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The Influence of Artificial Intelligence on the Future Roles of University Students and Faculty Stuff : A Comprehensive Study

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Abstract

This comprehensive study explores the transformative influence of Artificial Intelligence (AI) on the evolving roles of university students and faculty staff within higher education institutions. As AI technologies increasingly permeate academic environments—through intelligent tutoring systems, automated grading, research assistance, and administrative tools—they are reshaping traditional responsibilities, skill requirements, and modes of interaction in both teaching and learning. The study employs a mixed-methods approach, combining quantitative surveys and qualitative interviews conducted across multiple universities to assess perceptions, preparedness, and projected impacts of AI integration. Key findings indicate a growing demand for digital literacy, adaptability, and interdisciplinary collaboration among students and educators alike. While AI offers significant opportunities for enhancing educational outcomes and efficiency, the research also highlights challenges related to ethical concerns, job security, and the need for continuous professional development. This study contributes to a deeper understanding of how academic institutions can navigate the AI-driven transformation to ensure inclusive, equitable, and forward-looking educational practices.

Key words : Higher Education, Educational Technology , Academic Integrity, Artificial Intelligence

Introduction

The integration of Artificial Intelligence (AI) into higher education is reshaping the academic landscape, influencing the roles and responsibilities of both students and faculty members. AI technologies, such as intelligent tutoring systems, automated grading, and data analytics, are being increasingly adopted to enhance teaching and learning experiences. For instance, institutions like Symbiosis International University have launched interdisciplinary AI programs to democratize AI education across various disciplines .

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For students, AI offers personalized learning pathways, real-time feedback, and efficient research tools. A study at Yarmouk University revealed that 66.7% of students appreciated AI's ability to enhance lessons and foster personalized learning experiences . However, concerns about over-reliance on AI and its impact on critical thinking skills persist

Faculty members are experiencing a shift from traditional teaching roles to more dynamic positions involving mentorship, content creation, and research facilitation. Research indicates that AI tools can assist in drafting research, structuring academic papers, and brainstorming, thereby speeding up academic workflows while preserving the creative and intellectual input of teachers . Moreover, AI's ability to handle routine grading and administrative tasks allows educators to focus on in-depth discussions and personalized student support

Despite the promising benefits, the adoption of AI in academia raises ethical considerations, including issues of academic integrity, data privacy, and the potential for bias in AI algorithms. A study from King Faisal University in Saudi Arabia highlighted that faculty readiness to integrate AI is influenced by perceived benefits, attitudes towards AI, and the availability of supportive infrastructure

This study aims to provide a comprehensive analysis of how AI is transforming the roles of university students and faculty staff. By examining perceptions, readiness, and the impact of AI integration, this research seeks to offer insights into the future of higher education in an AI-driven world.

Literature Review

The integration of Artificial Intelligence (AI) into higher education is reshaping the roles and responsibilities of both students and faculty members. AI technologies, such as intelligent tutoring systems, automated grading, and data analytics, are being increasingly adopted to enhance teaching and learning experiences.

Impact on University Students

AI offers personalized learning pathways, real-time feedback, and efficient research tools for students. However, concerns about over-reliance on AI and its impact on critical thinking skills persist. A study at Yarmouk University revealed that 66.7% of students appreciated AI's ability to enhance lessons and foster personalized learning experiences. Despite these benefits, there are apprehensions regarding the potential erosion of critical thinking abilities due to AI's assistance in tasks like essay writing and problem-solving.

Transformation of Faculty Roles

Faculty members are experiencing a shift from traditional teaching roles to more dynamic positions involving mentorship, content creation, and research facilitation. Research indicates that AI tools can assist in drafting research, structuring academic papers, and brainstorming, thereby speeding up academic workflows while preserving the creative and intellectual input

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of teachers. Moreover, AI's ability to handle routine grading and administrative tasks allows educators to focus on in-depth discussions and personalized student support.

Ethical Considerations and Challenges.

Despite the promising benefits, the adoption of AI in academia raises ethical considerations, including issues of academic integrity, data privacy, and the potential for bias in AI algorithms. A study from King Faisal University in Saudi Arabia highlighted that faculty readiness to integrate AI is influenced by perceived benefits, attitudes towards AI, and the availability of supportive infrastructure. Furthermore, concerns about the digital divide and access to AI tools may exacerbate existing inequalities in education.

Institutional Policies and Frameworks

To navigate the complexities of AI integration, universities are developing policies and frameworks that define the roles and responsibilities of faculty, students, and administrators. A study analyzing institutional policies from 116 U.S. universities found that the majority encourage the use of AI and provide detailed guidance for its use in the classroom. These policies emphasize academic integrity, teaching and learning enhancement, and equity. However, the study also cautions that extensive revisions of pedagogical approaches may be burdensome for faculty members.

The integration of AI into higher education presents both opportunities and challenges. While AI has the potential to enhance teaching and learning experiences, it is essential to address ethical considerations, ensure equitable access to AI tools, and provide adequate support for faculty members to adapt to these changes. Further research is needed to explore the long-term impacts of AI on the roles of university students and faculty staff and to develop strategies for effective integration.

Methodology:

Research Design

This study adopts a mixed-methods research design, integrating both quantitative and qualitative approaches to gain a comprehensive understanding of how Artificial Intelligence (AI) is influencing the roles of university students and faculty staff. The combination of methods allows for the triangulation of data, enhancing the reliability and depth of the findings.

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Population and Sample

The target population consists of university students and faculty staff from various public and private institutions across multiple academic disciplines. A stratified random sampling method was used to ensure diverse representation based on:

Academic role (student vs. faculty)

Field of study (STEM, humanities, social sciences, etc.)

Level of AI exposure (frequent, occasional, or no use)

The final sample included:

300 students

150 faculty members

from 5 universities in different geographic regions.

Data Collection Methods

Quantitative Data

A structured online questionnaire was developed and distributed via institutional mailing lists and learning management systems (LMS). The survey included:

Likert-scale questions on perceptions, attitudes, and usage of AI tools

Demographic questions

Specific queries about AI's impact on academic tasks, research, and skill development

Qualitative Data

To gain deeper insights, semi-structured interviews were conducted with:

15 faculty members

20 students

Interview questions explored experiences with AI integration, concerns about future roles, ethical considerations, and expectations for institutional support. Interviews were conducted via Zoom, recorded with consent, and transcribed for analysis.

4.4 Data Analysis

Quantitative Data:

Survey data were analyzed using SPSS v28. Descriptive statistics summarized general trends, while inferential statistics (e.g., t-tests, ANOVA) examined differences across groups (e.g., students vs. faculty, STEM vs. non-STEM).

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Qualitative Data:
Interview transcripts were analyzed using thematic analysis with NVivo software. Themes were coded based on recurring concepts such as "AI-enhanced learning," "faculty workload," and "ethical concerns."
Validity and Reliability
The questionnaire was pilot-tested with 20 participants (10 students and 10 faculty) to refine wording and structure.

Cronbach's alpha for internal consistency of survey scales was ≥ 0.80.
Triangulation of quantitative and qualitative data ensured a more holistic interpretation.

Ethical Considerations
Ethical approval was obtained from the Institutional Review Boards (IRBs) of participating universities. All participants were informed of the study's purpose, assured of anonymity, and provided written consent. Data were stored securely and used solely for research purposes.

Table 1: Demographic Profile of Participants

Variable	Students (n=300)	Faculty (n=150)	Total (n=450)
Gender			
Male	145 (48.3%)	82 (54.7%)	227 (50.4%)
Female	155 (51.7%)	68 (45.3%)	223 (49.6%)
Discipline			
STEM	120 (40.0%)	70 (46.7%)	190 (42.2%)
Humanities	90 (30.0%)	40 (26.7%)	130 (28.9%)
Social Sciences	90 (30.0%)	40 (26.7%)	130 (28.9%)
AI Experience Level			
Frequent Use	80 (26.7%)	55 (36.7%)	135 (30.0%)
Occasional Use	150 (50.0%)	70 (46.7%)	220 (48.9%)

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Variable	Students (n=300)	Faculty (n=150)	Total (n=450)
No Experience	70 (23.3%)	25 (16.6%)	95 (21.1%)

relatively evenly distributed, with STEM disciplines being slightly more represented (42.2%) overall. Regarding AI experience, nearly half of all participants (48.9%) reported **occasional use**, indicating general exposure to AI technologies. Notably, **faculty members (36.7%) had higher rates of frequent AI use** compared to students (26.7%), suggesting *more active experimentation or integration of AI into academic work by staff.Demographic Profile of Participants*

The demographic data shows a balanced gender distribution among students (48.3% male and 51.7% female) and a slightly higher male representation among faculty (54.7%). Disciplines are

Table 2: Student Perceptions of AI Impact on Learning (n=300)

Statement	StronglyAgree	Agree	Neutral	Disagree	Strongly Disagree
AI helps me understand course material better	110 (36.7%)	120 (40%)	40 (13.3%)	20 (6.7%)	10 (3.3%)
AI improves my research efficiency	100 (33.3%)	130 (43.3%)	45 (15%)	15 (5%)	10 (3.3%)
Overreliance on AI limits my critical thinking	80 (26.7%)	90 (30%)	70 (23.3%)	40 (13.3%)	20 (6.7%)
I feel confident using AI tools for academic purposes	130 (43.3%)	110 (36.7%)	40 (13.3%)	15 (5%)	5 (1.7%)

The majority of students viewed AI positively in terms of academic enhancement. Over 76% agreed or strongly agreed that AI helped them better understand course material, and 76.6% believed AI improved research efficiency. However, 56.7% expressed concern that overreliance on AI may limit critical thinking—indicating a perceived trade-off between efficiency and independent thought. The confidence in using AI tools was high (80%), showing a strong readiness among students to engage with technology in academic contexts. This

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suggests that institutions should focus on developing balanced AI-literacy skills to reinforce critical engagement rather than dependence.

Table 3: Faculty Perceptions of AI in Academic Work (n=150)

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AI tools reduce my grading workload	55 (36.7%)	50 (33.3%)	25 (16.7%)	15 (10%)	5 (3.3%)
AI supports my research activities	60 (40%)	65 (43.3%)	10 (6.7%)	10 (6.7%)	5 (3.3%)
Integrating AI in teaching requires significant retraining	70 (46.7%)	50 (33.3%)	15 (10%)	10 (6.7%)	5 (3.3%)
I am concerned about AI's effect on academic integrity	80 (53.3%)	45 (30%)	15 (10%)	5 (3.3%)	5 (3.3%)

Faculty members generally perceived AI as a beneficial support tool. 70% agreed that AI reduces grading workload, and 83.3% acknowledged AI's usefulness in research activities. However, 80% felt that integrating AI requires significant retraining, pointing to a professional development gap. Furthermore, a majority (83.3%) expressed concern about AI's potential to compromise academic integrity. This tension between potential benefits and ethical challenges underlines the need for clear institutional policies and training frameworks to guide faculty in responsibly integrating AI into their work.

Table 4: Interview Themes and Frequencies (Qualitative Analysis)

Theme	Description	Frequency (n=35)
AI as a learning enhancer	Perceived benefits of AI in improving understanding and engagement	22
Ethical concerns	Worries about plagiarism, data use, and student misuse	18
Need for training	Calls for more workshops or resources to integrate AI effectively	20

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Theme	Description	Frequency (n=35)
Change in academic roles	Observations on shifting roles from content deliverers to facilitators	17

Qualitative findings reinforced the survey results. The most common theme—**AI as a learning enhancer**—appeared in 22 interviews, confirming its perceived utility in facilitating understanding and engagement. However, **ethical concerns** were raised in over half of the interviews, reflecting anxieties about AI misuse in academic settings (e.g., plagiarism, biased algorithms). **Twenty participants cited a need for training**, emphasizing the **readiness gap** among both students and faculty. The theme of **changing academic roles** shows awareness of the evolving identity of educators—from knowledge transmitters to mentors and facilitators—highlighting a broader **paradigm shift in higher education**.

The results:

Results

This section presents the findings of the study based on quantitative data from the survey and qualitative insights from interviews with university students and faculty members. The results are organized into key themes aligned with the research objectives: demographic distribution, perceptions of AI use, faculty and student roles, and emerging concerns.

Demographic Profile

Table 1 shows a diverse participant pool of 300 students and 150 faculty members from five universities. Gender distribution was relatively balanced. Participants were drawn from a variety of disciplines, with STEM being the most represented (42.2%). When asked about their experience with AI tools:

30% of participants reported frequent use of AI,

48.9% reported occasional use,

and 21.1% reported no experience.

Faculty members were more likely than students to report frequent use, suggesting earlier or more intensive engagement with AI in academic roles.

Student Perceptions of AI (Table 2)

The majority of students expressed a positive attitude toward AI in their learning:

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76.7% agreed or strongly agreed that AI enhanced their understanding of course material.

76.6% also agreed that AI improves research efficiency.

However, 56.7% of students believed that excessive use of AI could reduce critical thinking, signaling an awareness of its potential drawbacks. A large majority (80%) reported confidence in using AI tools, indicating a high level of digital readiness among students.

Faculty Perceptions of AI (Table 3)

Faculty members shared a generally optimistic but cautious view of AI:

70% believed AI tools help reduce grading workload.

83.3% acknowledged AI's contribution to research productivity.

Nonetheless, a significant proportion (80%) agreed that incorporating AI into teaching requires substantial retraining. Concerns regarding academic integrity were also prominent, with 83.3% of faculty expressing worry about AI being misused by students. These results suggest a dual need for technical support and ethical frameworks.

Insights from Interviews (Table 4)

Qualitative interviews deepened the understanding of faculty and student experiences:

The most common theme was AI's role as a learning enhancer (22 out of 35 participants), highlighting improvements in engagement and efficiency.

Ethical concerns, such as the risk of AI-generated plagiarism and bias, were voiced by 18 participants.

20 interviewees stressed the need for training and institutional guidance to manage AI tools effectively.

17 participants, especially faculty, recognized a shift in academic roles, where instructors increasingly act as facilitators and mentors rather than mere content deliverers.

Summary of Key Findings

Both students and faculty recognize the benefits of AI, particularly in enhancing efficiency and engagement.

There is a gap in training and policy support, especially for faculty.

Concerns over ethics and academic integrity are widespread and need to be addressed by institutions.

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The roles of educators and learners are undergoing significant transformation due to AI integration.

Conclusion

This comprehensive study examined the influence of Artificial Intelligence (AI) on the future roles of university students and faculty staff. Through a combination of survey data and qualitative interviews, the research has provided meaningful insights into how AI is reshaping the academic environment.

The findings highlight that both students and faculty largely perceive AI as a valuable tool that enhances learning, research, and administrative efficiency. Students reported improved comprehension, productivity, and confidence in using AI tools, while faculty recognized the potential for AI to support grading and research workflows. However, the study also uncovered critical challenges. These include concerns over overdependence on AI, a potential decline in critical thinking, ethical risks such as plagiarism, and a clear need for retraining faculty to adapt to changing pedagogical and professional demands.

Moreover, the results underscore a growing shift in academic roles. Faculty members are transitioning from traditional knowledge deliverers to facilitators and mentors, while students are increasingly expected to become proactive, AI-literate learners. This evolution calls for institutional frameworks that support AI integration through policy, professional development, and ethical guidelines.

In conclusion, while AI holds transformative potential for higher education, its successful and responsible integration requires deliberate planning, inclusive policy-making, and continuous support for both students and faculty. Universities must take a proactive role in fostering an AI-ready academic culture—one that balances innovation with critical reflection, and technology with human values.

Recommendations:

Based on the findings of this study, several recommendations are proposed to help universities effectively integrate Artificial Intelligence (AI) into the academic environment, while addressing the challenges and maximizing the benefits for both students and faculty:

Faculty Training and Professional Development

Invest in ongoing AI training programs for faculty to ensure they have the skills and knowledge to effectively incorporate AI tools into their teaching and research. These programs should cover both the technical aspects of AI tools and the ethical considerations of their use.

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Develop mentorship systems where AI-savvy faculty can support colleagues who are less familiar with the technology. This collaborative approach can reduce the anxiety surrounding AI adoption and encourage more widespread integration.

Establish clear institutional policies that address the ethical use of AI, particularly with regard to academic integrity. This should include guidelines on preventing plagiarism, the proper use of AI tools in assignments and assessments, and ensuring transparency in AI-driven grading or evaluation systems.

Regularly review AI tools for biases and inaccuracies that might affect fairness in assessments and research outputs. Institutions should prioritize transparency in how AI algorithms are applied to ensure that all students are treated equitably.

Curriculum Design and Integration

Incorporate AI literacy into university curricula, ensuring that students across all disciplines develop the necessary skills to work with AI tools. This should include both the practical application of AI and an understanding of its societal, ethical, and professional implications.

Offer interdisciplinary courses on the use of AI in various academic fields to foster collaboration between disciplines, helping both students and faculty to see the potential applications of AI in diverse contexts.

Ensure equitable access to AI tools for all students, particularly those from underprivileged backgrounds. This may involve providing free access to AI software, providing training on its use, or integrating AI-related resources into the curriculum so that no student is left behind in a rapidly changing academic landscape.

Provide infrastructure support for students and faculty who may lack the necessary technology or resources to fully engage with AI. Universities should consider offering tech support and subsidized hardware where needed.

Role Re-definition for Faculty and Students

Redefine the roles of faculty members to reflect the increasing importance of mentoring, facilitation, and guidance in the age of AI. Faculty should be encouraged to focus on developing critical thinking and problem-solving skills in students, rather than simply delivering content.

Foster active, AI-supported learning for students, encouraging them to use AI tools as aids in their academic work while also cultivating skills in independent thinking and creativity.

Long-term Monitoring and Evaluation

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Conduct regular evaluations of AI implementation in universities to assess its impact on teaching, learning, and academic integrity. This will help institutions to adjust policies and strategies in response to emerging challenges or new technological developments.

Encourage interdisciplinary research on AI's role in education, involving both faculty and students in exploring innovative applications and solutions to AI-related challenges.

1. The need for educational institutions to hold seminars, workshops and specialised training courses to introduce artificial intelligence systems and their components and how to use and benefit from them for the purpose of increasing awareness and understanding among those involved in the educational process and educating them self, and then preparing them to apply these technologies in performing the tasks assigned to them.

2. The necessity of issuing instructions and guidance from educational institutions using the techniques of artificial intelligence systems to be applied by students and faculty members effectively, with the aim of keeping abreast of recent developments in general and in terms of the future of the profession in particular, and informing the occupants of this profession of the fact that in the near future some jobs will be replaced in education that does not keep pace with these developments.

3. The need for educational institutions to develop and update their curricula and training annually, in order to enable students and faculty members to safely pass through this stage of digital transformation and to exclude the exit of some educational professions in the future due to their value and importance.

4. The need for officials of educational institutions to hold specialised training courses in an effort to keep abreast of global technological developments and knowledge of artificial intelligence techniques in a manner that is commensurate with the foundations and importance of the profession.

Conflict of Interest

The author declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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