learning experiences (Ebner et al., 2023). It involves comprehending and assessing the students’ educational experience, including their satisfaction, self-efficacy, engagement, and self-regulated learning experience (Lyz’ et al., 2022). The focus is on improving the quality of education by enhancing students’ academic success, readiness for self-education and self-development, and subject well-being (Iordache-Platis, 2018).

### **2.2.4 Intelligent Tutoring Systems**

ITS is educational software that incorporates AI. The software monitors students' progress, adjusts feedback, and provides hints to offer personalized guidance (Shute & Zapata-Rivera, 2010). It aims to provide individualized, sophisticated instructional advice (Sedlmeier, 2001).

### **2.2.5 ChatBots**

Chatbots are computer programs that replicate human conversation with a conclusion. While not all chatbots possess AI capabilities, modern chatbots are progressively integrating AI techniques to analyze human input ("What Is a Chatbot?", n.d.). It enables the digitization of human interaction through written or vocal means, giving the impression of ongoing communication with another individual (Oracle, n.d.).

### **2.2.6 Education Data Mining (EDM)**

EDM is a technique that is used to evaluate students' academic performance, assess the learning process, determine the overall quality of education, and enhance outcomes in higher education. It entails processing and analyzing large amounts of data to extract relevant information that can be used for decision-making and policy-making in the education sector (Arifin et al., 2022).

## **2.3 The use of AI in Higher Education for enhancing academic performance and engagement**

Artificial intelligence has been increasingly integrated into various aspects of higher education, transforming traditional education (Wang et al., 2023). This section explores ways AI can enhance learning experiences and increase academic students' performance by focusing on AI-Assessment, personalized learning, intelligent tutoring, and administrative task automation.

### **2.3.1 AI-Assessment**

(Crompton & Burke, 2023) conducted a systematic review of 138 articles from 2016-2022. The study provides unique findings of an examination of who the AIED was intended for and majority were students with 72% answering the overarching question of how AIED was used in higher education. Assessment and evaluation was one of five uses that students use. 26 studies clarify that automated assessment is the most commonly used for academic achievement. (Zhang & Xu, 2022) used automation assessment to improve the academic writing skills of Uyghur ethnic minority students living in China. The study found that due to the diverse cultural aspects of writing, students interacted with the automated assessment system in terms of behavior, cognition, and emotions. This interaction facilitated their self-directed learning process and contributed to their improvement of their academic performance, namely writing skill.

### **2.3.2 Personalized Learning**

The application of AI technology in higher education has been found to enhance academic performance and engagement by providing personalized learning experiences for students. By utilizing algorithms and data analysis, AI can recognize patterns in student performance and preferences, leading to personalized content and activity suggestions. This, in turn, enhances the student's learning experience, motivation, and engagement. Furthermore, AI can offer customized resources based on individual needs and learning styles while monitoring real-time progress to identify areas that require additional support and adjusting learning materials accordingly (Guerrero-Quíñonez et al., 2023) and (Lecturer, Department of Computer Science Akshara First Grade College, Anekal et al., 2023).

### **2.3.3 Intelligent Tutoring Systems (ITS)**

Intelligent Tutoring Systems (ITS) have shown great promise in enhancing online learning through AI. They provide personalized support, immediate feedback, and ongoing monitoring for more effective and independent learning. By analyzing student data with AI algorithms, these systems deliver tailored experiences that adapt to each student's needs, offering relevant content and personalized feedback. According to a recent study by (Lecturer, Department of Computer Science Akshara First Grade College, Anekal et al., 2023), it improves adaptiveness and leverages personalized learning by considering each student's individual needs. This approach to personalized learning is also supported by (Bradáč et al., 2022) who believe it can greatly improve students' learning experiences.

### **2.3.4 ChatBots “ChatGPT” as a module**

ChatGPT has become a valuable tool in higher education, providing students personalized recommendations based on their learning history. With minimal input, it can accurately answer questions and assist students in improving their study skills and time management. Additionally, it motivates and engages students by offering access to many resources. ChatGPT can assess students' writing abilities (Mohammed et al., 2023). Moreover, ChatGPT is an effective teaching aid that enables educators to make informed decisions and provides personalized support outside regular class hours. It also promotes engagement and active learning through interactive and dynamic experiences, facilitating discussions, stimulating critical thinking, and delivering immediate feedback to enhance the learning experience (Schönberger, 2023). Ultimately, ChatGPT has the potential to enhance both learning and teaching processes, serving as an invaluable tool for class preparation, exam preparation, and personalized tutoring (Domenech, 2023).

### **2.3.5 AI and Administrative Efficiency: Streamlining Operations**

Artificial intelligence has proven to be a valuable tool in enhancing administrative processes for educators. By automating tasks, educators can prioritize important activities such as curriculum design (Drach et al., 2023). Furthermore, AI can streamline enrollment and improve retention rates, offering opportunities for resource optimization and successful online training experiences (Lukianets & Lukianets, 2023). In addition, AI's data analysis capabilities and pedagogical reporting facilitate evidence-based decision-making, empowering educators to make informed choices (Guerrero-Quíñonez et al., 2023).

### **2.3.6 Educational Data Mining (EDM)**

Educational Data Mining (EDM) is a powerful tool for extracting knowledge from academic, socioeconomic, and learning analytics data. EDM can significantly improve academic performance, learning quality, and decision-making by utilizing statistical analysis, machine learning, and data mining techniques (Arifin et al., 2022; Hooda et al., 2022). Recent studies have highlighted the effectiveness of EDM in predicting students' performance using practical techniques such as J48<sup>1</sup> and K-means.<sup>2</sup> With its potential to enhance overall efficiency and success (Prince Sattam Bin Abdulaziz University et al., 2016), the use of Data Mining methods, particularly EDM, is becoming increasingly essential for educational institutions.

## **2.4 Challenges of AI in higher education**

The emergence of artificial intelligence (AI) and its growing utilization in educational contexts have brought numerous challenges accompanying its implementation. This section explores the obstacles and issues when integrating AI into education settings, particularly its use for academic purposes.

---

<sup>1</sup>J48 is a decision tree algorithm that is commonly used in educational data mining (EDM) for classification tasks.

<sup>2</sup>K-means is a clustering algorithm that is often used in educational data mining (EDM) for grouping similar data points together. It is an unsupervised learning algorithm that aims to partition the data into K clusters, where K is a predefined number. The algorithm iteratively assigns data points to the nearest cluster centroid and updates the centroids until convergence. K-means is widely used in EDM for analyzing student behaviors and identifying patterns in educational data.

### **2.4.1 AI bias**

Concerns have been raised regarding the potential negative impact of using AI in admission or grading processes for students. AI algorithms can produce racially biased output when trained on biased data. For example, in medical appointment scheduling, certain algorithms predict that black patients are more likely to miss appointments compared to non-black patients. This perpetuates racial inequalities and creates a lack of access to healthcare, highlighting the crucial need for accuracy and fairness in AI. The implications of this extend beyond the medical field and into other domains such as education, judicial systems, and public safety(Shanklin et al., 2022). The facial detection algorithms used by the software may be biased against students based on their skin tone or gender. The study shows that students with darker skin tones and black students are more likely to be marked for review, and women with darker skin tones are selected for review more often than white men. This highlights the need for caution when using automated proctoring software, as biased AI algorithms can significantly affect education, social justice, equity, and diversity (Yoder-Himes et al., 2022).

### **2.4.2 Data privacy**

Schools, teachers, and students generate vast amounts of private data in digital formats, but often have little control over this data, which is instead held by third-party institutions. This lack of autonomy poses challenges in protecting student privacy. The use of AI systems and big data analytics in education has significantly enhanced the capacity to identify information about student users. This includes data traces from online learning activities, such as browsing history, download history, and location data. The security boundary of personal information privacy is becoming increasingly blurred, posing challenges in protecting student data privacy

(Huang, 2023). It is important to address the issue of data privacy in artificial intelligence (AI) within higher education. AI technology aggregates a vast amount of data from various sub-fields, making it crucial for data processing and consumption to adhere to privacy and security principles. With the advent of the Internet, the retention period of information has significantly increased. Therefore, data for AI systems must be collected, utilized, shared, stored, and deleted under information security standards. Protecting personal information related to the lifespan of AI technology should be ensured by legal frameworks and ethical norms(UNESCO, 2022).

## **2.5 Conclusion**

This literature review comprehensively explored the burgeoning integration of Artificial Intelligence (AI) in higher education. AI offers a multitude of benefits, including personalized learning pathways through intelligent tutoring systems and chatbots, streamlined administrative tasks via automation, and data-driven decision-making empowered by educational data mining (EDM). These advancements hold immense promise for a future characterized by optimized learning experiences and efficient institutional operations. However, challenges such as algorithmic bias and student data privacy necessitate careful consideration. To ensure AI's ethical and equitable implementation, future endeavors should focus on mitigating bias within algorithms and developing robust data security protocols. In essence, AI presents a powerful but nuanced tool for transforming higher education. By navigating the ethical and practical hurdles and harnessing its full potential, AI can revolutionize learning experiences and empower educators to cultivate a more effective and equitable educational landscape.



# **Chapter 3**

## **METHODOLOGY**

### **3.1 Introduction**

The present chapter aims to illustrate the research design employed to investigate the integration of Artificial Intelligence in enhancing learning experiences in the Humanities. It details the research design, participants, instruments, data collection, and analysis procedures. The chosen methodology will be justified for its relevance according to research questions and hypotheses posted in Chapter 1, section 1.4, aiming to provide insight into the impact of AI-driven tools in higher education.

### **3.2 Objectives of the study**

This study's main objective is to examine the effectiveness, usefulness, and benefits of using AI-driven tools as learning tools to enhance students' academic performance. The purpose is to discover students' perceptions and the practical ways they use AI tools to enhance their academic performance. Accordingly, the following research questions and hypotheses have been formed based on the objectives.

### **3.3 Research Questions and hypotheses**

#### **3.3.1 Research Questions**

The study aims to investigate hressing AI within higher education espacially humanities.

Hence, the following question are formulated:

- What are the attitudes of students regarding their academic engagement when utilizing AI-driven tools in educational settings?
- What are the attitudes of students toward their academic achievement and performance while employing AI-driven tools?
- What are the challenges and opportunities associated with using AI in higher education in Morocco, specifically in the humanities?

#### **3.3.2 Hypothese**

In terms of achieving the current purpose, the follwing hypotheses have been formulated:

- AI-driven tools are singificantly fostering engagment in academic setting.
- AI-driven tools are significantly improving academic performance.
- There are challenges and opportunities are associated with using AI in higher education in Morocco, specifically in the humanities

### 3.4 Research design

This research employs a mixed-methods approach to explore the efficacy of AI-driven tools in enhancing learning experiences in the Humanities. Surveys will be the primary data collection method to gather insights on effectively integrating AI-driven tools into the educational process. Furthermore, the surveys will gather students' views on their academic performance using these tools. By combining quantitative survey data with qualitative student perspectives, this study seeks to provide a comprehensive analysis of the impact of AI technology on learning outcomes and student engagement in the Humanities department.

### 3.5 Participants

The current study investigates the attitudes of one major group, English university students from different academic years: first year, second year, and third year. The survey was shared on WhatsApp. The Participants were asked relevant questions that contributed to the study. They comprise 60 students from the English department (44 are female, 16 are male). The age, gender, and previous experience with AI distribution of this paper's participants are shown in the table below.

Table 3.1: Participants by Age and Gender

	Gender			Age		
	female	male	prefer not to say	18-25	26-35	36 and above
Frequency	44	16	NULL	39	12	9
percentage	73.3 %	26.7 %	NULL	65 %	20 %	15 %

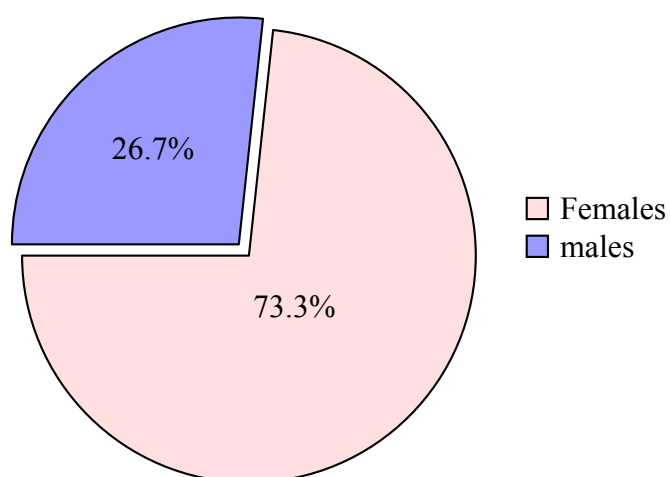


Figure 3.1: Distribution by Gender

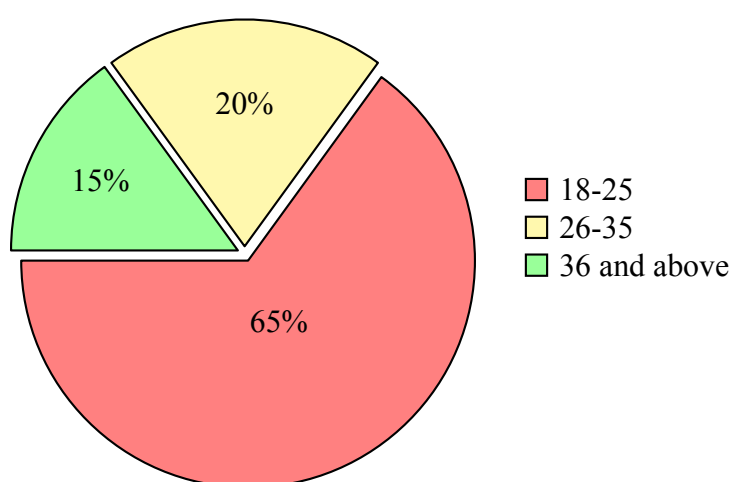


Figure 3.2: Distribution by Age

	Academic year			The usage of AI for academic purposes	
	First Year	Second Year	Third Year	Yes	No
Frequency	5	18	37	51	9
percentage	8.3 %	30 %	61.7 %	85 %	15 %

Table 3.2: Participants by Academic Year and usage of AI for academic purposes

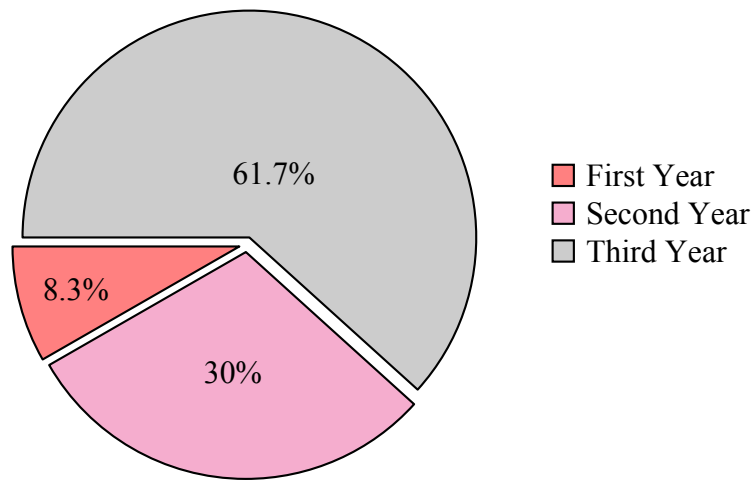


Figure 3.3: Distribution by Academic year

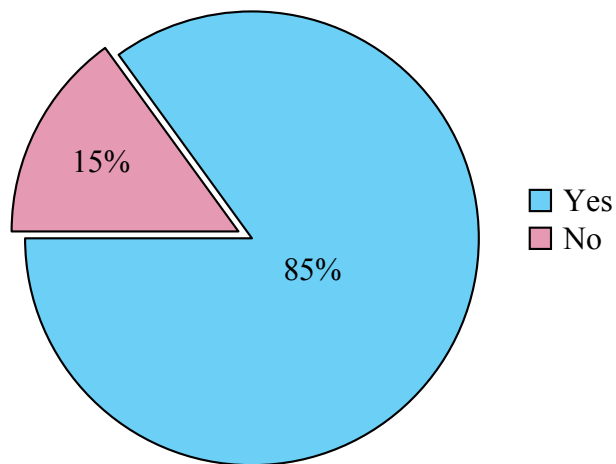


Figure 3.4: Distribution by the usage of AI for academic purposes

### **3.6 Instrument**

Various data collection instruments and tools are used by research to collect, measure, and interpret data related to this study. To that end, one of these instruments was used, namely an online survey created using “Google Forms”. The survey comprises two types of questions: factual and attitudinal. The factual questions aim to identify specific demographic characteristics of the participants, such as their gender, age, academic year, and department. The attitudinal questions are intended to investigate the students’ attitudes toward utilizing AI-driven tools in higher education, especially in the humanities department.

The questionnaire design primarily employs a closed-ended format, which pre-determines response options for the participants. However, it also incorporates three open-ended questions to elicit detailed responses and qualitative insights from the participants. These open-ended questions are designed to encourage the participants to provide examples of opportunities for integrating AI-driven tools in higher education, offer suggestions for enhancing the integration of AI in higher education, share their experiences of using AI-driven tools, and provide feedback or comments regarding the AI-driven initiatives.

### **3.7 Data collection procedure**

Under the mentorship and guidance of my supervisor, Professor Loutfi Ayoub, a specialized questionnaire was meticulously crafted to engage students within the Humanities discipline. This survey, explicitly aimed at English majors across various semesters at Hassan II University, was disseminated through various social media platforms, with a notable emphasis on WhatsApp.

### **3.8 Data analysis**

As mentioned, we gathered data for our recent study through an online questionnaire sent to the target group. We utilized “Google Forms” as our data collection tool to ensure we had access to various features. With its ability to accommodate multiple-choice, checklists, rating scales, and short answer text questions, Google Forms proved to be a reliable web-based application for our needs.

### **3.9 Conclusion**

This chapter was made to clarify the data collection procedures. A similar effort has been made to describe data analysis. Therefore, This chapter was designed to lay the groundwork for the upcoming chapter, tackling the data with a more in-depth and detailed understanding of the topic.

## **Chapter 4**

# **DISCUSSION & ANALYSIS**

### **4.1 Introduction**

After clarifying the data collection process and the relevant procedures adopted for the analysis, this chapter aims to examine the previously collected data in order to determine the definitive truth regarding harnessing AI in higher education. To this end, statistical tables and graphs will be disclosed. The findings of this paper are consistent with previous research results on the practical ways of implementing AI into humanities, students' points of view about their performance while using AI, challenges, and opportunities. In short, the survey's results indicate that students' academic performance is improved while using AI.

### **4.2 Results**

The data collected from the survey conducted among English university students revealed compelling insights into the students' perceptions and experiences with AI-driven tools. The analysis utilized descriptive statistical techniques to interpret the responses gathered through the questionnaire. The questionnaire is divided into two main parts: The first part investigates



whether the student's academic performance has improved or not while using AI-driven methods. The second part is about the challenges and opportunities faced during using AI for academic studies.

#### 4.2.1 The students' academic performance while using AI-driven tools

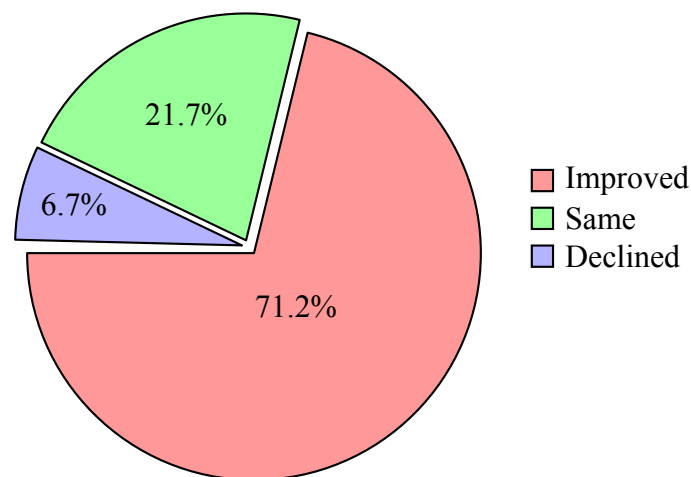


Figure 4.1: Perceived academic performance using AI-driven tools

After assessing the respondents' opinions on the use of AI-driven tools and students' academic performance, it is evident that the majority of their academic performance is improved. The data reported that 71.7% agreed that AI improves their academic performance. In addition, 21.7% of respondents believed that the use of AI did not affect their academic performance. Whereas 6.7% showed negative results, believing that AI affects their academic performance to be declined while using it.

#### 4.2.2 The students' engagement while using AI-driven tools in an academic setting

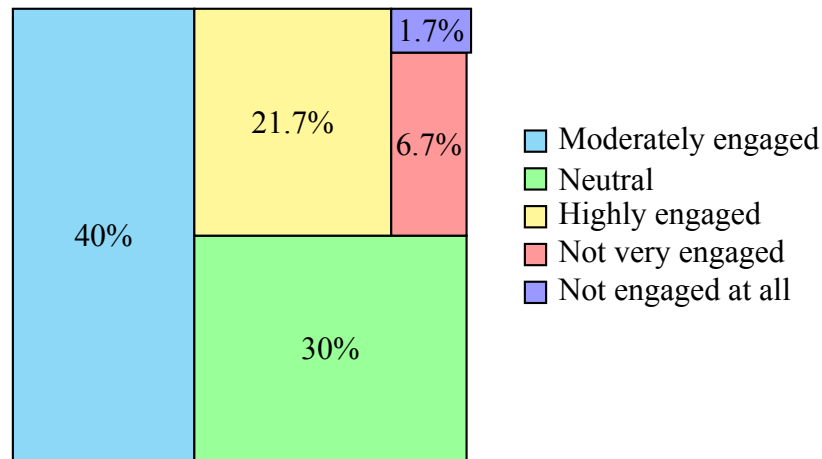


Figure 4.2: Perceived academic engagement using AI-driven tools

The data collected on the extent of student engagement when using AI-driven tools provides a diverse range of perceptions and experiences. A significant portion of respondents reported moderately engaged, 40%, indicating a level of engagement with these AI-driven tools, with almost equal neutrality, 30%, suggesting a mixed reception. However, a notable subset of students reported feeling highly engaged 21.7%, depicting that these tools can effectively encourage students to be engaged. Negatively, the presence of respondents feeling not very engaged 6.7% and 1.7% not engaged at all highlights potential limitations or challenges associated with the implementation or usage of AI-driven tools.

### 4.2.3 Challenges faced while using AI-driven tools in academic settings

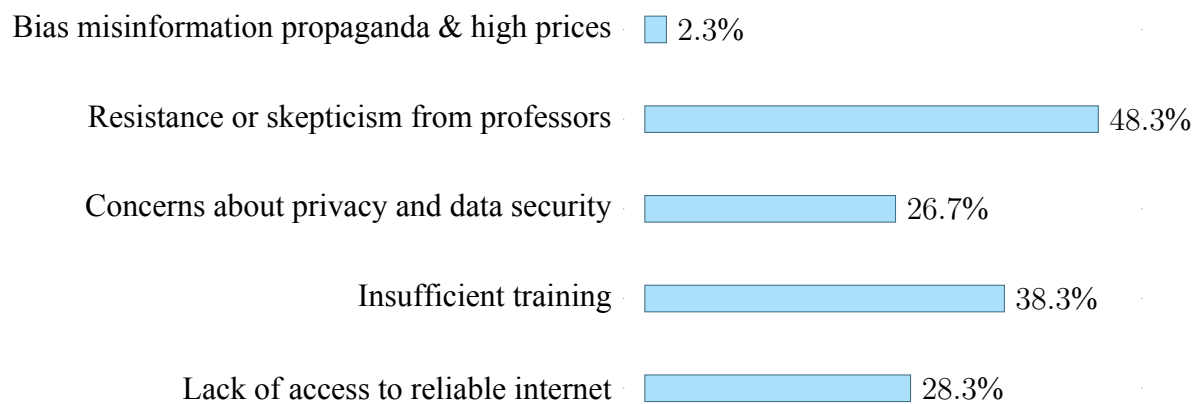


Figure 4.3: challenges faced when using AI-driven tools in academic settings

The bar chart shows the results of a survey on the challenges students face when using AI-driven tools in their academic studies. Out of 60 respondents, the biggest challenge was reported to be the resistance or skepticism from professors toward using AI-driven tools, with 48.3% of students selecting that option. Insufficient training is the second challenge faced by 38.8%. Following the lack of access to reliable internet, 28.3% of students reported this as a challenge. In addition, 26.7% of students reported concern with their privacy and data security matters. At the same time, 2.3% was bias, misinformation, propaganda in the AI tools, and high prices of the AI-driven tools.

### 4.2.4 AI-driven tools and opportunities for improving learning experiences in the humanities

The majority of English university students reported that 50% of AI-driven tools offer opportunities for enhancing learning experiences in the humanities. In addition, 28.3% report the ignorance of the opportunities that AI-driven tools offer. On the other hand, 21.7% re-

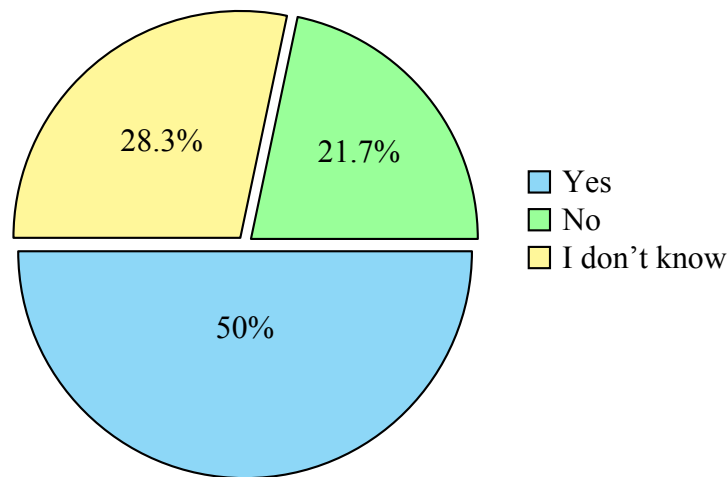


Figure 4.4: AI and opportunities

ported that AI-driven tools offer an opportunity to enhance the learning experience within the humanities setting.

For the open-ended question asking for examples of such opportunities, only 5 participants provided detailed responses, which were as follows:

**Response 1:**

*“AI-driven tools in higher education could enhance personalized learning through adaptive learning platforms and virtual tutoring, and improve research with data analysis tools.”*

**Response 2:**

*“Research Assistance: AI can assist researchers in analyzing vast amounts of data, generating hypotheses, and identifying trends, accelerating the pace of discovery.”*

**Response 3:**

*“It can help students be more self-reliant and seek knowledge wherever and whenever they want to.”*

**Response 4:**

*“Making student more used to communicate with chat bot ai characters when they can’t find native speakers to communicate with.”*

**Response 5:**

*“It helps you correct some mistakes and learn from them. It elevates your writing and information base and limit their context.”*

As it is shown the majority of english students to claim that AI-driven tools can help students to boost their productivity through analysing the data for researcheres and provide personalized learning through adaptive learning platforms and virtual tutoring.

## **4.3 Discussion**

It is important to restate the current study’s goals and research hypothesis before delving into the research findings and discussion. As mentioned in the introduction, the primary aim of this paper is to assess English students’ attitudes toward using AI-driven tools to improve their academic performance and learning experiences. Consequently, the recent study has significantly contributed to validating or refuting the hypotheses stated in the previous chapter. These hypotheses were as follows:

- AI-driven tools are singificantly fostering engagment in academic setting.
- AI-driven tools are significantly improving academic performance.
- There are challenges and opportunities are associated with using AI in higher education in Morocco, specifically in the humanities

The current study’s findings strongly demonstrate students’ positive attitudes toward using AI-driven tools as learning aids. Precise questions were asked to explore the students’ perceptions of the use of AI-driven tools.

Firstly, the findings reveal a significant 40% increase in student engagement when utilizing AI technologies. The data collected from English university students strongly supports the idea that AI can effectively enhance student engagement, fostering a more interactive and dynamic learning environment. This aligns with existing literature that emphasizes the role of technology in promoting active participation among students.

Secondly, the research results demonstrate a positive correlation between using AI-driven tools and students' academic performance. As per the data, 71% of participants believed that AI-driven tools improved their academic performance. Similarly, a related study by (Mohammed et al., 2023) demonstrated that AI-driven tools can effectively enhance academic performance and foster engagement. Results showed that most respondents agreed that "Chat-GPT" motivates and engages students by offering access to many resources and improving academic performance.

Furthermore, the research findings shed light on students' challenges when utilizing AI-driven tools in educational settings. According to the participants, these challenges offer valuable insights into the practical obstacles associated with implementing AI technologies in learning environments. Issues such as technical difficulties, lack of training, resistance or skepticism of professors, and concerns regarding data privacy and security emerge as significant hurdles that need to be addressed to ensure the effective utilization of AI in education.

Finally, the research results highlight the opportunities presented by AI-driven tools for transforming learning experiences in the humanities. By exploring students' perspectives and experiences with AI technologies, the study uncovers the potential for personalized learning, adaptive tutoring, and data analysis to help researchers with their vast amount of data. These opportunities align with the broader literature on the transformative impact of AI in education, emphasizing technology's role in facilitating innovative and tailored learning experiences.

Leveraging these opportunities can empower educators to create engaging, effective, and personalized learning environments that cater to the diverse needs of students in the humanities.

## **4.4 Conclusion**

Throughout this chapter, we have conducted an ongoing study related to students' attitudes toward the use of AI-driven tools as a learning tool to enhance learning experiences within academic settings. The aim was to present and discuss the study's findings in depth. In addition, this study sought to validate or reject the formulated hypotheses mentioned in the methodology chapter, correlate the concluded findings with the paper's literature review and see how far it converges or diverges from it. The final chapter will discuss the implications and the limitations of this study. Finally, it would cover an inclusive summary of the research paper and serve as a springboard to a more in-depth analysis.

# **Chapter 5**

## **GENERAL CONCLUSION**

### **5.1 Introduction**

This chapter offers a general overview of this research paper. It contains a restatement of the current study's objectives, a summary of the methodology and findings obtained from the investigation, and it provides limitations and suggestions for further studies.

### **5.2 Summary of the Research Goal**

This paper is an attempt to explore university students' attitudes toward the use of AI as a tool to enhance the learning experiences within the humanities, namely improving academic performance and engagement, in addition to exploring the challenges and opportunities faced by humanities students(the study focuses on English university students).



### **5.3 Summary of the Findings**

The present study is based on quantitative and qualitative data collection. It indicates that Moroccan English students at the University of Hassan II and the faculty of Ben Msik have a positive attitude towards using AI to improve their learning experiences. The majority of respondents believe that their academic performance has improved since using AI. The findings suggest that AI can enhance personalized learning and enable researchers to analyze their data accurately. Additionally, AI helps students to remain moderately engaged in the classroom despite challenges that may hinder their preference for using AI for academic purposes. These findings are consistent with previous studies and demonstrate the benefits of using AI in an academic context. Furthermore, the responses from participants confirmed the research hypotheses, which are:

- AI-driven tools significantly promote engagement in academic settings.
- AI-driven tools significantly improve academic performance.
- There are challenges and opportunities associated with using AI in higher education in Morocco, especially in the humanities.

### **5.4 Limitations of the study**

This study investigated the feasibility of using AI-driven tools in the academic context to enhance learning experiences. It was mainly to see whether AI-driven tools promote engagement and improve academic performance. The current research provided evidence for the effectiveness of achieving an enhanced learning experience in higher education. However, it is imperative to acknowledge certain limitations inherent in this study. Foremost, the absence

of professors' perspectives constitutes a significant gap, given their pivotal role within the educational ecosystem. In addition, the scope of this study does not encompass a diverse array of university students across different disciplines, thereby limiting the generalizability of its findings. To gain a more comprehensive understanding, it is crucial to gather additional data from participants across a broader range of Moroccan universities before making any generalizations.

## **5.5 Implications of the Study**

The findings of the current study and previous research clearly demonstrate that AI can improve learning experiences in higher education. This can lead to increased student engagement and improved academic performance. Given these findings, it is recommended that educators and learners incorporate this valuable technology into teaching and learning practices. The use of AI technology can benefit humanities students, particularly those studying English, by enhancing their listening, speaking, reading, and writing skills, as well as expanding their vocabulary. Additionally, educators can utilize AI to automate routine tasks, allowing them to focus on core objectives and deliver effective lesson plans.

## **5.6 Suggestions for further research**

The use of AI in higher education to enhance learning experiences is a newly emerging area. Further study will contribute to its survival and development. Therefore, future research should broaden the scope by collecting more data from different universities in various regions of Morocco. In addition, it is essential to consider the perspectives of the professors to obtain more truthful and accurate findings.

## **5.7 Conclusion**

The 21st century has seen a technological revolution, with the widespread availability of devices used for communication, entertainment, and education. This research paper aims to examine the effectiveness of AI-driven tools, such as mobile and web applications, in improving learning experiences within Moroccan higher education institutions. This chapter provides a conclusion to the main points explored in the study, including a summary of the research goals, methodology, findings, suggestions for further research, as well as the limitations and implications of the study.

# REFERENCES

- What is a chatbot?* | IBM. (n.d.). Retrieved March 7, 2024, from <https://www.ibm.com/topics/chatbots>
- Arifin, M., ., W., & ., F. (2022). Using education data mining (EDM) and tracer study (TS) data as materials for evaluating higher education curriculum and policies. *KnE Social Sciences*. <https://doi.org/10.18502/kss.v7i14.11948>
- Baskara, R. (2023). PERSONALISED LEARNING WITH AI: IMPLICATIONS FOR IG-NATIAN PEDAGOGY. *International Journal of Educational Best Practices*, 7(1), 1. <https://doi.org/10.31258/ijebp.v7n1.p1-16>
- Bradáč, V., Smolka, P., Kotyrba, M., & Průdek, T. (2022). Design of an intelligent tutoring system to create a personalized study plan using expert systems. *Applied Sciences*, 12(12), 6236. <https://doi.org/10.3390/app12126236>
- Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: The state of the field. *International Journal of Educational Technology in Higher Education*, 20(1), 22. <https://doi.org/10.1186/s41239-023-00392-8>
- Czarnitzki, D., Fernández, G. P., & Rammer, C. (2023). Artificial intelligence and firm-level productivity. *Journal of Economic Behavior and Organization*, 211, 188–205. <https://doi.org/10.1016/j.jebo.2023.05.008>

- Cheng, X. (2023). The widespread application of artificial intelligence in education necessitates critical analyses. *Science Insights Education Frontiers*, 16(2), 2475–2476. <https://doi.org/10.15354/sief.23.co081>
- Domenech, J. (2023). ChatGPT in the classroom: Friend or foe? *9th International Conference on Higher Education Advances (HEAd'23)*, 339–347. <https://doi.org/10.4995/HEAd23.2023.16179>
- Drach, I., Petroye, O., Borodiyenko, O., Reheilo, I., Bazeliuk, O., Bazeliuk, N., & Slobodianiuk, O. (2023). The use of artificial intelligence in higher education. *International Scientific Journal of Universities and Leadership*, 15, 66–82. <https://doi.org/10.31874/2520-6702-2023-15-66-82>
- Ebner, M., Edelsbrunner, S., & Schön, S. (2023, December 13). Supporting learning and teaching with good design: Report and lessons learned from learning experience design in higher education. In K. Kang & F. Namisango (Eds.), *E-service digital innovation*. IntechOpen. <https://doi.org/10.5772/intechopen.107489>
- Guerrero-Quíñonez, A. J., Bedoya-Flores, M. C., Mosquera-Quíñonez, E. F., Mesías-Simisterra, Á. E., & Bautista-Sánchez, J. V. (2023). Artificial intelligence and its scope in latin american higher education. *Ibero-American Journal of Education & Society Research*, 3(1), 264–271. <https://doi.org/10.56183/iberoeds.v3i1.627>
- Hooda, M., Rana, C., Dahiya, O., Shet, J. P., & Singh, B. K. (2022). Integrating LA and EDM for improving students success in higher education using FCN algorithm (V. Kumar, Ed.). *Mathematical Problems in Engineering*, 2022, 1–12. <https://doi.org/10.1155/2022/7690103>

- Huang, L. (2023). Ethics of artificial intelligence in education: Student privacy and data protection. *Science Insights Education Frontiers*, 16(2), 2577–2587. <https://doi.org/10.15354/sief.23.re202>
- Iordache-Platis, M. (2018). Building a higher education learning experience strategy; theoretical and practical approaches. *Proceedings of the International Conference on Business Excellence*, 12(1), 486–497. <https://doi.org/10.2478/picbe-2018-0044>
- Lecturer, Department of Computer Science Akshara First Grade College, Anekal, N C, A., Kumar, N., M, N., & V, S. (2023). Leveraging artificial intelligence in education: Transforming the learning landscape. *International Research Journal of Computer Science*, 10(5), 192–196. <https://doi.org/10.26562/irjcs.2023.v1005.16>
- Lyz', N., Golubeva, E., & Istratova, O. (2022). Students' educational experience: The conceptualization and development of a tool for the assessment of education quality. *Voprosy Obrazovaniya / Educational Studies Moscow*, (3). <https://doi.org/10.17323/1814-9545-2022-3-67-98>
- Lukianets, H., & Lukianets, T. (2023). PROMISES AND PERILS OF AI USE ON THE TERTIARY EDUCATIONAL LEVEL. *Grail of Science*, (25), 306–311. <https://doi.org/10.36074/grail-of-science.17.03.2023.053>
- Mohammed, A. A. Q., Al-ghazali, A., & Khalid A. S. Alqohfa. (2023). Exploring ChatGPT uses in higher studies:: A case study of arab postgraduates in india. *Journal of English Studies in Arabia Felix*, 2(2), 9–17. <https://doi.org/10.56540/jesaf.v2i2.55>
- Marr, B. (2023, October). A short history of chatgpt: How we got to where we are today. <https://www.forbes.com/sites/bernardmarr/2023/05/19/a-short-history-of-chatgpt-how-we-got-to-where-we-are-today/?sh=4111329e674f>

- Mallik, S., & Gangopadhyay, A. (2023). Proactive and reactive engagement of artificial intelligence methods for education: A review. <https://doi.org/10.48550/ARXIV.2301.10231>
- Ola, A. F. (2023, January 9). *Artificial intelligence (AI) is intelligence—perceiving, synthesizing, and inferring information—* (preprint). Open Science Framework. <https://doi.org/10.31219/osf.io/37m9k>
- Oracle. (n.d.). *What is a chatbot?* Retrieved March 7, 2024, from <https://www.oracle.com/chatbots/what-is-a-chatbot/>
- Prince Sattam Bin Abdulaziz University, Osman Hegazi, M., & Abugroon, M. A. (2016). The state of the art on educational data mining in higher education. *International Journal of Computer Trends and Technology*, 31(1), 46–56. <https://doi.org/10.14445/22312803/IJCTT-V31P109>
- PricewaterhouseCoopers. (2024). 2024 AI Business Predictions. Retrieved February 16, 2024, from <https://www.pwc.com/us/en/tech-effect/ai-analytics/ai-predictions.html>
- Sadiku, M. N. O., Ashaolu, T. J., Ajayi-Majebi, A., & Musa, S. M. (2021). Artificial intelligence in education. *International Journal Of Scientific Advances*, 2(1). <https://doi.org/10.51542/ijscia.v2i1.2>
- Schönberger, M. (2023). ChatGPT in higher education: The good, the bad, and the university. *9th International Conference on Higher Education Advances ( HEAd'23)*, 331–338. <https://doi.org/10.4995/HEAd23.2023.16174>
- Sedlmeier, P. (2001). Intelligent tutoring systems. In *International encyclopedia of the social & behavioral sciences* (pp. 7674–7678). Elsevier. <https://doi.org/10.1016/B0-08-043076-7/01618-1>
- Shanklin, R., Samorani, M., Harris, S., & Santoro, M. A. (2022). Ethical redress of racial inequities in AI: Lessons from decoupling machine learning from optimization in medical

- appointment scheduling. *Philosophy & Technology*, 35(4), 96. <https://doi.org/10.1007/s13347-022-00590-8>
- Shute, V., & Zapata-Rivera, D. (2010). Intelligent systems. In *International encyclopedia of education* (pp. 75–80). Elsevier. <https://doi.org/10.1016/B978-0-08-044894-7.00247-5>
- UNESCO. (2022). *Recommendation on the ethics of artificial intelligence*. Retrieved March 15, 2024, from <https://unesdoc.unesco.org/ark:/48223/pf0000381137>
- Wang, T., Lund, B. D., Marengo, A., Pagano, A., Mannuru, N. R., Teel, Z. A., & Pange, J. (2023). Exploring the potential impact of artificial intelligence (AI) on international students in higher education: Generative AI, chatbots, analytics, and international student success. *Applied Sciences*, 13(11), 6716. <https://doi.org/10.3390/app13116716>
- Yoder-Himes, D. R., Asif, A., Kinney, K., Brandt, T. J., Cecil, R. E., Himes, P. R., Cashon, C., Hopp, R. M. P., & Ross, E. (2022). Racial, skin tone, and sex disparities in automated proctoring software. *Frontiers in Education*, 7, 881449. <https://doi.org/10.3389/educ.2022.881449>
- Zhang, Z., & Xu, L. (2022). Student engagement with automated feedback on academic writing: A study on uyghur ethnic minority students in china. *Journal of Multilingual and Multicultural Development*, 1–14. <https://doi.org/10.1080/01434632.2022.2102175>



# Chapter 6

## APPENDICES

### 6.1 Questionnaire on Students' Attitudes towards the Use

#### AI for enhancing academic performance and engagmet.

Welcome to my survey on AI integration in humanities education! We're interested in understanding how AI-driven tools enhance learning experiences. Your input will help us explore effectiveness, challenges, and opportunities. Your responses are anonymous and invaluable.

Thank you for your time!

**1. Email:**

---

**2. In which university are you currently enrolled:**

---

**3. Your Age**

☐ 18-25

☐ 26-35

☐ 36 and above

**4. Your Gender**

☐ Male

☐ Female

☐ Prefer not to say

**5. Academic year**

☐ First Year

☐ Second Year

☐ Third Year

**6. Do you use AI for your academic studies**

☐ Yes

☐ No

**7. How frequently do you use AI-driven tools for academic purposes?**

☐ Always






☐ Often

☐ Sometimes

☐ Rarely

☐ Never

**8. On a scale of 1 to 5, rate the effectiveness of AI-driven tools in enhancing learning experiences in higher education, especially in the humanities:**

				
1	2	3	4	5

**9. How do you perceive your academic performance since using AI-driven tools?**

☐ Improved

☐ Same

☐ Declined

**10. To what extent do you feel engaged in your studies when utilizing AI-driven tools?**

☐ Highly engaged

☐ Moderately engaged

☐ Neutral

☐ Not very engaged

☐ Not engaged at all

**11. How satisfied are you with the integration of AI-driven tools in your humanities courses?**

☐ Very satisfied

☐ Somewhat satisfied

☐ Neutral

☐ Somewhat dissatisfied

☐ Very dissatisfied

**12. Which specific AI-driven tools have you found most effective in your learning?**

☐ Chatbots (e.g., ChatGPT)

☐ Virtual tutors (e.g., TutorBot)

☐ Automated grading systems (e.g., Gradescope)

☐ Text summarization tools (e.g., QuillBot)

**13. What are the main challenges you face when using AI-driven tools in your academic studies?**

☐ Lack of access to reliable internet or technology infrastructure

☐ Insufficient training or support provided for using AI-driven tools effectively

☐ Concerns about privacy and data security when using AI-driven tools

☐ Resistance or skepticism from professors or peers towards the use of AI-driven tools

**14. Do you think AI-driven tools offer opportunities for improving learning experiences in the humanities?**

☐ yes

☐ No

☐ I don't know

**15. If yes please provide examples of opportunities you see in integrating AI-driven tools in higher education**

---

---

---

---

**16. What suggestions do you have for improving the integration of AI-driven tools in humanities disciplines?**

---

---

---

---

**17. Any additional comments, feedback, or experience you would like to provide regarding AI-driven tools in higher education?**

---

---

---

---