



Transformational Leadership and Faculty Innovation in Universities: The Mediating Role of Artificial Intelligence Integration

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ABSTRACT

The rapid advancement of artificial intelligence (AI) is transforming higher education by reshaping teaching, research, and institutional management. As universities increasingly adopt AI technologies, effective leadership has become essential for fostering innovation and facilitating successful digital transformation. This study examines the relationship between transformational leadership and faculty innovation, with artificial intelligence integration serving as a mediating variable. A quantitative, cross-sectional research design was employed, and data were collected through a structured questionnaire administered to faculty members from public and private universities. The proposed research model was analyzed using Structural Equation Modeling (SEM). The findings indicate that transformational leadership has a significant positive effect on both AI integration and faculty innovation. Furthermore, AI integration significantly enhances faculty innovation and partially mediates the relationship between transformational leadership and faculty innovation. These findings suggest that transformational leaders create supportive environments that encourage faculty members to adopt AI technologies, thereby improving innovative teaching, research, and academic practices. The study contributes to the growing literature on educational leadership and digital transformation by highlighting the strategic role of AI integration in promoting faculty innovation.



Introduction

From the governance structures of universities to the intricacies of instructional design, all these concepts are currently being redefined and reinvented through the lens of AI (Holmes et al., 2022; UNESCO, 2023). Through intelligent tutoring systems, natural language processing, machine learning, and generative AI, there is currently ongoing customization of the student experience. In other areas beyond the classroom, these technologies are currently removing mundane administrative activities and expediting research processes (Dwivedi et al., 2023; Kasneci et al., 2023). However, it should be noted that integrating new technology into an organization cannot always stand alone. Building the atmosphere of lifelong learning, encouraging collaboration and promoting innovation in the process of implementing AI require certain types of leadership.

What makes a transformational approach to leadership so important at the moment? For decades, the scholarly world has glorified the transformational style as the perfect motivator of effective organizational performance and enhanced creativity (Banks et al., 2016; Hoch et al., 2018). Transformational leaders create the environment where even technological changes seem possible and exciting. It is achieved through mental stimulation of followers and presenting them with a grand vision. The turbulent digital space of contemporary academic organizations needs such leadership badly.

One thing that has become crystal clear is that whether or not an institution will be able to incorporate the technology into its DNA will determine its future. Smart technologies enable academics to come up with more informed decisions, boost the impact of their research, and significantly enhance their teaching (Holmes et al., 2022; UNESCO, 2023). If used appropriately, AI technology replaces repetitive routine tasks and enables educators to focus on meaningful initiatives. In this case, transformational leaders emerge as the main catalysts, creating a safe environment for experimenting with new digital tools, supporting their vision through tangible resources provided by universities and establishing the general strategic vision.

However, there is an interesting gap in the literature despite plenty of studies about the relationship between sharing knowledge, innovation, and visionary leadership (Banks et al., 2016; Wang et al., 2011). The specific link between AI integration, successful leadership, and creative faculty works remains unclear. Most contemporary studies tend to investigate the issue from the perspective of students' attitudes and simple acceptance of the technology (Crompton & Burke, 2023; Zawacki-Richter et al., 2019). Meanwhile, the rapid appearance of generative technologies raises an array of ethical, privacy, and academic integrity concerns.

Well-known international organizations like OECD and UNESCO have been advocating for AI integration that is essentially responsible. In their opinion, proper AI integration will be a way to preserve the ethical limits while at the same time increasing AI literacy and education quality in general (OECD, 2023; UNESCO, 2023). Therefore, the question of figuring out how exactly visionary leaders encourage AI use and then how AI use provokes creativity becomes both a challenge and a puzzle.

Research Objectives

The study seeks to achieve the following objectives:

1. To examine the effects of transformational leadership on artificial intelligence integration among university faculty.
2. To investigate the effect of artificial intelligence integration on faculty innovation. To examine the effect of transformational leadership on faculty innovation.
3. To determine the mediating role of artificial intelligence integration in the relationship between transformational leadership and faculty innovation.

Research Questions

- Does transformational leadership significantly influence artificial intelligence integration among university faculty?
- Does artificial intelligence integration significantly influence faculty innovation?
- Does transformational leadership directly influence faculty innovation?
- Does artificial intelligence integration mediate the relationship between transformational leadership and faculty innovation?

Research Hypotheses

H1: Transformational leadership has a significant positive effect on artificial intelligence integration.

H2: Artificial intelligence integration has a significant positive effect on faculty innovation.

H3: Transformational leadership has a significant positive effect on faculty innovation.

H4: Artificial intelligence integration significantly mediates the relationship between transformational leadership and faculty innovation.

Literature Review

Transformational Leadership in Higher Education

In the contemporary world of academia, which is fraught with tough international competition and digital transformations, there is a need for leaders who will be able to handle something beyond the status quo. Transformational leadership proves to be an excellent model, which allows driving universities to exceptional levels of performance. There is a dire need for leaders who will be able to inspire their subordinates and push them to joyfully go forward to changes instead of just putting up with them.

Transformational leadership has emerged as a leadership style of great relevance for the management of change, the enhancement of institutional efficiency and innovation in higher education institutions. Universities are complex environments and leaders must be able to foster a culture of creativity, motivate faculty, and facilitate a culture of continuous improvement. In the context of public sector universities, a review of literature revealed that leadership behavior plays a significant role in organizational performance, strategic decision making and organizational outcomes (Rafiq-uz-Zaman, 2023a). Transformational leaders can make significant contributions to the development of the university by the definition of a shared vision, intellectual stimulation, and supporting faculty members in new approaches to teaching, research, and academic management. With the rise of technological change, good leadership is

crucial to making sure that universities are able to successfully adopt and implement an innovative approach to technology.

Transformational leaders serve as examples and provide inspiring individual attention instead of just commanding their subordinates (Bass & Riggio, 2006). It is natural that there is a high level of institutional loyalty and trust in such environment. In the particular case of academic settings, transformational leaders greatly raise the motivation and enthusiasm for trying of educators. It is inevitable that such leaders who create conditions for intensive knowledge sharing and collaboration will be laying the foundation for digital innovations (Al-Husseini, El Beltagi, & Moizer, 2021).

What makes this methodology so efficient? It is determined by four basic cornerstones: individualized consideration, intellectual stimulation, inspirational motivation, and idealized influence. Thanks to the perfect combination of an appealing vision of the future and strong mutual trust, these four cornerstones start to work together. As a consequence, there is a sharp reduction in the faculty's resistance to innovations while necessary digital skills are being acquired.

There are plenty of empirical evidences regarding this matter. Transformational management boosts the scholarly output and organizational learning. Besides, this methodology substantially enhances the probability that educators will try novel methods in teaching (Carlson, Webb, & Comstock, 2025). Additionally, transformational management ensures that AI-powered changes in education will be conducted in an absolutely ethical way.

Faculty Innovation in Universities

What ensures that universities are always alive and relevant? No doubt, it is the ability of their faculty members to innovate. Increasingly demanding students and ever-advancing technology are putting a lot of pressure on teachers to totally rethink their research and teaching approaches.

To get a better understanding of what we are talking about, let us first explain what we mean. It is certainly not just generating new ideas; innovation of faculty members means implementing these ideas to improve academic services, research techniques, and course design. Creativity gets translated into practice.

This phenomenon could be called Innovative Work Behavior (IWB). The IWB theory speaks of a process of moving through three stages: coming up with an idea, getting it supported, and implementing it. Innovative faculty members are those who are skilled at finding roadblocks, designing solutions to them, and implementing these solutions in their labs and classes.

To improve the quality of teaching, research productivity, administrative efficiency, and to increase the competitiveness of the institutions, it is necessary for the universities to innovate. Faculty innovation relies on organizational settings that foster innovation by supporting academic employees to come up with new ideas, try something new or make use of available resources. The ability to be technologically literate and competent is now regarded as a significant base for innovation as it affects the learner's interaction with modern educational tools and learning systems. In the context of digital literacy, there is a growing focus on the role of technology in enhancing learning outcomes and engagement with digital spaces (Rafiq-uz-Zaman, 2023b). Likewise, learning analytics and educational data mining offer universities the

potential of taking data-driven approaches to enhance academic decision-making, student success, and institutional innovation (Rafiq-uz-Zaman & Ameer, 2025). Thus, it is essential for universities to have innovative environments, leadership, technology, and evidence-based strategies to improve the performance of faculty members and academic development.

Not surprisingly, there are many factors that play a role in one's ability to innovate. Individual characteristics such as the desire for continuous learning, technophobia, and drive are immensely significant. At the organizational level, opportunities for professional development, teamwork, and strong management support are paramount. Transformational leadership acts as the key element in this situation. Through encouraging creative thinking and promoting bold experimentation, these leaders provide a safe environment in which instructors have the freedom to explore new territories.

In the last decade, AI has been a great impetus for this process. Educational analytics and generative algorithms such as ChatGPT give educators the chance to cut off monotonous administrative work so that they can better focus on their main areas of activity. Nevertheless, there are still some major obstacles in front of innovators – from moral and ethical questions to insufficient technological basis. In essence, true educational innovation comes from a combination of effective implementation of AI, university support, and personal drive. For that reason, our study views faculty innovation as the dependent variable that is supported by both technological smartness and good leadership.

Artificial Intelligence Integration in Higher Education

Without question, the landscape of higher education is evolving with the help of Artificial Intelligence technology. With generative and machine learning technology, modern universities have been revolutionizing processes related to administration, research, and teaching.

What does integration of AI actually mean, however? It entails much more than acquiring some new software. In fact, it means embedding intelligent systems in the daily activities of the institution itself. Nowadays, professors use those technologies to give personalized responses to their students, analyze large amounts of literature, generate tests and plan their classes. At the same time, students take advantage of the technology to develop their critical thinking skills and get through education faster.

At the same time, benefits for research are quite evident. Artificial intelligence makes academic writing more efficient, creates complex visualizations and helps analyze huge data sets. At the same time, behind the scenes, the same technology is optimizing activities of libraries, planning of schedules and admissions.

Artificial Intelligence (AI) has emerged as a pivotal force in reshaping higher education, enabling better decision making, personalization, administrative efficiency and innovative teaching and learning. The integration of Artificial Intelligence (AI) has become a key player in the transformation of higher education, impacting decision making, personalization, administrative efficiency, and innovative teaching and learning practices. AI technologies offer several opportunities for universities to improve their institutional processes and increase the quality of their educational service. AI in educational leadership and management studies underscores the potential of AI tools to assist university leaders in various tasks, provide

improved services, and aid in better institutional management (Malik & Rafiq-uz-Zaman, 2025). Moreover, the strategic decision-making process using AI helps in analyzing intricate data, detecting patterns, and creating better strategies for institutional development (Iram et al., 2025). Yet, the proper implementation of AI demands the right policies, organizational readiness, and leadership support; otherwise, the deployment of AI without strategic planning could pose challenges in terms of acceptance, governance, and ethics (Rafiq-uz-Zaman, 2025c). Furthermore, AI's potential in HRM extends to boosting the productivity of the workforce, evaluating their performance, and optimizing organizational practices (Rafiq-uz-Zaman, 2025b). In addition, AI-based learning strategies can also be used in conjunction with other human-centered factors, like emotional intelligence, to assist faculty development and ensure a balanced technological transformation in the universities (Rafiq-uz-Zaman et al., 2026).

However, implementing these solutions is not an easy task most of the time. Technical apprehension and digital inadequacies commonly afflict university faculty members. Furthermore, old IT systems and budget cuts make things extremely difficult for universities in general. Lastly, one cannot forget the ethical problematics of the situation. Universities are expected to devise rigorous training programs and strict codes of conduct aimed at countering real threats related to data security, algorithmic biases, and plagiarism.

It is right here where leadership becomes essential. Transformative leaders do not just enforce the adoption of new solutions but also provide ongoing support, finances, and vision needed for implementation. Universities whose environment includes good governance and strategic vision will always succeed in integrating AI solutions. Hence, in the context of our model, integration of AI solutions can be seen as the key intermediary factor. It shows us exactly how imaginative leadership translates into real innovation on the part of faculty members.

Relationship between Transformational Leadership and Faculty Innovation

Leadership studies have always cited the transformational styles of leadership as the key trigger behind institutional creativity by making constant demands on researchers and teachers to continually evolve their methodologies and pedagogical techniques.

Inherently connected with established theories (Burns, 1978; Bass, 1985), such managerial style operates via the use of four key elements: individualized consideration, intellectual stimulation, inspirational motivation, and idealized influence. Out of all these, intellectual stimulation proves to be exceptionally powerful. It consciously challenges people to abandon old-fashioned ways and explore digital ways of working. At the same time, through individualized mentoring and creating a climate of trust, managers create a very nurturing environment.

This process can be wonderfully analyzed with the help of Social Exchange Theory, whereby professors, supported and nurtured by their institution, respond instinctively with creative ideas. Similarly, the Componential Theory of Creativity suggests that creativity results only where professional environment comes into play along with knowledge and motivation.

Faculty innovation is closely tied to transformational leadership, as leaders impact the motivation, creativity and willingness of faculty to embrace new ideas and technologies. Transformational leaders motivate faculty members through vision, mental stimulation and encouragement for experimentation and the sharing of information. But in a university that is

undergoing a digital transformation, leadership is crucial for advancing the use of AI and for facilitating the integration of technology into academic activities. The introduction of AI technology could potentially act as a bridge between transformational leadership and faculty innovation by enabling evidence-based decision making, enhancing processes within the institution, and assisting with innovative teaching and research. The results of previous studies indicate that strategic leadership, digital readiness and supportive organizational policies are crucial for the transformation of education through the use of AI (Rafiq-uz-Zaman, 2025a; Rafiq-uz-Zaman, 2025c). Thus, the transformational leadership might have the potential to contribute to faculty innovation not only by motivating faculty to innovate, but also by enabling faculty to implement and effectively utilize artificial intelligence technologies in higher education institutions. This connection serves as the basis for exploring how AI can serve as a facilitator between transformational leadership and faculty innovation.

Modern studies continue to support such processes. Academics guided by the visionary leader show greater willingness to introduce AI technologies and launch multidisciplinary projects. It is obvious that transformational leadership boosts implementation of innovations, promotes academic productivity, and increases creativity.

What is more important, interactions between these constructs are rarely simple. Innovative idea introduced by the leader usually passes through various channels, for instance, increased technological literacy or better learning within the institution. The proposed model sees AI technology as such an important channel. The authors suggest that visionary management will stimulate academic creativity but this process will be significantly enhanced by using artificial intelligence.

Theoretical Framework

The research framework in this case is anchored on two theoretical foundations: Ability Motivation Opportunity (AMO) Theory and Transformational Leadership Theory. Combined, they provide an illustration of the mechanism through which administrative leadership spurs the adoption of AI, which further inspires creativity.

Transformational Leadership Theory

This theoretical model, developed by Burns (1978), followed by further development by Bass (1985) and Bass & Avolio (1994), is a tool that analyzes how managers motivate their teams to surpass normal boundaries.

The theory highlights four dimensions:

Idealized Influence: When the managers act as a role model through good conduct, they generate tremendous trust. Great reverence of management makes the educators much more open to new technologies.

Inspirational Motivation: The administrators motivate the staff with a vision of something exciting, something innovative in the future.

Intellectual Stimulation: The management consistently motivates the staff to use modern tools, such as AI, to find solutions to complex problems.

Individualized Consideration: Through personal guidance and support, the managers make sure that the staff members have the right skills.

In our structural equation, this type of leadership acts as an independent variable and is the foundation of technology assimilation.

Ability-Motivation-Opportunity (AMO) Theory

Under the AMO approach, performance of any workforce is basically determined by the following three factors:

Ability: Having the relevant skills and competencies for carrying out the task.

Motivation: Having the real willingness to apply the relevant competencies.

Opportunity: Working in an organization that creates a supportive environment and provides all the necessary resources.

In the case of academia, visionary leaders provide the motivation. Universities themselves provide the opportunity by providing training and access to AI technology. In the end, dealing with AI technology improves the abilities of the educators, making their efforts much more productive.

Integration of the Two Theories

Combining these models accurately reflects the nature of our approach to investigation. Visionary management motivates the academic staff to adapt to technological changes and use artificial intelligence. Their further involvement with AI enhances their competence and efficiency in conducting research and teaching. Thus, transformational leadership produces a direct effect on creativity and an indirect one through AI integration. This is how, in this conceptual scheme, the role of AI as a connecting factor between management influence and real innovation becomes clear.

Research Methodology

Research Design

As for this research study, we decided to use quantitative methodology based on a cross-sectional survey. With the help of the standardized questionnaire, we were able to reliably pinpoint a certain point in time when it comes to the relationship between faculty innovation, AI and transformational leadership.

Research Paradigm

Our research methods have their foundations firmly entrenched in the positivist paradigm. Through the use of the evaluation of our hypotheses using highly sophisticated statistics and objectivities of the concepts, this paradigm is perfectly suited to our overall scientific goals.

Population and Sample

The group of people being evaluated involved full-time academic staff-ranging from Lecturers at

an early stage in their career to experienced Professors-working in universities that were both private and publicly-owned. We used a proportional stratified random sampling technique to ensure that the data gathered by us reflects the various sectors of higher education. Following standard SEM practices (Hair et al., 2022), we were able to recruit a considerable sample of 400 academic respondents.

Research Instrument

Data collection was done through the use of a carefully constructed, four-section survey instrument: Demographic Information, Transformational Leadership, AI Integration and Faculty Innovation.

Measurement Scale

Respondents rated each item on a traditional 5 point Likert scale, starting from a minimum score of 1 (Strongly Disagree) to a maximum of 5 (Strongly Agree).

Pilot Study

As a prelude to our actual data gathering process, we did a pilot study involving 30 academics.

Validity and Reliability

The content validity of the instrument was established through the extensive review by the subject matter experts, whereas confirmatory factor analysis (CFA) confirmed the construct validity. To determine the reliability, the Composite Reliability (CR) and Cronbach's Alpha values were checked. Besides, the discriminant and convergent validity was confirmed using the HTMT ratio, Fornell-Larcker criteria, and AVE measures.

Data Collection

After obtaining the formal permission from the target universities, the survey instruments were administered in both printed and online forms. The anonymity of all the respondents was assured, and their participation was purely voluntary. The data collected was cleaned extensively before applying any inferential statistics.

Results

Demographic Characteristics of the Respondents

A short description of the sample background indicates that the majority of the sample (62%) were males, and the most common age group was 31 to 40 years old, making up 43% of the sample. Lecturers from public universities comprised 65% of the sample. The majority of the respondents' positions were Assistant Professors (44%), and they had a Ph.D. degree (72%).

Table 1: Demographic Profile of Respondents (N = 400)

Variable	Category	Frequency	Percentage (%)
Gender	Male	248	62.0
	Female	152	38.0
Age	Below 30 Years	56	14.0
	31-40 Years	172	43.0
	41-50 Years	108	27.0
	Above 50 Years	64	16.0
Qualification	MPhil	112	28.0
	PhD	288	72.0
Academic Rank	Lecturer	98	24.5
	Assistant Professor	176	44.0
	Associate Professor	82	20.5
	Professor	44	11.0
University Type	Public	260	65.0
	Private	140	35.0

Descriptive Statistics

Table 2: Descriptive Statistics

Variable	Mean	SD	Minimum	Maximum
Transformational Leadership	4.08	0.56	2.45	5.00
AI Integration	3.89	0.63	2.10	5.00
Faculty Innovation	4.15	0.51	2.70	5.00

The statistics clearly show that there is a general agreement among the academic faculty, as their perception of being highly innovative, incorporation of AI technologies, and visionary leaders in their organizations is quite high.

Reliability Analysis

Table 3: Reliability Statistics

Construct	Items	Cronbach's Alpha
Transformational Leadership	16	0.941
AI Integration	10	0.915
Faculty Innovation	12	0.932

Our measurement tools demonstrated exceptional internal consistency, as demonstrated by Cronbach's alpha coefficients that all substantially exceeded the accepted 0.70 yardstick.

Convergent Validity

Table 4: Measurement Model

Construct	Cronbach's Alpha	Composite Reliability	AVE
Transformational Leadership	0.941	0.949	0.653
AI Integration	0.915	0.929	0.624
Faculty Innovation	0.932	0.941	0.641

The principles for convergent validity were easily content. The Average Modification Extracted (AVE) for each theory safely cleared the 0.50 threshold, and all Composite Reliability figures were situated well above 0.70.

Discriminant Validity

Table 5: Fornell-Larcker Criterion

Construct	TL	AI	FI
Transformational Leadership	0.808		
AI Integration	0.654	0.790	
Faculty Innovation	0.612	0.702	0.801

We found robust evidence for discriminant validity. For every unhurried construct, the rectangular root of its AVE was plainly larger than any of its correlation values with the other ideas in the model.

Structural Model Assessment

Table 6: Coefficient of Determination (R2)

Endogenous Variable	R2	Interpretation
AI Integration	0.428	Moderate
Faculty Innovation	0.612	Substantial

Hypothesis Testing

Table 7: Direct Effects

Hypothesis	Path	B	t	p	Decision
H1	TL AI	0.654	15.82	<0.001	Supported
H2	TL FI	0.318	4.91	<0.001	Supported
H3	AI FI	0.521	8.64	<0.001	Supported

The findings from the study provide us with an interesting story. We see that the creativity within academia relies heavily on the absorption of artificial intelligence. Also, we see that visionary leadership plays an extremely important and direct role on the faculty's innovativeness as well as in incorporating AI.

Mediation Analysis

Table 8: Indirect Effect

Hypothesis	Indirect Path	B	t	p	Decision
H4	TL AI FI	0.341	6.57	<0.001	Supported

Our statistical mediation procedures confirm that the assimilation of AI functions as a vital intermediary linking innovation to leadership. The presence of statistically significant results across both the indirect and direct trajectories indicates a dynamic of partial mediation.

Summary of Hypothesis Testing

Table 9: Summary of Results

Hypothesis	Statement	Status
H1	Transformational leadership positively influences AI integration	Supported
H2	Transformational leadership positively influences faculty innovation	Supported
H3	AI integration positively influences faculty innovation	Supported
H4	AI integration mediate the relationship between transformational leaders	Supported

Overall Findings

However, what can be deduced from the findings is a clear-cut answer: faculty members become overwhelmingly more likely to integrate AI technologies within their work processes when influenced by transformational leaders. Hence, the process of visionary leadership becomes an extreme catalyst of technology implementation. Besides motivating directly, this implementation becomes the key mediator through which the relationship between innovation in scholarly achievements and managerial quality can be explained. Simply put, these managers motivate creativity through a two-pronged approach: providing direct motivation at the same time opening the way for technology implementation.

Discussion

In regards to the current study, our main goal was to explore and understand the intricate relationship between the creativity outputs of the faculty and transformational administration by focusing on artificial intelligence integration as a mediator. This evidence is quite enlightening. It proves that innovative activities at academic institutions, as well as technology integration, are driven by visionary administration. Moreover, it becomes clear that artificial intelligence integration is a crucial mechanism that transforms excellent managerial guidance into tangible creative outputs at universities.

As far as the first hypothesis is concerned, our empirical findings provide quite convincing support for it. Transformational managers encourage the use of AI by offering personalized guidance and encouraging intellectual activity. In addition, they motivate the teachers to make use of artificial intelligence and thus increase their scholarly and educational effectiveness by

creating the environment in which digital evolution is viewed as an exciting challenge instead of disruption.

Naturally, this brings us to the second hypothesis that was also supported by convincing statistical data. The positive influence on the innovativeness of the faculty is related to the presence of visionary leadership. As the name implies, such leaders continuously encourage experiments and do not accept anything without a doubt.

Further, our research solidly proves the hypothesis that academic innovation is promoted by the integration of artificial intelligence. With more and more teachers using AI in their work, they will have access to enhanced research techniques, automation of all the monotonous routine processes, and complete change in the format of their curriculum delivery. Overall, artificial intelligence is a powerful resource that is used as a basis of academic innovation.

The realization of the intermediary nature of AI use becomes the greatest achievement of this study. Based on the evidence, we can conclude that visionary leaders create a system that is conducive to technological success, not just inspire people. This demonstrates a high level of synergy when the development of higher education is provided by two elements – advanced technology and visionary leadership working together.

From a theoretical point of view, our results support Transformational Leadership Theory, specifically in terms of its attention to intellectual stimulation and intrinsic motivation. Moreover, our results perfectly fit into the framework of the AMO model. In this case, the environment of the university is responsible for providing the necessary opportunity, AI provides the increased ability, and visionary management provides motivation.

Academic establishments have no other choice but to take heed from this practical point of view. It is absolutely essential that the visionary leadership skills of university administrators be cultivated. At the same time, universities must invest a significant amount of money into thorough training for their employees, the creation of the ethical AI framework and sophisticated digital infrastructure. Investing in continuous professional development in digital teaching and technological skills definitely brings huge profits.

Summarizing all of the above mentioned, one can conclude that the combination of responsible AI implementation and visionary management is much more than a temporary fashion. This is an absolutely necessary strategy for all universities trying to improve the quality of their education.

Conclusion

This study provided a highly detailed analysis of how academic creativity results from transformational management via the intermediary factor of artificial intelligence. There is no doubt that the empirical data presented here highlights the crucial role of visionary management in fostering innovative teaching practices and adoption of technology. Furthermore, the way how administrative strategies turn into creative academic accomplishments allows AI adoption to become an essential variable for the explanation of the observed phenomena.

The first thing that is quite obvious is the exceptional skill of transformational managers in creating highly supportive work environments. By gently pushing their staff members into adopting innovative AI technology, they allow the academic skills of their faculty members to

reach a completely new level.

In conclusion, the results obtained here bring an immense amount of empirical support to the current discussion on digital evolution and administrative strategies in the educational environment. It became clear that a university requires not only highly developed technology, but also visionary leaders who will be able to introduce it. Therefore, it is necessary for institutions of higher education to urgently develop strict technological ethics policies, increase their technological capacity, and most importantly, promote transformational leadership.

Recommendations

Taking into consideration the conclusions the study has drawn from analysis, we propose the following strategic recommendations:

- First, there is an urgent need for those at the helm of university administration to create a cooperative culture of innovation by applying transformational leadership approaches.
- Second, educational institutions should initiate a process of professional development immediately. The key goal in this case is to significantly enhance the level of technological skills and AI expertise on the part of the faculty in both research and teaching activities.
- Third, the universities need to allocate adequate finances for the construction of advanced technological infrastructure, which would allow for the academic staff having no difficulty while accessing technologies and IT services.
- Fourth, since ensuring data protection and integrity of learning process is extremely important, institutions should develop rigorous policies requiring the proper use of artificial intelligence.
- Fifth, in order to preserve intrinsic motivation at a high level, there should be adopted incentive policies which would reward innovative research and teaching practices.
- Sixth, higher-level regulators, for instance, the Higher Education Commission (HEC), should play an active role in this matter by creating capacity building programs and developing detailed structural guidelines for universities throughout Pakistan.

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