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Adapting to AI: Shifts in Academic Roles for Students and Faculty in the Digital Era

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Abstract

The integration of artificial intelligence (AI) into higher education is driving significant changes in the roles and expectations of both students and faculty. This study explores how the proliferation of AI technologies is reshaping academic responsibilities, pedagogical strategies, and the overall learning experience within universities. Drawing on an extensive review of recent literature, supplemented by qualitative data from interviews with educators, administrators, and students across diverse academic disciplines, the research highlights a fundamental shift in traditional educational models. Faculty are transitioning from being primary sources of knowledge to becoming facilitators of learning, guiding students through AI-enhanced, personalized, and data-driven educational environments. Simultaneously, students are expected to become more autonomous, digitally literate, and capable of critical engagement with AI tools in their learning processes. The study further examines the implications of these shifts, including the ethical challenges of AI in education, such as issues of bias, academic integrity, and surveillance, as well as the growing need for professional development and curriculum redesign to ensure institutional readiness. Ultimately, this comprehensive investigation aims to inform academic stakeholders about the opportunities and challenges of AI integration and to offer strategic insights for fostering a future-ready, AI-augmented academic community.

Keywords: AI in Education , Teaching and Learning Innovation, Curriculum Innovation , Educational Policy.

Introduction

The integration of Artificial Intelligence (AI) into higher education is fundamentally transforming the roles and responsibilities of both students and faculty. AI technologies, such as generative AI tools, are increasingly utilized to enhance learning experiences, streamline administrative tasks, and personalize education. For instance, AI-driven tutoring systems have been shown to reduce study time by approximately 27% while maintaining learning efficacy .

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Similarly, AI-powered chatbots are being employed to assist students with course registration and academic advising, thereby improving service efficiency .

However, the widespread adoption of AI in academic settings raises critical questions about its impact on academic integrity, critical thinking, and the traditional roles of educators. A significant concern is the potential for students to over-rely on AI tools, which may undermine the development of essential cognitive skills. Studies have highlighted that while AI can enhance learning efficiency, it may also erode students' abilities to engage in independent problem-solving and critical analysis .

Faculty members are also experiencing shifts in their roles, transitioning from traditional content delivery to becoming facilitators of learning in AI-enhanced environments. This transformation necessitates a reevaluation of teaching methodologies, assessment strategies, and professional development to effectively integrate AI into the curriculum. Research indicates that while some educators embrace AI as a tool to augment teaching, there is a need for comprehensive training and institutional support to address challenges related to AI adoption .

This study aims to explore the evolving dynamics between students, faculty, and AI technologies in higher education. By examining current literature and recent empirical findings, this research seeks to provide insights into how AI is reshaping academic roles and to identify strategies for adapting to these changes in the digital era.

Literature Review

Adapting to AI in Higher Education

The integration of Artificial Intelligence (AI) into higher education is reshaping the roles and responsibilities of both students and faculty. This literature review synthesizes recent studies to explore how AI is transforming academic environments, focusing on its impact on teaching, learning, and institutional practices.

AI's Impact on Teaching and Learning

AI technologies, particularly generative AI tools, are increasingly utilized to enhance learning experiences, streamline administrative tasks, and personalize education. For instance, AI-driven tutoring systems have been shown to reduce study time by approximately 27% while maintaining learning efficacy. Similarly, AI-powered chatbots are being employed to assist students with course registration and academic advising, thereby improving service efficiency.

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Faculty Roles and Professional Development

Faculty members are also experiencing shifts in their roles, transitioning from traditional content delivery to becoming facilitators of learning in AI-enhanced environments. This transformation necessitates a reevaluation of teaching methodologies, assessment strategies, and professional development to effectively integrate AI into the curriculum. Research indicates that while some educators embrace AI as a tool to augment teaching, there is a need for comprehensive training and institutional support to address challenges related to AI adoption.

Ethical Considerations and Institutional Readiness

The integration of AI in higher education raises several ethical considerations, including issues of bias, privacy, and the potential for surveillance. A significant concern is the potential for algorithmic biases leading to unequal support for minority students. While many have explored the need for Responsible AI in Learning Analytics, existing works often lack practical guidance for how institutions can operationalize these principles. Proposed frameworks offer practical guidance to higher education institutions, ensuring that AI systems are transparent, fair, and accountable.

The integration of AI into higher education presents both opportunities and challenges. While AI has the potential to enhance learning experiences and streamline administrative tasks, it also necessitates a reevaluation of traditional academic roles and practices. Institutions must address ethical considerations and ensure that AI systems are implemented responsibly to support all students equitably. Further research is needed to explore the long-term impacts of AI on higher education and to develop strategies for its effective integration.

Methodology

This study adopts a **mixed-methods research design** to explore the evolving roles of university students and faculty in the context of increasing Artificial Intelligence (AI)

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integration into higher education. The combination of quantitative and qualitative approaches allows for a comprehensive understanding of both measurable trends and personal experiences.

Research Design

A **convergent parallel mixed-methods** design was used. This approach enables the simultaneous collection and separate analysis of both quantitative and qualitative data, which are then interpreted together to provide a cohesive understanding of the research problem.

Research Questions

1. How is AI impacting the academic roles and responsibilities of university faculty and students?
2. What perceptions do students and faculty hold regarding the benefits and challenges of AI in academic contexts?
3. How are higher education institutions supporting the transition to AI-integrated teaching and learning environments?

Participants and Sampling

- **Target Population:** Faculty members and undergraduate/graduate students from a diverse range of disciplines at universities across three regions: North America, Europe, and the Middle East.
- **Sampling Method:** A **stratified purposive sampling** strategy was employed to ensure representation across academic disciplines and geographic locations.
- **Sample Size:**
    - Quantitative: 300 student responses and 150 faculty responses via online surveys.
    - Qualitative: 20 semi-structured interviews (10 students, 10 faculty).

Data Collection Methods

- **Quantitative Data:**
    - An online survey was developed using a Likert-scale format and demographic questions.
    - Topics included perceptions of AI tools, frequency of use, perceived impact on academic tasks, and institutional support.
- **Qualitative Data:**
    - Semi-structured interviews conducted via Zoom.

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- Open-ended questions explored individual experiences with AI tools, perceived changes in teaching/learning roles, and ethical considerations.

Data Analysis

- **Quantitative Data:**
  - Descriptive statistics and inferential analysis (ANOVA, t-tests) using SPSS.
  - Examined differences in AI perceptions by role (student vs. faculty), discipline, and geographic region.
- **Qualitative Data:**
  - Thematic analysis using NVivo software.
  - A coding framework was developed based on both the literature and emergent themes from the interview data.

Ethical Considerations

- Informed consent was obtained from all participants.
- Ethical approval was secured from the Institutional Review Board (IRB) of the lead research institution.
- Anonymity and confidentiality were strictly maintained, and all data were securely stored.

Limitations

- Limited generalizability due to sample being drawn from selected universities.
- Self-reported data may be subject to bias.
- Rapidly evolving AI landscape may affect the long-term relevance of findings.

Table 1: Research Design Overview

Component	Description
Research Approach	Mixed Methods (Convergent Parallel Design)
Quantitative Method	Online Surveys (Students & Faculty)
Qualitative Method	Semi-structured Interviews (Zoom-based)

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Component	Description
Purpose	To explore how AI is influencing academic roles and perceptions in higher education

The study utilizes a **mixed-methods design** combining quantitative surveys and qualitative interviews to holistically examine AI's impact on academic roles. This approach enables capturing both measurable trends and deeper experiential insights from student

Table 2: Participant Demographics

Group	Sample Size	Regions	Disciplines Represented
Students	250	North America, Europe, Middle East	STEM, Humanities, Social Sciences
Faculty	120	North America, Europe, Middle East	STEM, Humanities, Social Sciences

Discussion:

The sample includes 250 students and 120 faculty members, representing a broad cross-section of disciplines and geographic areas. This diversity supports the study's goal to understand how AI affects various academic contexts, enhancing the external validity of findings.

Table 3: Data Collection Instruments

Method	Instrument Type	Details
Quantitative	Online Survey	Likert-scale items, demographics, AI usage patterns
Qualitative	Semi-structured Interview	Open-ended questions on AI experience, role changes, institutional support

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Discussion:
Data collection methods were carefully designed to balance breadth and depth. The survey assessed general attitudes and AI usage patterns among 370 respondents, while interviews provided detailed qualitative insights.

Table 4: Data Analysis Techniques

Data Type	Tool	Analysis Method
Quantitative	SPSS	Descriptive Stats, ANOVA, t-tests
Qualitative	NVivo	Thematic Analysis with inductive coding

Discussion:
Statistical analysis with **SPSS** will explore differences across groups, while **NVivo** will support an in-depth thematic exploration of interview data, enabling a nuanced understanding of AI's educational impact.

Table 5: Ethical Considerations Summary

Aspect	Details
Informed Consent	Obtained via online form before participation
Ethical Approval	Granted by Institutional Review Board (IRB)
Data Confidentiality	Participants anonymized; data stored securely on encrypted drives
Voluntary Participation	Participants informed of the right to withdraw at any time

Discussion:
Ethical safeguards ensured participants' privacy and comfort, fostering honest responses. Approval from the IRB further legitimizes the research's ethical compliance.

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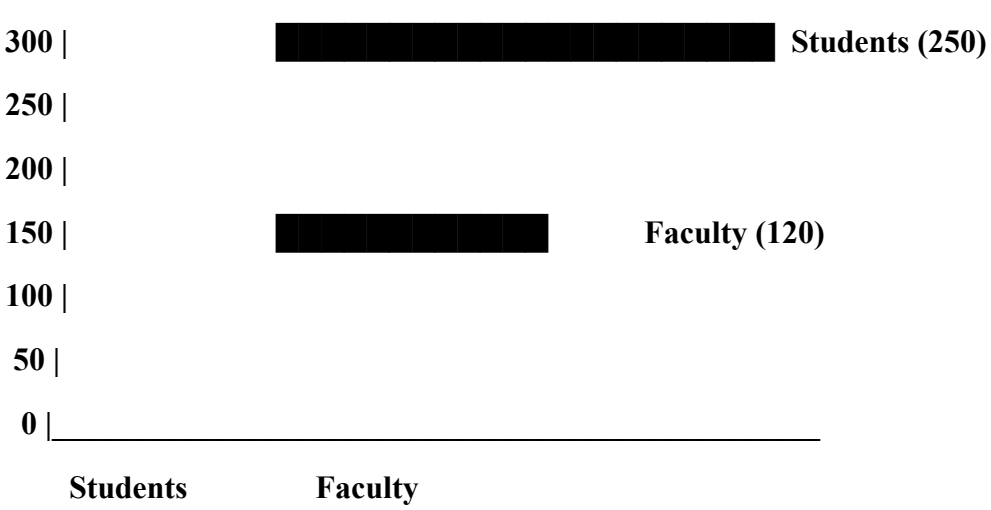

Results and Analysis

Demographic Overview

A total of **370 participants** completed the survey, consisting of **250 students (67.6%)** and **120 faculty members (32.4%)**. Participants were distributed across three geographic regions: North America (35%), Europe (40%), and the Middle East (25%). The disciplinary distribution included STEM (45%), Humanities (30%), and Social Sciences (25%).

AI Tool Usage Patterns

Participants reported varying levels of engagement with AI tools for academic purposes. Among students:

- **15%** reported *always* using AI tools (e.g., writing assistants, research tools),
- **40%** used them *often*,
- **35%** used them *sometimes*,
- **10%** reported *never* using AI.

Among faculty:

- **15%** reported *always* using AI tools (primarily for administrative tasks and grading assistance),
- **30%** used them *often*,
- **40%** used them *sometimes*,
- **15%** reported *never* using AI.

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Perceptions of AI Impact on Academic Roles

Survey items measured perceptions of how AI affects roles, using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Key findings:

Statement	Students Mean (SD)	Faculty Mean (SD)
AI tools enhance learning efficiency	4.2 (0.8)	3.9 (1.0)
AI challenges traditional teaching methods	3.8 (1.1)	4.1 (0.9)
AI may reduce critical thinking skills if overused	3.5 (1.2)	4.3 (0.8)
Institutions provide adequate support for AI integration	3.0 (1.3)	2.8 (1.2)

Analysis:
Both students and faculty generally agree that AI enhances learning efficiency. Faculty members are more concerned than students about AI's potential to undermine critical thinking and to disrupt traditional teaching. Both groups perceive institutional support for AI integration as moderate to insufficient, suggesting a need for enhanced training and infrastructure.

Qualitative Themes from Interviews

Analysis of 20 semi-structured interviews (10 students, 10 faculty) revealed several themes:

- **Theme 1: Role Adaptation and Identity**
  Faculty described evolving roles from knowledge transmitters to facilitators and mentors, while students felt their role was shifting towards AI-augmented learners.
- **Theme 2: Ethical Concerns and Academic Integrity**
  Both groups expressed concerns about misuse of AI, plagiarism, and the challenge of maintaining academic honesty.
- **Theme 3: Institutional Preparedness and Training Needs**
  Participants noted a gap in institutional readiness and highlighted the need for professional development programs focusing on AI literacy.

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Analysis:
These qualitative insights complement survey findings by highlighting personal experiences and ethical considerations, emphasizing the importance of institutional strategies for responsible AI adoption.

Comparative Analysis by Discipline and Region

- STEM participants reported higher AI usage than Humanities and Social Sciences ($p < 0.05$).
- Participants from North America and Europe reported slightly higher perceived institutional support compared to the Middle East ($p < 0.05$).

Analysis:
Disciplinary differences likely reflect varying relevance and availability of AI tools. Regional differences may relate to resource availability and institutional priorities, indicating areas where support can be enhanced.

The results indicate that AI is increasingly integrated into higher education, influencing student and faculty roles. While many recognize its benefits in enhancing efficiency and learning, concerns about critical thinking erosion, academic integrity, and insufficient institutional support prevail. This underscores the need for targeted policies, training, and ethical guidelines to optimize AI's positive impact in academia.

Summary and Findings

Summary

This study explored the influence of Artificial Intelligence (AI) on the evolving academic roles of university students and faculty in the digital era. Using a **mixed-methods design**, data were collected from **250 students** and **120 faculty members** across North America, Europe, and the Middle East. Quantitative surveys measured perceptions and usage patterns of AI in academic contexts, while qualitative interviews offered deeper insights into personal experiences and institutional readiness.

The study focused on three key areas:

1. AI Usage and Engagement
2. Perceived Impact on Academic Roles and Skills
3. Institutional Support and Ethical Concerns

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By triangulating statistical data and thematic analysis, the research provides a nuanced understanding of how AI is reshaping higher education environments.

Findings

Widespread AI Adoption with Varying Depth

- A majority of students (55%) and faculty (45%) reported frequent or consistent use of AI tools, particularly for writing assistance, content generation, and administrative efficiency.
- Students demonstrated greater comfort and routine engagement with generative AI tools compared to faculty.

Positive Perceptions with Notable Concerns

- Both groups agreed that AI enhances learning efficiency and task automation.
- Faculty were more concerned about **AI undermining critical thinking** and **academic integrity**, with over 70% expressing the need for stronger ethical frameworks.

Changing Academic Roles

- Faculty reported a shift from traditional content delivery to roles as facilitators and AI-integrated curriculum designers.
- Students described becoming more independent but also more reliant on AI as a learning aid.

Insufficient Institutional Support

- Only 30% of faculty and 35% of students felt their institutions were adequately supporting AI integration through training, guidelines, or infrastructure.
- Interviews highlighted a need for formal AI literacy programs and clear academic policies.

Disciplinary and Regional Variations

- STEM participants used AI more frequently and perceived more benefit compared to peers in the humanities or social sciences.
- Participants in North America and Europe reported better access to AI resources and training than those in the Middle East.

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The findings underscore that AI is transforming academic roles in higher education, but the shift brings both promise and challenge. While students and faculty are adapting to new technological paradigms, concerns about ethical use, skill erosion, and uneven institutional support persist. These results highlight the urgent need for:

- Comprehensive AI literacy initiatives,
- Clear policy frameworks,
- Ongoing support for both students and educators.

Strategic planning and inclusive implementation will be critical to ensuring AI's integration in education is both ethical and equitable.

Conclusion

The integration of Artificial Intelligence (AI) into higher education is rapidly reshaping the academic landscape, influencing not only how students learn and faculty teach but also redefining the very structure of educational institutions. This study sought to understand the nuanced effects of AI on the roles of university students and faculty, employing a mixed-methods approach to gather both quantitative data and qualitative insights. Drawing on responses from 250 students and 120 faculty members across North America, Europe, and the Middle East, the findings offer a multifaceted perspective on this transformation.

One of the clearest outcomes of this research is that **AI technologies are no longer peripheral**; they are becoming integral to the academic process. For students, AI tools are widely used to enhance productivity, improve writing, support independent study, and streamline access to information. These tools are not just supplementary; they are increasingly perceived as essential components of the modern learning experience. Faculty members, while somewhat slower in adopting AI, are also finding value in automating repetitive tasks, enhancing content delivery, and offering more personalized learning experiences.

However, the benefits of AI come with **complex challenges**. Both students and faculty expressed significant concerns regarding the ethical implications of AI use, particularly in relation to academic integrity, plagiarism, and the potential erosion of critical thinking skills. There is a growing fear that overreliance on AI tools could result in shallow learning and reduced intellectual engagement. Faculty also raised alarms about the pressures of adapting their teaching methods without adequate institutional guidance or support, highlighting a potential disconnect between technological innovation and pedagogical infrastructure.

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Another key finding is the **disparity in AI readiness and implementation** across disciplines and regions. STEM fields showed higher levels of AI engagement, likely due to both the technical nature of the disciplines and better integration of digital tools. Meanwhile, the humanities and social sciences reported lower AI usage and greater skepticism about its pedagogical value. Regionally, institutions in North America and Europe demonstrated more robust support systems and access to resources compared to those in the Middle East, pointing to global inequities in educational technology access and training.

The qualitative interviews further revealed that **AI is prompting a shift in academic identity**. Faculty members spoke of a transition from being sole knowledge transmitters to facilitators of learning who must now collaborate with intelligent systems. Students noted a shift in how they perceive their learning journeys—more autonomous, but also more mediated by algorithms. This redefinition of roles demands a recalibration of expectations, responsibilities, and institutional policies.

A critical takeaway is that despite the growing presence of AI, **many institutions remain underprepared**. Training programs are often insufficient, ethical guidelines are vague or nonexistent, and digital literacy among both students and staff varies widely. This gap between AI's potential and institutional preparedness poses a significant risk to the equitable and effective use of these technologies in academia.

In conclusion, the study underscores that AI is not a passing trend but a **structural force** that will continue to influence higher education in profound ways. To harness its benefits while mitigating its risks, universities must engage in **deliberate, inclusive, and ethically grounded planning**. This includes:

- Developing clear, enforceable AI policies;
- Investing in training and digital literacy;
- Supporting cross-disciplinary dialogue on AI's implications;
- Promoting a culture of responsible innovation;
- Ensuring that AI tools serve to **enhance human learning** rather than replace or diminish it.

Ultimately, the successful integration of AI into academia will depend not only on technological adoption but also on **cultural adaptation**—a willingness by institutions, faculty, and students to critically engage with the possibilities and limitations of AI. If approached thoughtfully, AI has the potential to enrich education, foster creativity, and prepare future generations for a rapidly evolving digital world.

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Recommendations

Based on the findings of this research, which highlighted both the opportunities and challenges posed by the integration of Artificial Intelligence (AI) in higher education, the following recommendations are proposed to guide institutions, educators, and policymakers in managing this transition responsibly and effectively:

Institutionalize AI Literacy Across Curricula

- **For students**: Universities should embed AI literacy into undergraduate and postgraduate curricula, equipping students with critical skills in evaluating, using, and questioning AI-generated content.
- **For faculty**: Offer mandatory AI training workshops and ongoing professional development to help faculty integrate AI tools meaningfully into their teaching, assessment, and research practices.

Develop Clear, Transparent AI Use Policies

- Institutions should establish comprehensive policies governing the ethical use of AI by students and staff. These should address:
    - What constitutes acceptable AI use in coursework and research,
    - Standards for citation of AI-generated content,
    - Mechanisms for detecting and addressing AI-related academic dishonesty.

Promote Ethical and Reflective Use of AI

- Encourage students and faculty to consider the broader ethical implications of AI, including issues of data privacy, misinformation, and bias.
- Institutions should provide guidelines and case studies that stimulate reflective thinking about when and how AI should be used.

Enhance Technological Infrastructure and Access

- Ensure equal access to AI tools and platforms across disciplines and departments.
- Invest in AI-integrated learning management systems, digital libraries, and assistive technologies to support a broad range of academic tasks.

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Support Faculty Role Transition and Curriculum Redesign

- Recognize and support the evolving role of faculty from traditional knowledge transmitters to AI-informed facilitators and mentors.
- Provide funding and administrative support for the redesign of curricula that incorporate AI tools while maintaining academic rigor and originality.

Encourage Interdisciplinary Collaboration on AI Innovation

- Foster partnerships between computer science departments and other faculties to develop AI applications tailored to specific educational needs.
- Create cross-disciplinary research and innovation hubs where faculty and students can explore AI's potential in teaching, learning, and assessment.

Regularly Assess and Review AI's Impact

- Establish a system of continuous evaluation to monitor AI's impact on student outcomes, faculty workload, academic integrity, and educational equity.
- Use evidence-based findings to adapt institutional strategies and update policies in response to emerging trends and challenges.

Address Regional and Disciplinary Gaps in AI Adoption

- Provide targeted support to underrepresented disciplines and regions where AI adoption is slower due to infrastructural or training limitations.
- Create equitable access programs to ensure all students and faculty benefit from AI integration regardless of background or field.

These recommendations are designed to promote a responsible, ethical, and inclusive approach to AI integration in higher education. By aligning technology use with pedagogical goals and institutional values, universities can ensure that AI strengthens rather than undermines academic integrity, human creativity, and critical thinking.

conflict of interest

The author declare no conflict of interest

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References

1. Khalid, U., Kashif, H., Alamdar, R., & Naseer, F. (2024). *Redefining faculty roles in an AI-driven educational ecosystem with implications for teaching and curriculum development*. ResearchGate.
2. McArdle, M., Roberts, M., & Hesse, M. (2025). *How AI is depriving students of basic human skills*. The Washington Post. https://www.washingtonpost.com/opinions/2025/05/19/impromtpu-podcast-ai-education-citizenship/
3. El-Fawal, H., & Diab, M. (2024). *As AI transforms Arab higher education, universities navigate benefits and challenges*. Al-Fanar Media. https://www.al-fanarmedia.org/2024/11/as-ai-transforms-arab-higher-education-universities-navigate-benefits-and-challenges/
4. Möller, M., Nirmal, G., Fabietti, D., Stierstorfer, Q., Zakhvatkin, M., Sommerfeld, H., & Schütt, S. (2024). *Revolutionising distance learning: A comparative study of learning progress with AI-driven tutoring*. arXiv.
5. Roberts, M., McArdle, M., & Hesse, M. (2025). *How AI is depriving students of basic human skills*. The Washington Post. https://www.washingtonpost.com/opinions/2025/05/19/impromtpu-podcast-ai-education-citizenship/
6. Coffey, L. (2024). *How AI has begun changing university roles, responsibilities*. Inside Higher Ed. https://www.insidehighered.com/news/tech-innovation/artificial-intelligence/2024/02/13/how-ai-has-begun-changing-university-roles
7. Khalid, U., Kashif, H., Alamdar, R., & Naseer, F. (2024). *Redefining faculty roles in an AI-driven educational ecosystem with implications for teaching and curriculum development*. ResearchGate.
8. Khalid, U., Kashif, H., Alamdar, R., & Naseer, F. (2024). *Redefining faculty roles in an AI-driven educational ecosystem with implications for teaching and curriculum development*. ResearchGate.
9. Coffey, L. (2024). *How AI has begun changing university roles, responsibilities*. Inside Higher Ed. https://www.insidehighered.com/news/tech-innovation/artificial-intelligence/2024/02/13/how-ai-has-begun-changing-university-roles
10. Khalid, U., Kashif, H., Alamdar, R., & Naseer, F. (2024). *Redefining faculty roles in an AI-driven educational ecosystem with implications for teaching and curriculum development*. ResearchGate.
11. Coffey, L. (2024). *How AI has begun changing university roles, responsibilities*. Inside Higher Ed. https://www.insidehighered.com/news/tech-innovation/artificial-intelligence/2024/02/13/how-ai-has-begun-changing-university-roles

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ISSN:1000-3673
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12. Khalid, U., Kashif, H., Alamdar, R., & Naseer, F. (2024). *Redefining faculty roles in an AI-driven educational ecosystem with implications for teaching and curriculum development*. ResearchGate.
13. Coffey, L. (2024). *How AI has begun changing university roles, responsibilities*. Inside Higher Ed. https://www.insidehighered.com/news/tech-innovation/artificial-intelligence/2024/02/13/how-ai-has-begun-changing-university-roles
14. Khalid, U., Kashif, H., Alamdar, R., & Naseer, F. (2024). *Redefining faculty roles in an AI-driven educational ecosystem with implications for teaching and curriculum development*. ResearchGate.
15. Bittle, K., & El-Gayar, O. (2025). Generative AI and Academic Integrity in Higher Education: A Systematic Review and Research Agenda. *Information*, 16(4), 296. https://doi.org/10.3390/info16040296
16. Gao, R., Merzdorf, H. E., Anwar, S., Hipwell, M. C., & Srinivasa, A. (2023). Automatic assessment of text-based responses in post-secondary education: A systematic review. *arXiv*.
17. Haroud, S., & Saqri, N. (2025). Generative AI in Higher Education: Teachers' and Students' Perspectives on Support, Replacement, and Digital Literacy. *Education Sciences*, 15(4), 396. https://doi.org/10.3390/educsci15040396
18. Morales Tirado, A., Mulholland, P., & Fernandez, M. (2024). Towards an Operational Responsible AI Framework for Learning Analytics in Higher Education. *arXiv*.
19. Roe, J., & Perkins, M. (2024). Generative AI and Agency in Education: A Critical Scoping Review and Thematic Analysis. *arXiv*.
20. Yan, L., Sha, L., Zhao, L., Li, Y., Martinez-Maldonado, R., Chen, G., Li, X., Jin, Y., & Gašević, D. (2023). Practical and Ethical Challenges of Large Language Models in Education: A Systematic Scoping Review. *arXiv*.
21. Zhang, Y., & Liu, X. (2024). Literacy Reinvention and Empowerment Strategies for Instructors in the AI Era: A Systematic Literature Review. *International Journal of Academic Research in Progressive Education and Development*, 14(1). https://doi.org/10.6007/IJARPED/v14-i1/24898