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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

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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.

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ABSTRACT

This the abstract of my research paper.

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 most effective ways to use AI-driven tools for enhancing learning experiences in higher education, especially in the humanities?
- What are students' attitudes toward their academic performance while using 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:

- Students who use AI-driven tools reveal better learning outcomes compared to those who do not in higher education, specifically in the humanities.
- AI-driven tools are significantly improving academic performance and engagement in the humanities.
- 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

Before discussing the study of "Harnessing Artificial Intelligence for Enhanced Learning Experiences in the Humanities", it is imperative to first include a review of the most important observations and viewpoints on the topic. This chapter provides an overview of the implementation or integration of AI in high education, focusing on practical ways of using AI-driven tools to enhance academic performance and productivity. Additionally, this chapter addresses the challenges and opportunities associated with the use of AI in higher education institutions in Morocco and abroad. Finally, the chapter concludes with users' perceptions, which are consolidated with statistics and studies conducted by researchers. The aim is to clarify what has been uncovered about this topic through the vivid opinions of users.

2.2 Defining Key Concepts

- **Artificial Intelligence (AI)** refers to the ability of a computer system to perform human tasks that can be accomplished by human Intelligence(Sadiku et al., 2021).

- **AI-driven tools in education** encompass the application of AI tools like "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).

- **Learning experience in higher education** 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).

- **Intelligent Tutoring Systems** refers to educational software containing an AI component. The software tracks students' work, adjusting feedback and providing hints along the way (Shute & Zapata-Rivera, 2010). It aims to provide sophisticated instructional advice on a one-on-one basis (Sedlmeier, 2001).

- **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.). This enables the digitization of human interaction through written or vocal means, giving the impression of ongoing communication with another individual (Oracle, n.d.).

- **Education Data Mining (EDM)** is a technique used to measure students' academic achievement, assess the learning process, evaluate the overall quality of education, and improve the results in higher education. It involves processing and analyzing large amounts of data to extract useful information for decision-making and policy-making in the field of education (Arifin et al., 2022).

2.3 The use of AI in Higher Education

Artificial intelligence has been increasingly integrated into various aspacts of higher education, transforming traditional eduction (Wang et al., 2023). This section explores some ways that AI can be used to enhance learning experiences and increas the academic studens' performance by focusing on personalized learning, intelligent tutoring, and administrative tasks automation.

2.3.1 Personalized Learning

The use of AI technologies in higher education for personalized learning has been shown to enhance academic performance and engagement by providing tailored learning experiences for students. Through algorithms and data analysis, AI can identify patterns in student performance and preferences, enabling personalized content and activity recommendations. This, in turn, improves the student's learning experience, motivation, and engagement. Additionally, AI can provide tailored resources based on specific needs and learning styles and track real-time progress, identifying areas requiring more support and adjusting the learning materials accordingly (Guerrero-Quiñonez et al., 2023) and (Lecturer, Department of Computer Science Akshara First Grade College, Anekal et al., 2023).

Intelligent Tutoring Systems (ITS) as module of Perosnalized learning

Intelligent Tutoring Systems (ITS) offer a promising approach to enhance online learning with the help of AI. ITS provides personalized support, instant feedback, and continuous monitoring for more effective and autonomous learning. It uses AI algorithms to analyze students' data, enabling personalized experiences. These systems adapt to each student's needs, offering relevant content and personalized feedback. According to (Lecturer, Department of Computer Science Akshara First Grade College, Anekal et al., 2023), these systems improve adaptiveness and leverage personalized learning by considering the individual needs of each student. (Bradáč et al., 2022) also support this approach of leveraging personalized learning to enhance students' learning experience.

2.3.2 ChatBots "ChatGPT" as a module

In the field of higher education, ChatGPT [1] has proven its value as a sophisticated AI-driven tool powered by OpenAI. Based on the students' learning history, it offers personalized recommendations. In addition, ChatGPT can provide accurate answers to questions with minimal input. This assists students to improve their study skills and time management and increases motivation and engagement with learning by providing access to a wide range of resources. It can be used to assess students' writing (Mohammed et al., 2023). ChatGPT can effectively shape teaching by allowing educators to make the right decisions, offering personalized assistance and support outside of regular class hours. It also prompts engagement and active learning through interactive and dynamic learning experiences. It can facilitate discussion, stimulate critical thinking, and provide immediate feedback, contributing to a better learning experience (Schönberger, 2023). ChatGPT has the potential to enhance learning and teaching processes,

[1] Chatgpt is not only the Ai-driven tools that are in market yet some of them are based on their API

providing benefits in class preparation, exam preparation, and as a personal tutor (Domenech, 2023).

2.3.3 AI and Administrative Efficiency: Streamlining Operations

AI can be effectively be used to streamline the administrative tasks and automating them, allowing educators to focus more on important activities such as curriculum design (Drach et al., 2023). It can streamline enrollment and improve retention, providing institutional possibilities for better resource management and successful online training processes (Lukianets & Lukianets, 2023). Additionally, AI enables data analysis and pedagogical reporting, facilitating evidance-based decision-making (Guerrero-Quiñonez et al., 2023).

Educational Data Mining (EDM) as a module

EDM is a technique used to extract the knowledge from data and improve academic performance, learning quality, and decision-making. It involves the use of statistical analysis, machine learning, and data mining to analyze academic, socioeconomic, and learning analytics data (Arifin et al., 2022; Hooda et al., 2022). EDM has shown promising results in predicting students' performance, with techniques like J48 [2] and K-means [3] being effective (Prince Sattam Bin Abdulaziz University et al., 2016). The use of Data Mining methods in education, specifically EDM, has the potential to enhance the overall efficiency and success of educational

[2] J48 is a decision tree algorithm that is commonly used in educational data mining (EDM) for classification tasks.

[3] 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.

institutions.

2.4 Challenges of AI in higher education

The emergence of AI and its growing utilization in educational contexts have brought to light a myriad of challenges that accompany its implementation. This section explors the obstacles and issues encountered when integrating AI into higher education settings.

2.4.1 AI bias

Questions has been raisen regarding the detrimental effects of AI on students if used in admission or grading processes. Shanklin argues that AI algorithms even if it is design to be objective and neutural, still be able to produce recially baised output if trained on data that reflect racial biases. in the context of medical appoitment scheduling in the United States, their research found that algorithms predict that black patients are more likely to miss appointments than non-black patients. Although technically accurate based on available data, black patients are disproportionately scheduled in appointment slots with longer wait times, perpetuating racial inequalities and creating a lack of access to healthcare. This raises essential accuracy- fairness trade-offs, as policymakers and stakeholders must decide whether to prioritise efficiency or equity when using AI in these settings. It is not unique to medical appointment scheduling, but extends to other domains such as education, judicial systems, and public safety (Shanklin et al., 2022). In addition to that Yolder Himes suggests that studenst of differenet skin color, face barriers in science, technology, engineering and mathematics(STEM) fields due to baises in online exam. The facial detection algorithms used by the software may be biased against students based on skin tones or gender. The study showed that students with darker skin tones and black students were more likely to be marked for review, and women with the darkest

skin tones were selected for review more often compared to the white men. Hence, automated proctoring software may use biased AI algorithms, which has implications for education, social justice, equity, and diversity (Yoder-Himes et al., 2022).

2.4.2 Data privacy

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