

ChatGPT in the Classroom: Empowering University Education through Artificial Intelligence and Social Sciences

Ivonne Eulalia Ponce Naranjo¹, Odalys Monserrath Logroño Ponce², Arnaldo Yana Torres³, Leonel Suasaca Pelinco⁴

Abstract

A documentary review was carried out on the production and publication of research papers related to the study of the variables ChatGPT, Social Sciences, Education. The purpose of the bibliometric analysis proposed in this document was to know the main characteristics of the volume of publications registered in the Scopus database during the year 2023, achieving the identification of 13 publications. The information provided by this platform was organized through graphs and figures, categorizing the information by Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics have been described, the position of different authors on the proposed topic is referenced through a qualitative analysis. Among the main findings made through this research, China with 3 publications was the country with the highest scientific production registered in the name of authors affiliated with institutions of that nation. The Area of Knowledge that made the greatest contribution to the construction of bibliographic material related to the study of ChatGPT, Social Sciences, Education was Social Sciences with 5 publications, which were presented through theories associated with the area of Computer Science, and the most used Publication Type during the period indicated above were Journal Articles with 21% of the total scientific production.

Keywords: ChatGPT, Social Sciences, University Education.

1. Introduction

The incorporation of artificial intelligence has emerged as a powerful transformative tool, which remodels the educational system which is constantly evolving, this powerful tool has the characteristics of being able to change the teaching methods implemented in a traditional way and allows to broaden the gaze towards new horizons of academic commitment. One of the technological tools offered by artificial intelligence is the so-called ChatGPT, a natural language algorithm model developed by Open AI, this innovative tool has found a prominent place in the classrooms of all universities, together with the features offered by this artificial tool and the social sciences in order to improve the educational experience.

¹ Universidad Nacional de Educación- UNAE, ORCID: 0000-0003-1089-3888

² Instituto Superior Universitario Stanford (Riobamba – Ecuador)

UMOV Academy Universidad en Línea (México), odalyslogrono@gmail.com, ORCID: 0009-0008-2556-6162

³ Universidad Andina Néstor Cáceres Velásquez, arnaldo644@hotmail.com, ORCID: 0000-0002-6740-5024

⁴ Universidad Andina Néstor Cáceres Velásquez, leonelssp@uancv.edu.pe, ORCID: 0000-0001-6657-665X

However, it is important to point out that one of the commitments of teachers is to ensure the success of students, allowing them to improve the skills necessary to forge success in such a globalized world which is constantly changing. One of the qualities offered by this tool is its ability to generate texts similar to human language, this feature offers a unique opportunity which seeks to bridge the gap between conventional approaches and the existing demands in modern educational models. By leveraging ChatGPT's capabilities, educators can unlock new avenues for interactive and dynamic learning experiences.

The incorporation of ChatGPT into university classrooms would reflect a significant shift in already established educational paradigms, where together AI and social sciences would provide a fertile field for innovation and intellectual exploration. This innovative approach not only augments the teaching process, but also allows students to engage with course content in a more personalized way. One of the components of this artificial tool focuses on its adaptability in different subjects, including the social sciences. From addressing topics in psychology, sociology, and economics, ChatGPT provides a multifaceted accompaniment for teachers and students. Their ability to understand complex concepts, generate coherent responses, and facilitate meaningful conversations propel social science education into a new era of enriched discourse.

Likewise, ChatGPT's real-time feedback mechanism is an essential competency for perfecting students' critical thinking and analytical skills. The model's ability to engage in nuanced discussions, simulate dialogue scenarios, and provide instant feedback fosters an environment where intellectual curiosity is fostered and analytical skill is honed. These new experiences in modern learning go beyond the boundaries of traditional pedagogy, promoting a culture of collaboration and exploration.

Integrating ChatGPT into the classroom also addresses the challenges posed by diverse learning styles and preferences. This recognizes the importance of students acquiring information in many ways, this allows ChatGPT to offer students a learning experience focused on personalization. The algorithm of this artificial intelligence promotes diverse learning methods, which start in the writing of texts in natural language, voice command or visual aids, this tool has the quality of being able to adapt to the various learning modalities, this with being able to promote knowledge in a comprehensive way and that students can access and analyze the curricula in a more comprehensive way.

With the constant acceleration of these technologies, universities must benefit from the potential of AI, particularly the integration of ChatGPT, which has the particularity of being at the forefront of educational needs. By combining the skills of artificial intelligence with the nuanced research of the social sciences, educators can cultivate a generation of students equipped not only with subject-specific knowledge, but also build critical thinking and adaptability skills for today's changing future. For this reason, this article seeks to describe the main characteristics of the compendium of publications indexed in the Scopus database related to the variables ChatGPT, Social Sciences, Education, as well. Such as the description of the position of certain authors affiliated with institutions, during the period included in the year 2023.

2. General Objective

To analyze, from a bibliometric and bibliographic perspective, the preparation and publication of research papers in high-impact journals indexed in the Scopus database on the variables ChatGPT, Social Sciences and Education during the year 2023.

3. Methodology

This article is carried out through a research with a mixed orientation that combines the quantitative and qualitative method.

On the one hand, a quantitative analysis of the information selected in Scopus is carried out under a bibliometric approach of the scientific production corresponding to the study ChatGPT, Social Sciences and Education. On the other hand, examples of some research works published in the area of study mentioned above are analyzed from a qualitative perspective, based on a bibliographic approach that allows describing the position of different authors on the proposed topic. It is important to note that the entire search was carried out through Scopus, managing to establish the parameters referenced in Figure 1.

3.1. Methodological design



Figure 1. Methodological design

Source: Authors' own creation

3.1.1 Phase 1: Data collection

Data collection was carried out from the Search tool on the Scopus website, where 13 publications were obtained from the following filters:

TITLE-ABS-KEY (chatgpt, AND social and sciences, AND education)

- Published documents whose study variables are related to the study of the variables ChatGPT, Social Sciences, Education
- Limited to the year 2023.
- Without distinction of country of origin.
- Without distinction of area of knowledge.
- No distinction of type of publication.

3.1.2 Phase 2: Construction of analytical material

The information collected in Scopus during the previous phase is organized and then classified by graphs, figures and tables as follows:

- Co-occurrence of words.
- Country of origin of the publication.
- Area of knowledge.
- Type of publication.

3.1.3 Phase 3: Drafting of conclusions and outcome document

In this phase, the results of the previous results are analysed, resulting in the determination of conclusions and, consequently, the obtaining of the final document.

4. Results

4.1 Co-occurrence of words

Figure 2 shows the co-occurrence of keywords found in the publications identified in the Scopus database.

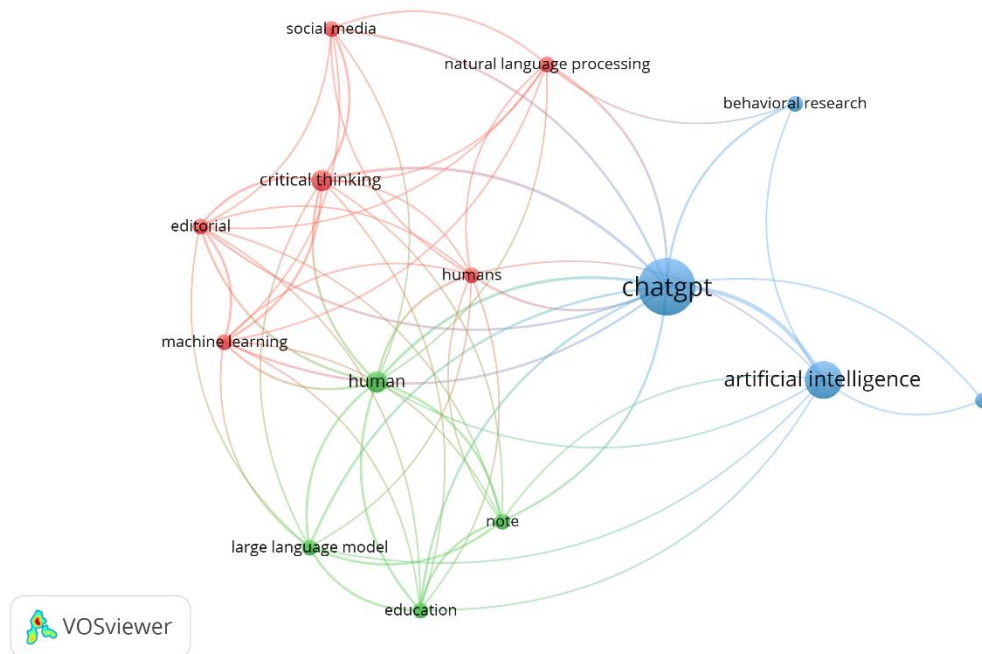


Figure 2. Co-occurrence of words

Source: Authors' own elaboration (2023); based on data exported from Scopus.

ChatGPT was the most frequently used keyword within the studies identified through the execution of Phase 1 of the Methodological Design proposed for the development of this article. Artificial Intelligence is among the most frequently used variables, associated with variables such as Education, Innovation, Natural Language Processing, Behavioral Research, Natural Language Model, and Matching Learning. As we delve deeper into the multifaceted relationship between ChatGPT and education, further exploration will reveal the various applications, benefits, and potential challenges that arise when AI and social sciences converge in the college classroom. The journey promises to be transformative and offer a glimpse into the limitless possibilities that arise when technology and education are harmonized to shape the intellectual landscape of tomorrow.

4.2 Distribution of scientific production by country of origin

Figure 3 shows how scientific production is distributed according to the country of origin of the institutions to which the authors are affiliated.

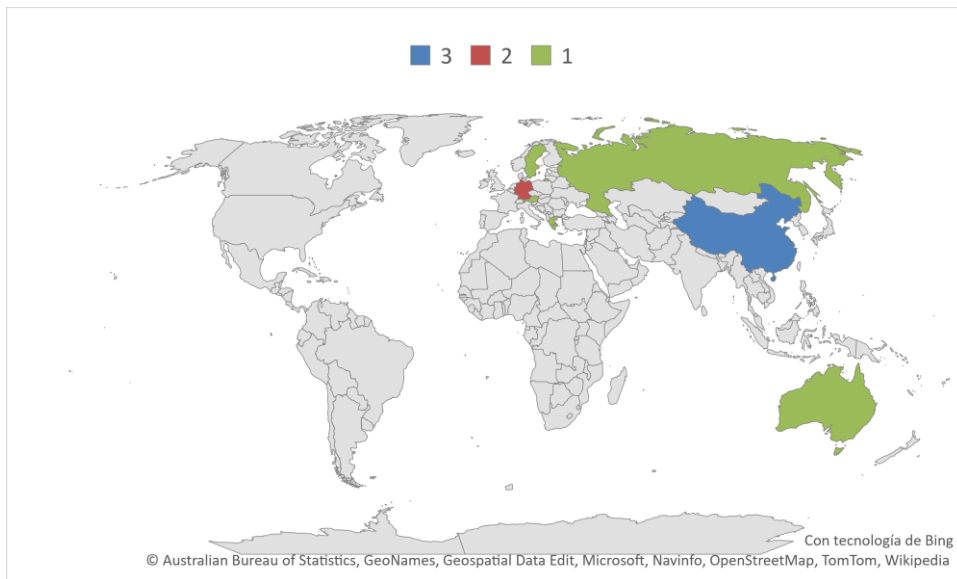


Figure 3. Distribution of scientific production by country of origin.

Source: Authors' own elaboration (2023); based on data provided by Scopus.

Within the distribution of scientific production by country of origin, the registrations from institutions were taken into account, establishing Brazil as the country of this community, with the highest number of publications indexed in Scopus during the period 2023, with a total of 3 publications in total. In second place, Germany with 2 scientific papers, and Australia occupying third place presenting to the scientific community, with a total of 1 papers among which is the article entitled "Use of case studies in social work evaluations: ChatGPT's kryptonite?" This article reflects on the past semester of 'life with ChatGPT', starting with a narrative of current practices in assessment writing at the Singapore University of Social Sciences, before embarking on a test of the response generated by ChatGPT by answering a case study based exam question. In tandem with the author's experiences in grading tasks that had been at least partially generated by artificial intelligence (AI) but were not known at the time, it is assumed that case studies tend not to lend themselves well to AI generating good quality responses. tools like ChatGPT, at this current stage of its development. However, implications for writing assessments involving case studies include the need for sufficient detail, both essential and peripheral, so that students have to "separate the wheat from the chaff" and decipher how best to apply the concepts being examined based on the unique circumstances. of the case scenario. Right now, using complex, detailed, and well-written case studies in assessment questions seems to be ChatGPT's kryptonite and could ensure authentic assessments.(Netto, 2023)

4.3 Distribution of scientific production by area of knowledge

Figure 4 shows the distribution of the elaboration of scientific publications based on the area of knowledge through which the different research methodologies are implemented.

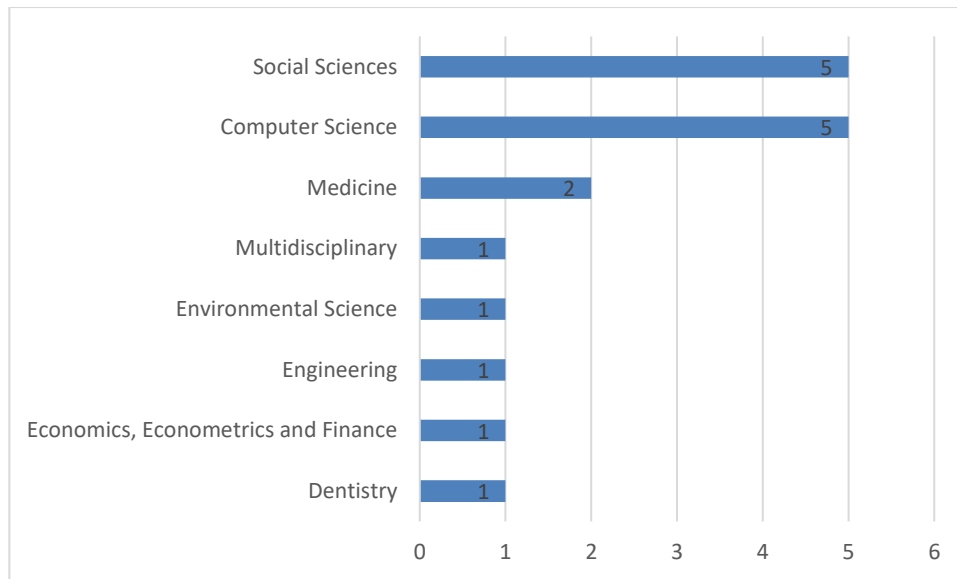


Figure 5. Distribution of scientific production by area of knowledge.

Source: Authors' own elaboration (2023); based on data provided by Scopus

Social Sciences was the area of knowledge with the highest number of publications registered in Scopus with a total of 5 documents that have based their methodologies ChatGPT, Social Sciences, Education. In second place, Computer Science with 5 articles and Medicine in third place with 2. The above can be explained thanks to the contribution and study of different branches, the article with the greatest impact was registered by Social Sciences entitled "From the sociology of algorithms to the social analytics of artificial sociality: an analysis of cases of API and ChatGPT" this article conceptualizes and offers a framework to analyze two cases of currently developed technologies: API and ChatGPT. The authors investigate the approach they recently introduced to analyze how these two cases shape the development of the social sciences by studying the interdependence between humans and machines. They formalize the problems generated by the technological advancement of APIs and ChatGPT in society. Specifically, the article considers the impact of ChatGPT on education. The authors characterize the relationships between APIs and ChatGPT with respect to online culture and advances in the interdependence of human algorithms. Questioning how and why ChatGPT should be used in different societies and cultures, they argue that new social analytics need to be developed to address more issues that arise with a new reality: artificial sociality.(Rezaev, 2023)

4.4 Type of publication

In the following graph, you will see the distribution of the bibliographic finding according to the type of publication made by each of the authors found in Scopus.

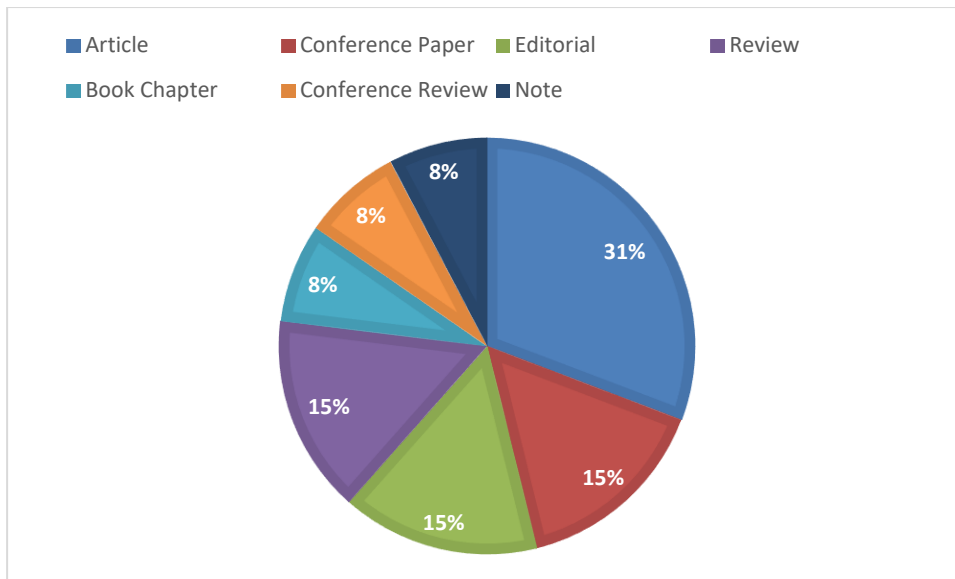


Figure 5. Type of publication.

Source: Authors' own elaboration (2023); based on data provided by Scopus.

The type of publication most frequently used by the researchers referenced in the body of this document was the one entitled Journal Articles with 31% of the total production identified for analysis, followed by Session Paper with 15%. Editorial are part of this classification, representing 15% of the research papers published during the 2023 period, in journals indexed in Scopus. In this last category, the one titled "Hello GPT! Goodbye home exam? An exploratory study of the impact of AI chatbots on the evaluation practices of university professors" AI chatbots have recently fueled the debate on educational practices in higher education institutions around the world. Focusing on generative AI and ChatGPT in particular, our study examines how AI chatbots impact university faculty assessment practices, exploring faculty perceptions of how ChatGPT performs in response to at-home exam prompts in university contexts. University professors ($n = 24$) from four different humanities and social sciences departments participated in Turing-test-inspired experiments, where they blindly evaluated students' written responses and ChatGPT to at-home exam questions. In addition, we conducted semi-structured focus group interviews with the teachers themselves, examining their reflections on the quality of the texts they evaluated. Regarding chatbot-generated texts, we found a cohort-wide pass rate range (37.5-85.7%) and a chatbot-written suspicion range (14-23%). With respect to student-written texts, we identified patterns of degradation, suggesting that teachers were more critical in grading student-written texts. Drawing on post-phenomenology and mediation theory, we analyze AI chatbots as a potentially disruptive technology in higher education practices (Farazouli, 2023)

5. Conclusions

Through the bibliometric analysis carried out in this research work, it was possible to establish that China was the country with the highest number of records published in the ChatGPT, Social Sciences, and Education variables. With a total of 3 publications in the Scopus database. In the same way, it was possible to establish that the application of theories framed in the area of Social Sciences, were implemented with greater frequency in the incorporation of ChatGPT in the classroom, which has been delayed to be an essential pillar in the improvement of educational at the university level, emphasizing the field of artificial intelligence and social sciences. The combination of advanced technology and educational methodologies has opened up a new landscape for both educators and students, fostering an environment that fosters critical thinking. One of the

benefits provided by these AI tools lies in their ability to provide academic support in a personalized way to each student. Through its system of algorithms based on natural language, this technological component ChatGPT offers individual-order support, which seeks to address the unique needs and learning styles of students. This one-on-one interaction not only aids in a better understanding of complex concepts, but also cultivates a sense of engagement and enthusiasm for the topic. Based on this assumption, it can be said that this powerful tool plays an important role in educators, as it allows them to create new learning experiences that are much more dynamic and interactive. By incorporating AI into lesson plans, instructors can leverage ChatGPT to simulate real-world scenarios, facilitate discussions, and offer instant feedback. These features not only enhance overall learning experiences, but also allow teachers to focus on teaching learning methods that address critical thinking and thus promote a deeper understanding of social science and artificial intelligence concepts

The integration of ChatGPT also contributes to the development of a more inclusive and accessible educational environment. Students from diverse backgrounds and learning abilities can benefit from the personalized support and interactive learning experiences facilitated by ChatGPT. The incorporation of this tool not only benefits students, but also helps to reduce the gaps based on theory and practice, offering students at universities a much more holistic view of the complex theories of the social sciences and the focused applications offered by artificial intelligence. However, it is critical to approach the integration of ChatGPT in the classroom with ethical considerations in mind. Safeguards should be in place to ensure the responsible use of AI in education, addressing concerns related to privacy, bias, and the possibility of over-reliance on technology.

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