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Perceptions of Higher Education Faculty on ChatGPT: An Empirical Analysis

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Abstract:- This study investigates the perceptions of Moroccan university professors regarding the use of ChatGPT and its impact on student learning, cognitive skills, and academic integrity. Through an online survey of 302 faculty members across various disciplines, the research reveals a nuanced perspective on the integration of AI tools in higher education. While many professors acknowl- edge the benefits of ChatGPT in enhancing problem-solving skills and aiding in structured tasks, significant concerns persist about its potential to undermine critical thinking and foster a reliance on automated responses. Notably, 45% of respondents expressed that ChatGPT may diminish the depth of student analysis, posing challenges for educators aiming to cultivate robust cogni- tive abilities. Additionally, issues of academic integrity were highlighted, with faculty members calling for clearer policies to manage AI use in academic settings. The findings suggest the need for further research into discipline-specific responses to AI and the ethical implications of its inte- gration. In conclusion, while ChatGPT holds promise for supporting educational processes, its effective integration requires careful consideration of both benefits and risks, necessitating col- laboration among educators, policymakers, and researchers to ensure that AI enhances, rather than hinders, student learning.

Keywords:- *Higher Education, Cognitive Skills, Critical Thinking, Moroccan Universities, Student Learning, Educational Technology.*

I. INTRODUCTION

Large generative models such as ChatGPT have the potential to significantly reshape the field of education, offering both challenges and opportunities [1]. ChatGPT, powered by Generative AI, has been at the center of discussions due to its capacity to generate human-like responses, which raises questions about its role in teaching and learning [2].

One of the primary concerns is its potential misuse by students to create plagiarized or inau- thentic academic work, bypassing critical thinking and reducing the effort put into genuine learning processes. This misuse could undermine traditional educational goals by allowing students to gener- ate assignments without deeply engaging with the material, ultimately hindering the development of essential cognitive skills such as analysis, synthesis, and creativity [2]. Despite these challenges, proponents of ChatGPT argue that it has the potential to transform education by providing per- sonalized learning experiences. The tool can serve as an on-demand tutor, offering instant feedback, explanations, and learning pathways tailored to individual students' needs. By automating repetitive tasks and providing accessible learning support, ChatGPT could help students overcome barriers to understanding complex subjects and enhance their problem-solving abilities. It also presents an opportunity for educators to rethink the use of AI as an adaptive learning tool that complements, rather than replaces, the human-centered teaching approach. The study seeks to gain insights into how professors view the potential benefits and drawbacks of integrating ChatGPT into their teach- ing practices, as well as the practical considerations and implications of utilizing such advanced language models in the higher education context.

To achieve this objective, the study employed a quantitative research approach, gathering data from a diverse sample of 302 professors across various disciplines within public universities in Morocco. This research aimed to investigate the perceptions of professors regarding the impact of ChatGPT on the cognitive skills and critical thinking of their students. Through an online survey, data were collected and analyzed, revealing that the majority of professors believe ChatGPT has a mixed impact, with some perceiving benefits in problem-solving skills, but concerns about its influence on critical thinking and creativity. These findings contribute to the ongoing discourse on the role of AI-powered tools in education, offering valuable insights to guide their future implementation.

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The structure of this paper is as follows: the first section provides a comprehensive literature review on the current state of ChatGPT and its applications in higher education, examining the existing research on the opportunities and challenges posed by this technology. The second section outlines the methodology employed in this study, including the research design, data collection, and analysis techniques. The third section presents the key findings from the survey, highlighting the professors' perspectives on the impact of ChatGPT on students' cognitive skills and critical thinking. Finally, the paper concludes with a discussion of the implications of the findings, exploring the potential strategies for the responsible integration of ChatGPT in higher education and suggesting directions for future research.

II. STATE OF THE ART

In fact, professor's perceptions on the use of ChatGPT in higher education is an area that has garnered significant research attention in recent years. In [3], the authors explored the integration of ChatGPT in a computer science course, examining students' perceptions and suggestions. They found that students perceived the tool as having the potential to enhance their learning experience, including improvements in programming skills [3]. However, the study also highlighted concerns about the negative impact of heavy reliance on ChatGPT, which may adversely affect critical thinking and problem-solving abilities [3]. Generally, AI tools that provide automated responses, like ChatGPT, have the potential to improve productivity and assist in various tasks, but there is a need to carefully balance their use to ensure the development of essential skills. Furthermore, a recent study by Bentley et al. specifically examined the use of ChatGPT as a software development tool, evaluating its effectiveness, benefits, and limitations. Effectively, the personalized learning support provided by ChatGPT was found to enhance the participants' fundamental understanding and soft skills. [3] [4].

Recent studies have examined the perspectives of university faculty on the integration of Chat- GPT in educational settings. These studies reveal a range of attitudes, from positive perceptions of its benefits to significant concerns regarding ethical implications and academic integrity. In this table, we address findings from these relevant studies:

Table 1: Summary of Reviews on ChatGPT's Impact on Academic Integrity and Effectiveness Across Disciplines

Article Title	Method	Key Findings
[5]	Comprehensive Review	Proactive measures are necessary to address academic integrity concerns related to Chat- GPT's potential for cheating, and institutions need to adopt ethical AI usage strategies.
[6]	Rapid Review	hatGPT demonstrates varied performance across different subject domains, showing outstanding effectiveness in areas like eco- nomics, satisfactory results in programming, and unsatisfactory outcomes in mathematics, while also raising significant concerns regard- ing the generation of incorrect information and threats to academic integrity.
[7]	Systematic Review	ChatGPT presents both significant benefits and risks in higher education, with benefits such as research support, automated grading, and enhanced human-computer interaction.
[8]	Literature review	Professors have referred to ChatGPT as a "threat" and a "plague on education," and it has been prohibited in several educational institutions.

The second set of studies delves into the experiences of students and their interactions with ChatGPT in higher education. These studies provide insights into how AI tools influence learning outcomes, critical thinking, and students' reliance on technology. In this table, we highlight key findings from these investigations:

Table 2: Summary of Studies on Perceptions and Use of ChatGPT in Various Academic Contexts

Article Title	Sample Size	Method	Key Findings
[9]	87 university professors	Quantitative research method	a significant portion of the respondents rec- ognized the potential benefits of using Chat- GPT, such as supporting time- consuming activities (60.9% agreement) and provok- ing student interest and engagement (59.8% agreement). However, there were also concerns regarding issues like plagiarism and the collec- tion of personal data. The study highlighted a positive perception of ChatGPT's role in edu- cation, with average agreement levels above 3 on a 5-point Likert scale,
[10]	20 Pakistan University teachers	Quantitative Research method	Faculty members had an overall negative per- Caption of ChatGPT, fearing its potential misuse in academic contexts.
[11]	23 university professors from Peru	Qualitative phenomeno- logical study	ChatGPT offers better academic tools but increases plagiarism risks. Professors hold a cautious attitude, concerned with academic integrity issues like cheating and plagiarism.

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[12]	420 Diverse academicroles	mixed-methodsapproach	The study showed mixed perceptions of Chat-GPT, with users being more optimistic thannon-users. Acceptance was higher in research and healthcare compared to education, high- lighting the need for tailored policies. Withonly 40% having used ChatGPT, the findings emphasize the importance of further educa- tion and practical demonstrations to improve understanding and address concerns.
[13]	420 clinical faculty	Quantitative analysis	The study found that ChatGPT varies by con-text, with greater willingness to use them in research and healthcare than in education. Only 40% of participants had used ChatGPT, and these users were generally more positive. The findings highlight the need for targeted education and policies to promote responsibleuse and address concerns about ChatGPT.
[14]	239 students	Quantitative analysis	medical students generally had a more posi-tive perception of using ChatGPT for clini- cal practice and medical education compared to graduated physicians. Specifically, 68% of medical students rated ChatGPT positively for clinical practice, while only 42% of grad- uated physicians did so. Additionally, 83.1%of medical students viewed ChatGPT posi- tively for medical education, compared to 62%of graduated physicians. Despite these differ- ences, both groups agreed on the potentialof ChatGPT to create patient educationalmaterials.
[15]	534 students	Quantitative study	Focus group discussions and surveys revealed that behavioral intention is the strongest pre- dictor of ChatGPT use in higher education, accounting for 56.3% of the usage variance. While social influence and personal innova-tiveness had positive but minimal effects, the model explained 73.4% of the variation in behavioral intention. These findings highlight the need for further research into ChatGPTadoption among students.

III. METHODOLOGY

This study examined how university professors perceive the use of ChatGPT by their students and its impact on higher education. The research focused on Moroccan public universities and included a sample of 400 faculty members, selected through purposive sampling. The participants were selected based on their teaching roles and involvement in higher education, ensuring that they had firsthand experience with both students and academic technology. The sample represented a diverse range of academic disciplines, providing insights into the varying perceptions across fields such as the sciences, humanities, arts, law, and economics.

During the initial planning phase, participants were briefed about the study's objectives, and the research team clarified the purpose and scope of the study to ensure transparency. To gather data, an online survey was administered, which contained five key questions designed to capture faculty views on the potential and risks associated with ChatGPT. The questionnaire covered various aspects, including the perceived impact on student learning, critical thinking, and academic performance.

Participants were informed about how their data would be protected to maintain confidentiality.

Our sample is consistent with previous studies on the topic, with a focus on capturing a range of perspectives from faculty in diverse fields. From 302 participants, 14 not did provide complete responses and thus were excluded from the final analysis. Data is analyzed using python, looking at descriptive statistics.

Once the survey responses were collected, the data was subjected to quantitative analysis. The focus of this analysis was to identify general patterns and trends regarding the use of ChatGPT, as well as to examine any differences in perception based on the academic discipline of the respon-dents. The quantitative approach allowed for a statistical interpretation of the survey data, providing measurable insights into how professors across various fields view the integration of AI tools like ChatGPT into the academic environment.

Ethical considerations were carefully followed throughout the research. This included obtaining informed consent from all participants, ensuring the privacy of the data collected. The study was conducted over three phases: the planning phase, where the methodology and participants were iden- tified; the data collection phase, where surveys were distributed and completed; and the analysis phase, where results were compiled and interpreted. Despite the structured methodology, one lim- itation of the study is its focus on Moroccan public universities, which may restrict the broader application of the findings to different educational systems or regions.

IV. RESULTS

This section presents the results of the survey conducted among Moroccan university professors on their perceptions of ChatGPT's impact on student learning, academic integrity, and cognitive skills. The discussion

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intertwines these findings with existing literature on the subject.

A. Perception of ChatGPT's Impact on Cognitive Skills

The responses regarding ChatGPT's effect on students' cognitive abilities are shown in Table 3. Professors expressed varying opinions about whether ChatGPT enhances or diminishes cognitive development.

Table 3: Perception of ChatGPT's Impact on Cognitive Skills

Response	Number of Pro-fessors	Percentage (%)
Very positive	29	10%
Somewhat positive	57	20%
Neutral	86	30%
Somewhat negative	72	25%
Very negative	43	15%
Total	**287**	**100%**

- Analysis: The majority of professors (30%) expressed neutral views on ChatGPT's influence on cognitive development, with 40% having negative perceptions. Interestingly, 30% view ChatGPT positively. These mixed results are consistent with studies like [2], indicating both the potential benefits and challenges of AI tools in supporting cognitive processes.

B. Perception of ChatGPT's Impact on Critical Thinking

The majority of professors expressed concerns about the impact of ChatGPT on students' critical thinking abilities, as shown in Table 4.

Table 4: Perception of ChatGPT's Impact on Critical Thinking

Response	Number of Pro-fessors	Percentage (%)
Significantly Reduces Critical thinking	129	45%
Reduces to some extent	58	20%
No impact	86	30%
Improves critical thinking	14	5%
Total	**287**	**100%**

- Analysis: A majority of respondents (65%) believe that ChatGPT reduces students' ability to think critically, with 45% indicating a significant reduction. On the other hand, 35% of professors either see no impact or believe ChatGPT improves critical thinking. This reflects ongoing debates about AI tools fostering shallow learning over deep analytical thinking.

C. Perception by Academic Discipline

Professors were asked to assess whether the impact of ChatGPT varied across academic disciplines. Table 5 presents their responses.

Table 5: Perception of ChatGPT's Impact by Discipline

Discipline	Negative Impact (%)	Neutral (%)	Positive Impact (%)
Sciences	40%	45%	15%
Humanities and social sciences	55%	30%	15%
Arts	60%	25%	15%
Law, Economics and Manage-ment	50%	35%	15%
Total			

- Analysis: The arts and humanities disciplines report higher negative impacts (60% and 55%, respectively), while science disciplines present a more balanced view. These results align with findings that more interpretative and creative fields may be more vulnerable to the influence of AI, whereas technical fields see more benefit (Jones et al., 2023).

D. Impact on Academic Work Quality

Table 6 summarizes the responses on ChatGPT's effect on the quality of academic work.

Table 6: Perception of ChatGPT's Impact on Academic Work Quality

Response	Number of Pro-fessors	Percentage (%)
Significantly improves work	21	7.3%
Slightly improves work	57	19.9%
No impact	79	27.5%
Slightly reduces quality	86	30%
Significantly reduces quality	44	15.3%
Total	**287**	**100%**

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- Analysis: 45% of professors indicated a decline in academic quality due to ChatGPT, primarily citing issues related to plagiarism and reduced originality. However, 27% observed improvements, particularly in areas like writing clarity and organization [1].

E. Impact on Student Autonomy

Professors were also asked about ChatGPT's impact on students' ability to work independently.Table 7 shows their responses.

Table 7: Perception of ChatGPT's Impact on Student Autonomy

Response	Number of Pro- fessors	Percentage (%)
Significantly reduces autonomy	114	40%
Slightly reduces autonomy	86	30%
No impact	57	20%
Improves autonomy	29	10%
Total	**287**	**100%**

- Analysis: A majority of respondents (70%) indicated that ChatGPT reduces student autonomy, reflecting concerns that students might overly rely on AI-generated content rather than developing independent thought processes. However, 10% reported an improvement in autonomy, particularly when students used ChatGPT as a support tool for managing complex tasks.

V. DISCUSSION AND CONCLUSION

This study provided an in-depth exploration of Moroccan university professors' perceptions of Chat- GPT and its impact on students' cognitive skills and critical thinking. The results highlight a mixed response to the integration of AI in higher education, where some faculty members see clear bene- fits in enhancing certain academic tasks, while others remain concerned about its negative effects on deeper cognitive processes and academic integrity.

The positive aspects of ChatGPT include its ability to support students in organizing their thoughts and improving problem-solving skills. Professors in technical disciplines tended to see Chat- GPT as an asset, particularly in improving the clarity of student writing and helping with structuredtasks. However, significant concerns were raised about the tool's effect on critical thinking, with many faculty members in the humanities and social sciences perceiving a detrimental impact. The study revealed that 45% of respondents felt that ChatGPT reduced the depth of student analysis, fostering a reliance on automated responses rather than independent thought. This presents a cru- cial challenge for educators who aim to develop not only technical proficiency but also robust critical thinking abilities in their students.

Additionally, concerns about academic integrity were prevalent, with professors warning that ChatGPT might encourage plagiarism and reduce student engagement with original thought. As aresult, faculty members called for clearer policies and guidelines to manage the use of AI in academic settings. While ChatGPT can assist with content generation, its unchecked use risks promoting surface-level engagement with academic material rather than fostering the deeper, reflective processes that are critical to higher education.

Looking ahead, several research perspectives emerge from this study. First, further investigation is needed into discipline-specific responses to AI tools like ChatGPT. Given that different fields of study may benefit or suffer differently from AI, more targeted research could illuminate how best to integrate such tools in a way that complements each academic discipline. Second, longitudinal studiescould track the long-term effects of AI use on student performance and critical thinking, allowing fora better understanding of how these technologies shape learning outcomes over time. Third, researchcould focus on the ethical dimensions of AI in education, particularly how institutions can create robust frameworks to ensure that students use these tools responsibly.

In conclusion, while ChatGPT has the potential to support educational processes, its proper integration requires careful consideration of both the benefits and risks. Educators, policymakers, and researchers must collaborate to establish ethical guidelines, ensure that AI serves as a supplement rather than a substitute for critical thinking, and develop strategies that empower students to use these tools to enhance, not hinder, their intellectual growth. Future research will play a pivotal rolein shaping these policies and in understanding how to harness AI's potential to foster meaningful, long-term learning outcomes in higher education.

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