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# Artificial Intelligence and its Relationship with the Humanities

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## Artificial Intelligence and its Relationship with the Humanities

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### ABSTRACT

**Importance of the Study:** This study aims to explore the complex and evolving relationship between artificial intelligence (AI) and the humanities. Its importance lies in shedding light on how AI affects our understanding of humanity and reshapes fields such as literature, philosophy, history, and art. The study also highlights the potential for fruitful collaboration between the two fields and how the humanities can guide the ethical and human-centered development and application of AI.

**Research Problem:** The problem revolves around the challenges and opportunities that AI presents to the humanities. Will AI undermine the role of the humanities in shaping our understanding of the world, or will it open new horizons for research and creativity? How can we ensure that AI serves humanity and enhances its values, rather than becoming a tool for control and manipulation? And how can the humanities contribute to the development of "humanistic" AI that respects ethical and social values?

**Scope of the Study:** This study focuses on specific aspects of the relationship between AI and the humanities and does not claim to cover all dimensions of this complex interaction. Additionally, the study acknowledges the methodological challenges in studying this rapidly developing field and calls for further research and discussion on these issues.

Keywords (Artificial Intelligence, Humanities, Smart Tools, Analysis, Data, Figures)

## **First: What is Artificial Intelligence (AI)?**

In light of the increasing pace of the digital revolution and the diverse uses of computing, programming techniques, and the updating of their codes and inputs, a huge evolution in electronics and their classifications and divisions has taken place. Humanity now faces surprises related to network programs and data, especially in terms of their inputs and outputs, and how traditional applications and programs have been updated in their structure and the services they offer to various sectors. This led to the emergence of what is known as Artificial Intelligence (AI).

Artificial Intelligence consists of digital computer programs that perform tasks that were once done by humans. It is the ability of a computer to perform high-precision tasks regarding input and output, carrying out operations that require human intelligence or even surpass it in certain cases across various fields of life. It simulates human capabilities that may reach emotions, learning, providing opinions, and suggesting ideas.

Previously, specialists handled everything related to the creation, updating, and development of programs and applications, which were eventually made available on the internet. However, AI has now taken over all these tasks, sometimes surpassing the abilities of specialists in their respective fields. The goal is to create systems and data capable of self-learning without human intervention, with capabilities that exceed human abilities, by feeding the computer vast amounts of precise data that enable it to answer any question according to patterns and algorithms, eventually allowing it to work independently.

AI can save time and effort expended by specialists in creating data or software related to a particular knowledge base. Instead of spending that time, AI tools can generate such data in minutes, if not seconds (Floridi, 2023).

The fields of AI are vast and varied, not limited to extracting educational knowledge, creating visual, auditory, or reading content, but extending to performing practical tasks that replace humans, such as programming factories, archiving, generating code, creating websites, and more, with minimal errors or highly reduced error rates compared to human work outcomes.

The rapid and astonishing development of AI tools has, in many cases, shaken the confidence of specialists in their fields, leading many programmers and electronics professionals to shy away from pursuing this area. In the age of AI, many of these specialists seem redundant, as better and free alternatives are available (Renda, et al., 2023).

Therefore, it can be said that AI is a broad technology used in all sectors of life, including education. Different types of AI are employed in education, primarily for detecting plagiarism, ensuring exam integrity, learning management systems, transcribing faculty lectures,

enhancing online discussion boards, analyzing student success metrics, and academic research. Currently, EdTech companies are deploying emotional AI to measure social and emotional learning, and this combination of AI, emotional computing, and machine learning is called "emotional AI" (Ahmad, et al., 2013).

AI has radically changed human society, as symbolic neural AI has vast potential for analyzing and solving data-driven social and human challenges on a large scale. Many researchers agree that the AI revolution can be vital in education, but this does not mean it will always be beneficial or free from ethical concerns. As a result, many researchers focus on its development and usage while taking ethical considerations into account. Some believe that although AI in education may have positive intentions, this may not be enough to prove its ethics.

The value of AI applications in the humanities and social sciences is evident, as it facilitates shifts in research models. AI can be used to explore and solve social and human issues that require vast amounts of data, so emerging interdisciplinary fields such as computational social science and digital humanities can benefit from its development.

It cannot be denied that AI has revolutionized the methodology of social and human sciences. AI is transforming data modeling and analysis, and its foundational knowledge of research procedures allows it to process large data sets and uncover complex patterns that were previously hidden. This shift in models is redefining the nature of study in various fields. Moreover, AI creates new analytical opportunities and offers researchers perspectives that were previously unavailable, combining digital technologies with social and human sciences for depth and precision in analysis while speeding up data processing (Nivedita, et al., 2013).

There is a historical relationship between AI technology and the humanities. Philosophers, anthropologists, historians, and artists have been prominent contributors to the development of technology throughout the industrial revolution. They continue this tradition today by specializing in the humanities, providing deeper understanding of AI's impact on humanity—through ethical, historical, creative, and cultural perspectives. For example, philosophers have long examined questions and provided theoretical foundations for proposals such as “Can a machine act intelligently?”, “Can it solve any problem a human can solve by thinking?”, and “Are human intelligence and artificial intelligence the same?” Historians and literature professors are now unlocking AI's potential, as it provides humanities researchers with unprecedented abilities for rapid research and understanding of digital collections. Social science analyses have explored the risks of inaccurate AI outputs, with growing concerns about training law and business students, for example, on biased data sets, leading to incorrect outcomes (The Australian Council of Learned Academies, 2023).

There is a pressing need to understand the major challenges faced by humanities specialists in their interaction with AI tools. Among the foremost issues is the ethical handling of the values and outputs of this revolution (security and privacy, the loss of human decision-making abilities, making humans lazy). This means that it is essential to be "ethical" in the context of AI and education. It is also crucial to understand the potential unintended consequences of using AI in education and the primary concerns related to AI in education, among other considerations. In general, the ethical issues and concerns surrounding AI include the cost of innovation, consent issues, misuse of personal data, criminal and malicious use, loss of freedom and independence, the loss of human decision-making, etc., even though technology also enhances information security, organizational competitiveness, and customer relations (Ahmad, et al., 2023).

The arts and humanities can help us identify and clarify the ethical values and principles that should form the foundation for the development and use of AI. For instance, they can assist in defining what it means to respect human dignity, autonomy, privacy, justice, accountability, transparency, and diversity in the context of AI (Tasioulas, 2021). They can also help explore how to translate these values into concrete rules and standards that can regulate or manage AI. The arts and humanities can aid in studying the ethical dilemmas and trade-offs that may arise from AI, as well as in considering the moral responsibilities and obligations we owe to AI agents or systems. Additionally, they can assist in critical thinking about our ethical assumptions and biases that may influence our decisions or judgments regarding AI, and in challenging our moral authority or expertise, which may derive from qualifications or professional or academic positions (Stefan, 2023).

## **Second: Uses of artificial intelligence for humanities students**

University students, researchers, and professors can use generative AI tools as an additional support mechanism in their educational journey. These tools help answer questions, simplify concepts, and enable the evaluation of academic progress while identifying areas requiring further focus. However, over-reliance on these tools could weaken active learning. Some of the key tasks that AI can provide for students and researchers include:

1. **Personalized Learning:** Generative AI allows students to tailor their educational paths to suit their individual learning styles. It provides the ability to adapt content and learning methods based on the needs of each student, whether through offering additional materials for those who need extra support or accelerating learning for advanced students.

2. **Support and Assessment:** Generative AI provides a variety of supportive tools for students in the learning process, such as simplifying concepts, programming, summarizing, brainstorming, language learning, correcting language errors, and evaluating written work and offering feedback.
3. **Opening New Horizons for Teaching Development:** AI can help support professors in their various tasks and improve their teaching methods.
4. **Content Generation:** Generative AI allows professors to create customized educational content suited to various student levels, supporting individualized and effective teaching, which can increase learning motivation.
5. **Providing Suitable Discussions and Continuous Learning Opportunities:** AI can create discussions and learning opportunities that promote continuous engagement.
6. **Course Design and Assessment Creation:** AI can assist in crafting new ideas for course content and activities, designing tests, and creating exercises that support learning (Saudi Data and Artificial Intelligence Authority, 2023).
7. **Leveraging AI for Data Analysis:** One of the core aspects of a prominent form of the humanities, such as history, involves sifting through vast amounts of data, starting from archives, manuscripts, and digital records. AI, equipped with machine learning algorithms, can analyze and classify this data quickly, significantly speeding up the research process. Historians can now access historical documents with ease and accuracy, allowing them to focus more on interpretation and analysis rather than the tedious task of data collection (AI News AI Tools, 2023), and thus improving data extraction from them.
8. **Preserving and Restoring Historical Documents:** Some AI tools play a pivotal role in preserving historical documents. Through advanced imaging and scanning techniques, AI can transform fragile, ancient manuscripts into digital formats, preserving them for future generations. Moreover, AI can automatically correct and enhance the quality of digital documents, ensuring the content remains clear and intact, with the ability to replicate, translate, and comprehend the language in which they were written (AI News AI Tools, 2023).
9. **Using AI to Analyze Historical Documents:** Historians have begun using machine learning—particularly deep neural networks—to examine historical documents,

including astronomical tables like those produced in Venice and other early modern cities, which have been damaged due to centuries spent in decaying archives or due to the distortion caused by printer slips.

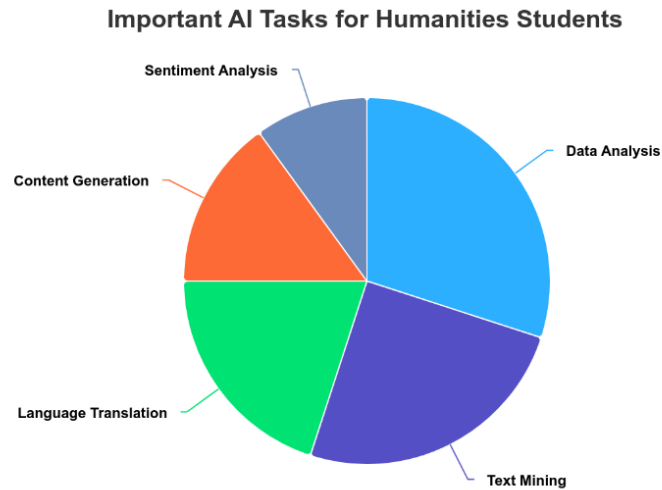
10. Big data has reached the humanities through initiatives to digitize an increasing number of documents and humanistic literature, such as national library collections containing millions of newspaper pages and court records from archives dating back centuries. For researchers, this represents both a challenge and an opportunity. There is so much information, and often no existing means to sift through it. This challenge has been overcome through the development of computational tools that assist scholars in analyzing the complexities (Donovan, 2023).

### **Third:: AI Technologies Impacting Education (Humanities as a Model)**

Artificial Intelligence in Education (AIED) is defined by a range of definitions that, at their core, align closely with the general concept of artificial intelligence. The key definitions are as follows:

1. AI technologies can enable intelligent teaching systems to solve problems they identify for the user in a human-like and appropriate manner, and then reflect on and comment on the problem-solving process.
2. A summary of AI in the context of education is as an intelligent educational system that helps organize system knowledge and operational information to improve operator performance and automatically assess exercise progress and treatment during a training session based on previous student performance.
3. As artificially intelligent teachers, AI systems build real-time responses using their own ability to understand the problem and evaluate student analytics.
4. AI is defined as computational systems capable of engaging in human-like processes such as learning, adapting, synthesizing, self-correcting, and using data for complex processing tasks.
5. AI is defined as computational systems capable of engaging in processes similar to human operations like adapting, learning, synthesizing, correcting, and using various data required to process complex tasks. (Chong, et al., 2020)

Several key AI technologies have a significant impact on education, as well as on the culture of both the learner and the teacher. These technologies have the power to enrich teaching and



learning methods and enhance educational outcomes. Among them are adaptive learning systems, which represent a revolutionary approach in education. They harness the power of AI to transform traditional classroom environments, utilizing advanced AI algorithms that serve as smart guides throughout each student's educational journey. One of the primary aspects addressed by adaptive learning systems is content personalization, which in turn promotes a positive attitude toward learning, fosters lifelong commitment to education, and ensures that no student is left behind. (Hayek, 2023)

Humanities can benefit from AI in many ways. Today, we have excellent search engines that do this work on our behalf. However, there are numerous challenges when it comes to using AI in humanities research. (Clark, 2024) First and foremost, the data that humanities scholars are concerned with is generally not available in easily accessible digital formats. The second major challenge is that AI typically searches for large patterns, while humanities researchers tend to focus on small details. (Blanke, n.d.)

Writing and its outputs, as well as the organization of scholarly papers created by AI, operate almost in the same way as human writing. AI is trained by browsing millions of articles or images, and then it creates its own output based on these other works, all of which happens within seconds. As a result, there are many opinions about the ethics of art and writing generated by AI.

From this point onward, there are several practical examples of AI applications in examining the content of some original humanities literature, including, for instance, the "examination of manuscripts." This is illustrated in a study conducted by Batjargal and colleagues in 2010, which focused on nearly 50,000 manuscripts from the digital library of traditional Mongolian

script. This study enabled the presentation of documents and the search for data in both modern and traditional Mongolian scripts with a high degree of success. The researchers applied the (SPI) program, developed at the University of Pisa, to work on 7,789 Malaysian manuscripts. The purpose of the study was to determine the date and geographic location of each document based on the analysis of writing styles. Their work included decorating pages with special materials, as such elements contain spatial and temporal information. (Diego & Carlos, 2024) Similarly, a research team developed (PYTHIA), a fully machine-trained deep learning model designed to restore the text of ancient Greek inscriptions by predicting the character sequences that make up the proposed restoration processes. This was complemented by (PHI-ML), a dataset of machine-readable texts consisting of over 3.2 million words. The research was expanded and enhanced with the development of (Ithaca), a deep neural network model aimed at automating the restoration and attribution process to improve the analysis and restoration of written documents in ancient Greek. Like (PYTHIA) and other studies in this field, (Ithaca) started by identifying recurring patterns and expressions through textual and contextual parallels, enabling the system to accurately determine the geographic and temporal location of these inscriptions. This required the creation of a dataset of machine-readable written texts, containing 76,608 texts. Once the results were obtained, the task of the researchers was to verify whether the proposed reconstructions were correct or needed modification. (Diego & Carlos, 2024)

These are simple examples of how effective AI tools can be in dealing with physical humanities literature.

In a study conducted by a research team from Asian universities—Chong Guan, Jian Mou, and Zhiying Jiang in 2020—a study titled "Artificial intelligence innovation in education: A twenty-year data-driven historical analysis" was published in the ScienceDirect repository. The study carried out an extensive content analysis with computer assistance on studies published in reputable journals. Titles and abstracts from all selected articles published between 2019 and 2020 were collected from publisher sites and the Google Scholar repository. These text data were fed into (Leximancer) for in-depth text analysis. In addition to computer-assisted content analysis, the team complemented the study by manually analyzing the subject matter depicted in each concept map. Thanks to this massive dataset exploration and analysis, their research uncovered key research topics and typical shifts in the field. (Chong, et al., 2020)

In the past five years, three research papers have studied the scientific output on AI in education across various journals. The researchers examined 132 papers published on AI in higher education, indexed in the Web of Science (WOS) and Scopus databases between 2007 and

2017. Their findings revealed that although AI is receiving global attention, research on its application in higher education is still in its early stages. In the same year, the researchers explored 146 articles in EdTech journals published between 2007 and 2018. They identified four key pillars for AI in Education (AIED) applications in academic, administrative, and institutional support services: profile creation and prediction, assessment and evaluation, adaptive systems and personalization, and smart transport systems. Their findings highlighted that there had been insufficient critical consideration of the risks and challenges in AIED research. Additionally, they emphasized the gap in future research regarding ethical educational curricula and the connection to theoretical perspectives on AI in higher education. They also explored trends in AIED research, with a particular focus on medical education, examining 37 articles published from the 1980s to the present. They reported three core applications: A) Learning support, B) Progress assessment, and C) Curriculum review. The results underscored the importance of addressing technical difficulties and assessing the effectiveness of AI in order to accelerate its adoption. In short, the main advantage of AIED applications is the ability to provide adaptive, guided educational pathways and individualized feedback at a low cost. (Chong, et al., 2020)

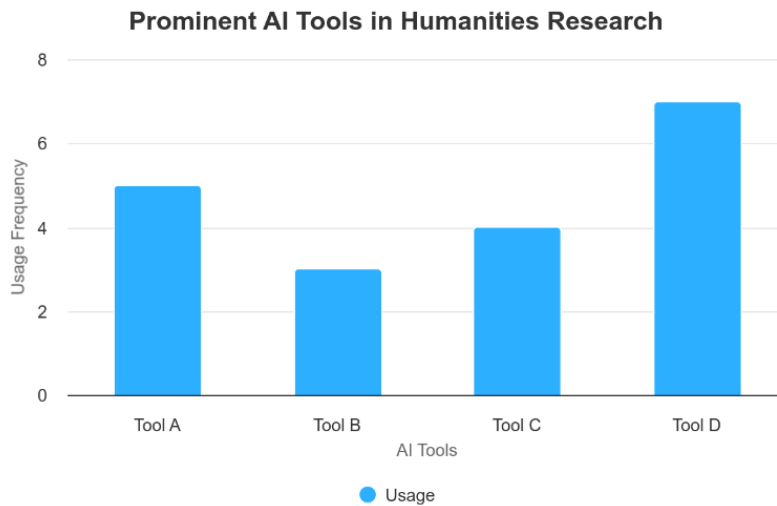
For example, a wide range of AI tools can be used to modify a research title, including but not limited to:

1. **Google's Gemini tool** (in all its versions), which is one of the most prominent AI tools with a range of impressive features.
2. **GPT 4-O Mini tool**.
3. **GPT 4-O tool** from OpenAI.
4. **Claude tool** (in all its versions).

Table showing the role of smart tools for humanities students

AI Tool	Role/Contribution (%)	Importance for Humanities Students
Google's Gemini tool	30%	High: Assists in research, content generation, and optimizing search for academic papers.
GPT 4-O Mini tool	25%	Moderate: Helps in generating concise and structured titles, useful for students in various humanities fields.
GPT 4-O tool from OpenAI	25%	High: Offers advanced language generation, content refinement, and assistance in writing papers and research.

AI Tool	Role/Contribution (%)	Importance for Humanities Students
Claude tool	20%	Moderate: Useful for revising and refining titles, as well as aiding in detailed content generation for humanities research.



Indeed, AI tools can be highly effective in assisting with the formulation and organization of research titles. For example, by providing an AI tool like **GPT 4-O Mini** with details about your research's main idea and key points, you can ask it to refine or generate a title that aligns with your study's objectives. In your case, you requested a title for a paper on "Opposition in Iran after 1941," and the tool generated the title: "Forms of Opposition in Iran after 1941: Political and Social Developments and Impacts."

AI tools like these often present various thought-provoking questions that can help refine your title or organize your research paper's subheadings. By rephrasing the initial query, you can generate different versions of the title. This flexibility allows you to experiment with variations and discover the most compelling version.

Additionally, many AI tools have the capability to compare your proposed title with existing research titles, preventing duplication and ensuring originality. For instance, if you ask AI to compare your proposed title with others on similar topics, it will help you identify if your title overlaps with existing research.

In another example, you used **AppyPie** to generate a title on the "Economic Reality in Iraq under King Faisal I," and it produced over 30 different options. This showcases how these tools can help you craft multiple compelling and optimized titles.

AI tools analyze search engine results pages (SERPs) and use deep learning to determine the best keywords and phrases for creating optimized titles. These tools ensure your title not only ranks well in search results but also attracts readers to your content, whether it's a research paper, blog post, or webpage. The goal is to enhance the visibility and appeal of your work in a competitive digital environment.

### **Conclusion:**

In conclusion, our study of the relationship between artificial intelligence (AI) and the humanities reveals that this relationship is not one of competition or opposition, but rather a complementary one that opens new horizons for human knowledge and creativity. Despite its growing capabilities, AI remains, at its core, a tool created by humans, one that requires the guidance of human values and visions, which form the essence of the humanities.

The greatest challenge we face today is not to oppose AI or fear it, but to figure out how to harness it in a way that serves human progress while preserving our values and cultural identity. Here, the role of the humanities becomes crucial as an ethical and cultural guide for the development of intelligent technologies, and as a guarantor of keeping the human element at the heart of this development.

As technological advancement accelerates, the importance of continuous dialogue between the two fields grows, along with the need to develop new methodologies and intellectual frameworks that combine human depth with technological potential. The future of human knowledge depends on our ability to create a balance between technological innovation and human wisdom, between machine efficiency and ethical values.

In conclusion, the relationship between AI and the humanities represents a historic opportunity to redefine the role of humanity in the age of technology and to develop a deeper understanding of what it means to be human in a world increasingly dependent on intelligent machines. Our primary mission remains to ensure that humanity, with its values, creativity, and humanity, remains the center and ultimate direction of this evolution.

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**The authors declare that there is no conflict of interest.**

**Research data availability statement**

- The entire dataset supporting the results of this study was published in the article itself.

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