Interdisciplinary Insights: The Convergence of AI and Educational Leadership

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ABSTRACT

Artificial intelligence (AI) can address the greatest challenges in the education sector today; innovative learning and teaching practices accelerate the progress of the education system. The applications of AI in education are directed at fundamental principles of equity and inclusion. Ethical concerns related to implementing AI in education systems for students are very important and challenging for educational leaders. Educational leadership improves practices and programs by applying effective methods. As AI has the potential to make the learning process more engaging and create a new form of interaction, educational leaders seek enhanced technology approaches for the development of their education institutes. Educational leaders are aware of the challenges in implementing AI in education. The convergence of AI and educational leadership demands that leaders deal with security and privacy risks. The present study performed a quantitative analysis utilizing the SPSS version 23 software package. A structured questionnaire survey technique is utilized to gather data from university lecturers. A purposive sampling strategy was adopted for analysis. The objective behind this technique is to gather data relating to lecturers' perceptions regarding the convergence of AI and educational leadership. Descriptive statistics, ANOVA, regression, and frequency tests were performed. The outcomes of the study revealed that emerging AI technological tools are prevalent in the education sector. Furthermore, the study also evaluates the impact of the convergence of AI and leadership in educational systems. The study also focused on the effective use of AI-based education systems to enhance the value of educational leadership.

Keywords: Educational leadership, Artificial intelligence, Educational leaders, Ethical concerns, AI technological tool.

INTRODUCTION

Theoretical background

We kind of have a powerful possession that can be a tool to change everything. Schools and education are not enough to solve every issue, but education still has the potential to transform. Education gives humans the power to transform themselves and the environment (Bregman, 2020). Learning improves an understanding of social tasks and roles; it shapes the awareness and skills humans believe to cope with any difficulties with education. Institutional learning provides the ability to achieve different goals but simultaneously loses the independent mind and is ineffective at meeting the current requirements. One of the perceptions of education is that it helps in social reconstruction, responding to marginalization and excluding social groups and individuals through offering skills and knowledge required to develop the standard of life. The redefinition of school and education is necessary. The best way to do that is through educational leadership transformation. An original creative leadership is immediately required (Mazurkiewicz & Kołodziejczyk, 2017). Leadership demands creativeness, which allows one to escape

common mistakes. Leadership helps people in the growing stage fulfil their goals with complete satisfaction and respect for work and others. We require numerous efforts for education to arrange material and intellectual infrastructure. The most important factor to be transformed is educational leadership in the education system. The leadership role is a perplexing and complicated one (Mazurkiewicz & Fischer, 2021).

Educational leadership is a leadership form constructed together with the help of a set of people in every organization and project. It is a long period of development and learning, and the particular goals that are based on context and still learning are a major goal and always remain. Educational leadership potential is the ability of the organization to increase the involvement of participants in learning and decision-making processes. An educational leadership community for learning has been formed, which includes important elements such as emotions, mind, sensitivity, and experience with the state of operations and other humans (Mazurkiewicz, 2021)

Certainly, operational leadership seems to be a switch in renovating educational organizations. Educational leadership is community development that guides and influences people to voluntarily perform to achieve targeted goals in schools (Gyang, 2020). Countless school organizations across the world in recent decades have adapted to the transformation of their management structure. In the search for high standards, equity, and effectiveness in education, legislators announced a new public management concept, highlighting market orientation, accountability, comparisons, and decentralization patterns. Schools also acquired many more capabilities for decision-making at the operating level.

Nevertheless, simultaneously, it made school organizations more accountable for the failure and success of the students in terms of performance. Due to changes in autonomy, school leaders' tasks and responsibilities also increased. School leaders' scope of accountability includes not only administrative-related tasks but also employee and organizational management tasks. Additionally, school leaders are responsible for supervising the school's educational programs (Kemethofer, Helm, & Warwas, 2022).

AI is considered a powerful weapon for assisting original and creative paradigms for technological enhancement, instructional design, and education research, which cannot be improved with traditional education. AI is largely used in educational systems (AIEd), such as robots for teaching purposes, systems for intelligent tutoring, interactions between humans and robots, learning analytical dashboards, and adaptive education systems (Chen, Xie, Zou, & Hwang, 2020). AIEd offered challenges, potential, and different opportunities for the modernization of education, such as transforming to personalized learning, overcoming the difficulties of the tutor's role, and improving a complicated educational system (Starcic, 2019).

Various AIEd methods, such as machine learning, genetic algorithms, deep learning, natural language processing, and artificial neural networks, have been implemented to create an intelligent educational environment for detecting behavior, learning suggestions, and estimating model building (Chen, Xie, & Hwang, 2020). AIEd has become an important concentration in the education and computer field because it can nurture a makeover of cognition, culture, and knowledge (Hwang, Xie, Wah, & Gašević, 2020). Although AI can transfer education, better learning outcomes do not generally occur when AI technologies are used (Ouyang & Jiao, 2021); more consciousness and effort are needed.

AI increases the accuracy and efficiency of educational leaders. Data-oriented decision-making concentrates on student academics and instruction only, along with focusing on insufficient ethics and the well-being of people. AI largely depends on data; more data must be fed into AI for a more accurate AI system. AI speeds up and increases the potential to improve the data literacy of education leaders, which is significant for educational leaders to form a team with the ability to implement operational practices with communities and lecturers. AI in educational leadership is considered an approach for school leaders to finalize decisions related to the development of schools (Wang, 2021b). Hence, the study emphasizes interdisciplinary insights

into converging AI and educational leadership.

Significance of the study

The most important significance of integrating AI in educational leadership is enhanced decision-making. AI algorithms can analyse a large amount of data and offer valuable insights for educational leaders. This supports educational authorities and management in making well-analysed and informed decisions related to resource allocation, curriculum development, and learner support. By leveraging AI, educational leaders can utilize data-oriented recommendations, which can lead to more efficient and effective decision-making progress. Another fundamental factor is personalized learning. AI systems help individuals adapt to individual student requirements by offering personalized learning experiences. Educational leaders also utilize AI to identify students' weaknesses, strengths, and learning styles, enabling them to form personalized learning ideas. This individualized method enhances student engagement, academic performance, and inspiration.

Additionally, AI modernizes administrative responsibilities and funds for educational leaders.AI systems automatically help in a routine process of administration, such as data management, grading, and scheduling. Since automation is implemented, education leaders can concentrate more on instructional leadership, strategic preparation, and nurturing an optimistic learning atmosphere. Integrating AI and educational leadership develops transformative alterations. With the help of AI technologies, education leaders can undoubtedly enhance educational institutions and student learning. Although AI usage requires more careful planning, it is necessary in the age of technology to develop and improve the entire education environment.

The present study provides interdisciplinary insights into the convergence of AI and educational leadership. Education background development and the future depend on the adoption of AI technologies. Since integrating AI into the education system is essential, it is important to understand AI and educational leadership with a more elaborate perception to progress and handle technologies for the enhancement of students and education academies in the future.

Problem identification

The major problem of implementing AI in educational leadership demands a particular level of knowledge in technology. A lack of expertise is a serious problem in the process of integrating AI and educational leadership. Although integrating AI and educational leadership provides numerous advantages, its implementation must be ethical and thoughtful. Educational leaders should ensure that AI technologies are utilized to augment human abilities rather than to switch places with humankind. Furthermore, considerations such as equity, transparency and privacy of data must be prioritized to guarantee unbiased and fair outcomes. Effective interaction, transparency, and addressing problems are significant for gaining help and overcoming resistance, which may be difficult, as some people resist change in the education system due to the risk of privacy, job security, and many other reasons. These are the most important problems of converging AI and educational leadership. By addressing all the complications, educational leaders are able to gain and utilize the potential of AI.

Objective of the research study

The present study provides interdisciplinary insights into the convergence of AI and educational leadership. The research objectives of the current study are as follows:

- To analyse the impact of the convergence of AI and leadership on the educational system.
- To evaluate the emerging AI technological tools in education.

- To identify the effective use of an AI-based education system to improve the value of educational leadership.

Research Hypothesis

The research hypotheses of the current study are as follows:

Hypothesis 1

H1: The convergence of AI and leadership has a significant impact on the educational system.

$H1_0$: There is no significant impact of the convergence of AI and leadership on the educational system.

Hypothesis 2

H2**:** Emerging AI technological tools are prevalent in education.

$H2_0$: Emerging AI technological tools are not prevalent in education.

Hypothesis 3

H3: The effective use of an AI-based education system enhances the value of educational leadership.

$H3_0$: The effective use of an AI-based education system does not enhance the value of educational leadership.

Paper Organization

The paper is organized in the following order. Section 1 provides an elaborate introduction regarding interdisciplinary insights into the convergence of AI and educational leadership. Furthermore, the introduction section illustrates the significance of the research. In section 2, the prevailing research related to the current study is reviewed. The current study's research methodology is described in section 3. In section 4, the outcome of the analysis will be discussed. In section 5, the outcome of the analysis will be discussed with respect to existing studies. Finally, in section 6, a brief conclusion regarding the current study is presented, along with the limitations and future recommendations of the study.

LITERATURE REVIEW

The domain of AI is rapidly increasing with educational systems in interesting and new ways. This is primarily used to customize the learning experience for tutors and groups (Majid & Lakshmi, 2022). AI is altering a normal environment with technology assistants such as Google and Apple, which influence schools. (Tyson & Sauers, 2021) investigated educational leaders' perspectives and experience in the implementation and adoption of AI systems in schools. Additionally, it scrutinized the elements that led educational superintendents to adopt AI programs and their viewpoints on the implementation process. The prevailing study applied qualitative research methodology, which comprises structured interview questions. The data were collected from seven respondents who adopted AI programs for their schools. Snowball and purposive sampling methods were used to select the samples, and the interview transcripts were analysed by coding. The prevailing study had two important findings: educational leaders showed interest and were actively involved in transformation related to the adoption of AI and its implementation. Another discovery is that organizations were formed to guarantee the success of implementing and adopting AI in schools.

The potential of AI related to education is not limited to students. Educational management officials and

staff members also use AI to reshape the future and gain the interest of the government, academia, and the public widely (Cox, 2021). (Wang, 2021a) overlooked AI sensational exaggeration in learning and focused on exploring the role of AI in educational leadership. To analyse the role of AI in academic leadership, this study synthesized all the related literature and started by conceptualizing decisional making comprising both organizational and individual decision-making as the basis of educational leadership. A prevailing study revealed that AI has the potential to efficiently help educational leaders in evidence-informed and data-driven decision-making. Additionally, the ability of AI to outperform and perform against morals can be a serious issue. Therefore, I insisted on considering data-driven, value-based moral, and evidence-informed decision-making, overcoming AI shortcomings with human help manually, and making judgments with value and morals.

Rapid technological advancements have led to the use of AIEd (Hwang et al., 2020). Online education requires strong educational leadership, which can empower everyone possible and influence. (Trinova, Iskandar, Fathurrochman, Damayanto, & Fatmawati, 2022) examined educational leadership talent in accepting and implementing virtual education methods during a pandemic. The data utilized in the study were entirely secondary data, which were gathered from different scientific journal publications, particularly related to educational leadership. Many educational leaders supported virtual learning during times of crisis to improve and develop education systems without damaging students' academic plans. Educational leaders have transformed their schools over catastrophes with the help of technologies such as artificial intelligence (AI) and machine learning.

Members using AI in educational sectors are motivated by ethical concerns (Holmes et al., 2021). (Fullan, Azorín, Harris, & Jones, 2023) focused on the rise of AI and its impact on educational leaders and schools. The implications, opportunities, and challenges associated with an infusion of AI are also examined. The prevailing study revealed that the responsible and ethical use of AI tools such as ChatGPT demands immediate consideration from the education system worldwide. AI impacts both learning and teaching processes in educational institutions. There are significant challenges in implementing AI in schools and other education universities. Educational dishonesty was found to be a main challenge in using AI in schooling. The study concludes that the emergence of new technologies definitely changed the leadership of schools and colleges and demands that educational leaders frequently expand and adopt knowledge related to technologies ahead of the AI bend.

In the world of digital transformation, AI is the most important component that can change the entire education system (Cope, Kalantzis, & Searsmith, 2021). AI provides incredible opportunities for learning, teaching, and leadership. Education sector leaders are expected to be prepared and updated with technologies. (Milton & Al-Busaidi, 2023) focused on the role of leadership in the AI era, specifically in the educational sector. An external desk methodology was used for data collection. The data were collected from websites, libraries, and survey data, which were collected as secondary data. The prevailing study revealed that machine learning and AI usage have revealed new perceptions of learning applications. Therefore, education sector leaders are supposed to have skills, as AI has transformed the role of leadership in the education system. The study concludes that education leaders must have hard and soft skills to manage new technologies and to improve higher education to an extraordinary level.

Educational leaders in Nigeria have faced numerous difficulties in the process of using AI for sustainable improvement, due to which education objectives in the country have been affected. (Avurakoghene & Oredein, 2023) examined AI and educational leadership for attaining sustainable growth in Nigeria along with challenges in implementation. The qualitative research methodology approach is applied to determine educational leadership, AI, and sustainable development information. The prevailing research has shown that AI significantly impacts operational and educational leadership, which ultimately influences the sustainable improvement of the education system. From the perspective of educational leaders, the

challenges in implementing AI included a lack of funding and technical expertise, insufficient infrastructure, a lack of regulations and policies, a lack of awareness among the public, and ethical concerns along with qualifying strategies. The study concludes that AI and educational leadership can support sustainable development.

The private sector utilizes political circumstances favourably to quickly improve the educational market and application (Knox, 2020). (Shaqra, 2023) analysed the role of AI in improving the leadership skills of educational leaders in private and public universities. The data were collected from 265 faculty members in the northernregion. The sampling method utilized was a random sampling technique to choose the samples. The tool was prepared to cover all three different categories, such as technical skills, decision-making, problem-solving, and intellectual skills in administration, to analyse the sample members. The prevailing research has shown that AI has a significant impact on improving the leadership skills of educational leaders to an average degree.

Additionally, there were major differences in gender attributes and no differences in sector or type of college university. This was due to academic ranks. The study concludes that education leaders must employ AI in universities to enhance educational leadership.

Research Gap:

- The existing study (Shaqra, 2023) has limited samples in a particular region and failed to include other southern regions. Therefore, the results might lack generalizability because they examine the specific community of a particular location.
- Previous studies (Avurakoghene & Oredein, 2023) have not discussed the impacts of bringing experts from various disciplines, such as business and computer science, and integrating them with AI sustainable development projects.
- The existing study (Wang, 2021a) has not discussed biases and ethical-based decisions in educational leadership with the usage of AI.
- The existing study (Tyson & Sauers, 2021) has not mentioned an adequate literature section related to school leadership and AI, which provides less information on the context and reduces the possibility of understanding the significance of the study.

RESEARCH METHODOLOGY

Research Design

The research design is denoted as the structure of the research method used to complete the study (Asenahabi, 2019). The research design is envisioned to provide a suitable framework for a study. A very important judgement and resolution in the research design progression is the decision to be made concerning the research approach (Sileyew, 2019). The process of providing a précised and complete framework on which the research will be processed is denoted as the research design. In brief, the research design is considered to involve the execution of several procedures, processes and instruments to obtain data for the purpose of research. The entire framework and the research flow of the current study are revealed in the research design. It integrates the appropriate approach for current research by answering questions. The research plan also encompasses various combinations of techniques and plans. The current study adopted a quantitative research approach. The quantitative method refers to congregating unchangeable numerical data and has been evaluated with the aid of mathematical approaches. This provides statistics associated with questions of when, how, where what, how much, and how many. It incorporates the objective, logic, and number stance (Baur). The current study utilizes a quantitative research methodology for congregating data through a questionnaire from lecturers in universities. The research instrument utilized in the current research is a questionnaire, which aids in congregating data regarding the lean methodology and its

optimization (Mohajan, 2020). The quantitative research utilizes a survey as well as a questionnaire method for the gathering of primary data (Sürücü & MASLAKÇI, 2020). The qualitative method provides a deep understanding of the research study problem, and the data from the qualitative approach provides depth to the study (Dawadi, Shrestha, & Giri, 2021).

The current study utilizes a quantitative research methodology for congregating data through a questionnaire. (Alber, 2020). The research instrument utilized in the present study was a questionnaire. It helps to capture interdisciplinary insights into the convergence of AI and educational leadership. The survey was conducted among lecturers at universities.

Study Area

The research is accompanied by university lecturers who are enthusiastic about participating in the survey. This approach aids in the fruitful achievement of the present research. The survey was conducted with the support of the participants. The defendants who participated in the survey for this research were within education institutions. This will enhance the significance of the study's purpose. This makes the data-gathering process easier.

Sample Size and Population

For any type of research, the sample size of the study must be selected carefully with a view to receiving a generalized and accurate outcome (Stratton, 2021). In the current study, suitable sample participation will be chosen based on the extent to which information concerning interdisciplinary insights about the convergence of AI and educational leadership is received (Lakens, 2022). The present study applied the purposive sampling method. In purposive sampling, a sample is selected in accordance with relevant experiences and information for research purposes. Certain principles in the selection of a sample result in the in-depth outcome of the study. (Fowler & Lapp, 2019). In research, sampling is considered the process of choosing a subset of individuals or units from a large population to represent the entire population. The subgroup selection from the complete population is known as a sample, categorized into nonprobability and probability sampling techniques. The probability sampling method incorporates random selection. It provides equal opportunities for the population to be chosen. Few commonly employed probability techniques include stratified sampling, cluster sampling, random sampling, and systematic sampling, where as the nonprobability sampling technique incorporates diverse samples in the research outlook of subjects rather than random selection. The sampling methods included purposive sampling, snowball sampling, self-selection sampling, and quota sampling. (Adhikari, 2021). One hundred participants were selected for the process of analysis. The targeted respondents are lecturers working in universities who can provide and share knowledge of interdisciplinary insights into the convergence of AI and educational leadership**.**

Research instrument

The current study will collect data with structured questionnaires from lecturers working in universities. The questionnaire method is an easier mode of collecting data. There are two types of questionnaires: structured questionnaires and unstructured questionnaires. Several interview methods involved in gathering data are categorized into direct, indirect, and in-depth interviews. Hence, the present study used a questionnaire to collect data from carefully chosen respondents.

Data analysis

Quantitative analysis is a systematic phenomenon that involves congregating data and executing computational, mathematical and statistical approaches (Jung, 2019). This technique is applied to gather data from respondents and define the outcomes for the targeted population (Dzwigol, 2020). The

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quantitative approach congregated data from prospective and conventional management employees with the help of sampling tools and provided online surveys, polls, etc. The outcome of the quantitative method was determined numerically. The numerical values are interpreted, and upcoming research is predicted along with appropriate changes. The qualitative methodology is market research analysis, which involves gathering data through conversational and open-ended communication. It is a multi method focused, naturalistic method and is an interpretative method for its subject matter (Maxwell, 2021).

The quantitative data analysis method was used for the current study, and the analysed data were gathered using a structured questionnaire from sample respondents. The data were recorded utilizing an Excel spreadsheet to reveal study variables. The software tool SPSS was used to analyse the study variables in an Excel spreadsheet. The study's outcome is estimated using five approaches: ANOVA, reliability, correlation, coefficient, and frequency.

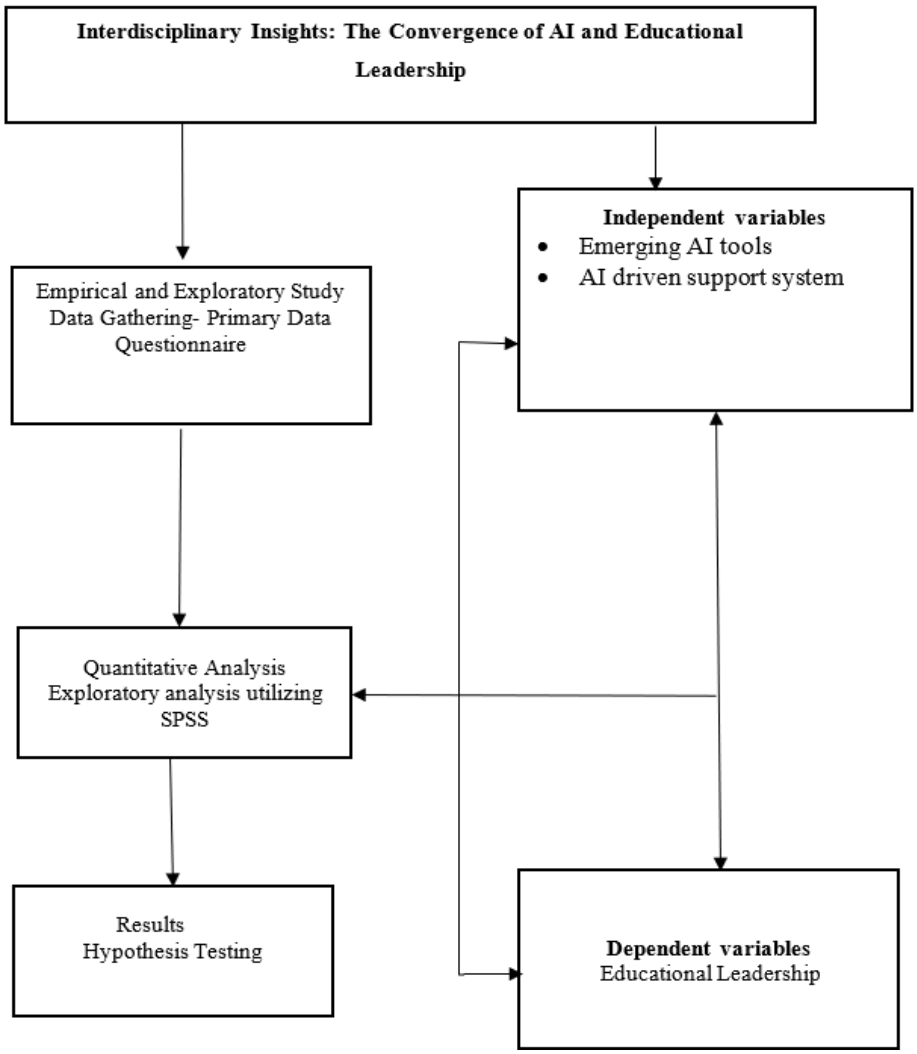

Figure 1. Research Design

The given techniques will be applied to identify the data and verify the association between the study variables of the current research. Based on the outcome of the study variable, interpretations will be conducted, and essential development will be recommended in the current study. With the help of SPSS software, the outcome of the current study will be efficient for documenting the study variables. The progress incorporated in the current study is demonstrated in Figure 1. The outcome of the variables' frequency will be demonstrated in the figures and table, whereas correlation evaluation, ANOVA evaluation, and regression evaluation will be conducted to assess the structured hypothesis of the current

study.

SPSS software is a set of software programs that analyses and studies scientific information that is relevant to research purposes and social science. This software provides the visual environment in a fast manner and covers both complex and the smallest models. Surveys, market research, data mining, education institutions, and other fields use the data collected from SPSS. It is popular software because of several common features, such as the user manual, which is well documented, easy-to-understand instruction language, and simplicity. The fundamental functionality provided in SPSS is a statistical program intended for quantitative data analysis, which includes bivariate statistics, cross-tabulation and frequencies, text analysis, and modeller programming for the survey. Compared to other statistical tools, SPSS data analysis requires less time, which results in rapid outcomes.

The data analysis is conducted via deep evaluation and statistical analysis methods. To generate appropriate results, the data set is constructed resourcefully, and SPSS can also handle a large set of data and various formats. This finds the problem of the study and generates a solution in statistical form. Therefore, in the present study, SPSS software was used to test the research hypotheses.

Ethical considerations

A common description of lying for ethical concern is the principles obtained that are morally right, are not harmful to any being and are devoid of violating the rules and terms along with the law. In a research aspect, ethical consideration is the collection of principles that help carry out the entire study and research with appropriate design sections and practices. Informed consent or voluntary participation and results communication can occur. Some of the ethical considerations include environmental responsibility, discrimination, the disclosure of a corporation, espionage, and any form of harassment. Research might face some ethical concerns, such as confidentiality and anonymity. This research is highly devoted and more applicable to practical ethical concerns and practices.

RESULTS

Demographic data

One hundred lecturers at the university were considered participants in the current study. The demographic characteristics of the participants are described below.

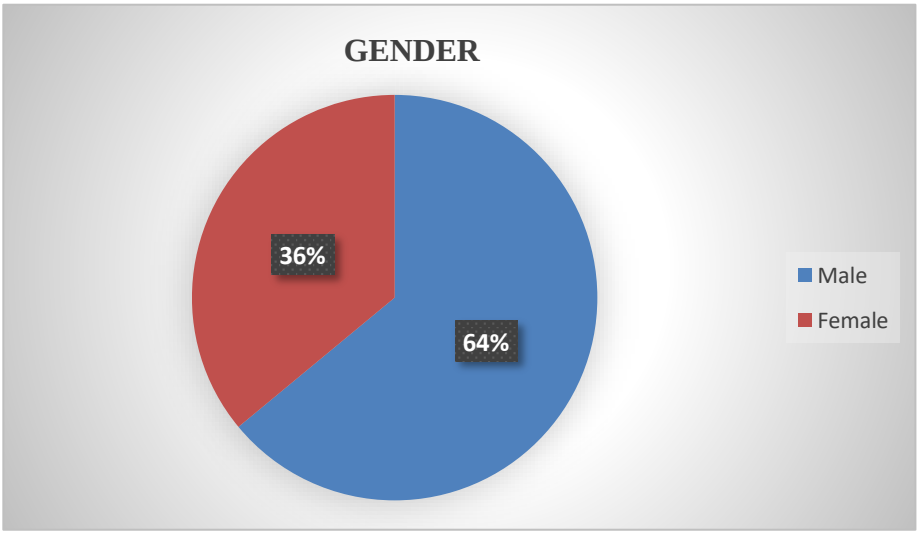

Figure 1 Gender of the respondents

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Figure 1 illustrates the gender of the participants. Several respondents were male. This group contributed more to the research. Such groups have updated knowledge of the convergence of AI and educational leadership. Their contribution enhances the precision and accuracy of the research.

Figure 2 Work experience of respondents

Figure 2 shows the work experience of the respondents. Most respondents had 11 to 15 years of working experience, followed by 6 to 10 years of work experience. These categories contribute more to the research study. The other group of respondents had less than six years and more than 15 years of work experience.

Statistical analysis

Hypothesis 1

H1: The convergence of AI and leadership has a significant impact on the educational system.

$H1_0$: There is no significant impact of the convergence of AI and leadership on the educational system.

One-way ANOVA

It is utilized for determining the impact of social media and research objectives on the dependent variables and to investigate the variation (Liang, Fu, & Wang, 2019). The current study adopted one-way ANOVA to evaluate the impact of the convergence of AI and leadership on the educational system.

Independent Variable: AI-driven Decision Support System Impacts Leadership Transformation in the Educational Sector

Dependent Variable: AI-driven decision support systems provide benefits

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Table 1 Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Strongly Agree	19	1.05	.229	.053	.94	1.16	1	2
Agree	72	2.17	.475	.056	2.06	2.28	2	4
Neutral	5	2.20	.447	.200	1.64	2.76	2	3
Disagree	3	3.00	1.732	1.000	-1.30	7.30	2	5
Strongly Disagree	1	5.00	.	.	.	.	5	5
Total	100	2.01	.745	.075	1.86	2.16	1	5

Table 2 ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	17.680	4	4.420	11.254	.000
Within Groups	37.310	95	.393		
Total	54.990	99			

Table 2 demonstrates the impact of the convergence of AI and leadership on the education system. The outcome of the analysis pvalue was .000. The results of the one-way ANOVA prove that most of the lecturers agreed on the impact of the convergence of educational leadership and AI in the education system through offering facilities to the lecturers. This influences the enhancement of the education structure and largely contributes to development. This table also demonstrates the convergence of AI and the impact of educational leadership on organizations in the education sector.

H1: There is a significant impact of the convergence of AI and leadership on the educational system, which is proven from the above analysis.

Hypothesis 2

H2**:** Emerging AI technological tools are prevalent in education.

$H2_0$: Emerging AI technological tools are not prevalent in education.

Frequency Test

It is utilized to identify the number of occurrences of specific variables and to measure the reliability of predictions.

Table 3 Statistics

N	Valid	100
	Missing	0

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Table 4					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	29	29.0	29.0	29.0
	Agree	62	62.0	62.0	91.0
	Neutral	6	6.0	6.0	97.0
	Disagree	2	2.0	2.0	99.0
	Strongly Disagree	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

Table 4 illustrates the prevalence of emerging AI tools in the education sector. Most of the respondents agreed that evolving AI technologies are widespread in the education sector through involving them in designing and making jobs better, which allows lecturers to engage better in helping students.

H2: Emerging AI technological tools are prevalent in education, as proven by analysing the usage of emerging AI tools in education.

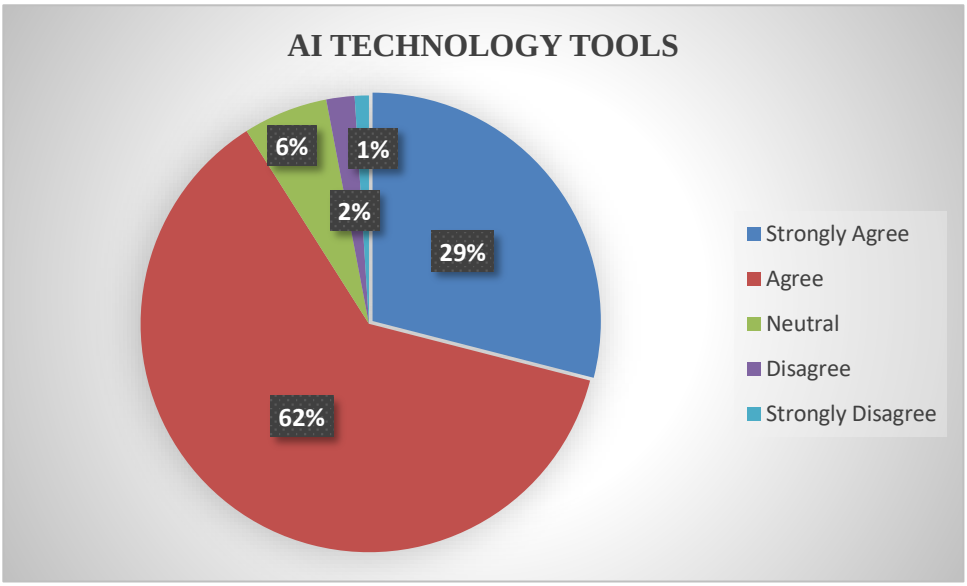

Figure 3 Respondents about AI technology tools

Hypothesis 3

H3: The effective use of an AI-based education system enhances the value of educational leadership.

$H3_0$: The effective use of an AI-based education system does not enhance the value of educational leadership.

Regression

It is utilized to determine the impact of social media and research objectives on dependent variables and to investigate the variation (Liang et al., 2019). The current study adopted one-way ANOVA to evaluate the impact of social media on the behavioral intentions of rural women in India.

Independent Variable: The convergence of AI and educational leadership provides appropriate resources for the job, teaching, and learning with AI; enhances opportunities to improve education; recognizes challenges

that will arise; and develops recommendations.

Dependent Variable: AI-driven decision systems impact the decision-making process in educational leadership and allow individuals to make proper decisions, reduce risks, and enhance product performance

Table 5 Model Summary

R	R Square	Adjusted R Square
.545[a]	.792	.282

a. Predictors: (Constant), The convergence of AI and Educational Leadership provides appropriate resources required for the job, Teaching and learning with AI, enhances opportunities to improve education, recognizes challenges that will arise, and develops recommendations

Table 6 Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.965	.185		5.207	.000
	Teaching and learning with AI enhances opportunities to improve education, recognize challenges that will arise, and develop recommendations	.463	.223	.482	2.078	.040
	The convergence of AI and Educational Leadership provides appropriate resources required for the job	.073	.256	.067	.287	.775

a. Dependent Variable: AI-driven decision systems impact the decision-making process in educational leadership and allow to make proper decisions, reduce risks, and enhance product performance

Table 6 illustrates the effectiveness of the AI-based education system in enhancing the value of educational leadership, and the pvalue is .000. Table 5 shows the results of the regression test, with an R squared value of .792. This illustrates that many lecturers in universities agree that AI usage in education enhances educational leadership value.

H3: The effective use of an AI-based education system enhances the value of educational leadership, as proven by the above analysis.

DISCUSSION

The current study's outcome provides interdisciplinary insights into converging AI and educational leadership. An examination of the enhancement of technology skills by education leaders is needed. The present study also highlights many challenges that cause education sector leaders to not easily implement AI in their education institutes, such as ethical considerations and the use of AI as a support system. The descriptive statistics, ANOVA, frequency, and regression tests demonstrate the significance of understanding the convergence of AI and educational leadership.

(Shaqra, 2023) illustrated the role of AI in improving leadership skills in educational sector leaders. The outcome of the existing study proves the importance of AI in enhancing educational leadership. Similarly, the present study also shows that the convergence of AI and educational leadership enhances educational

leaders' skills and illustrates the application of AI in educational leadership in the face of various challenges.

The existing study (Avurakoghene & Oredein, 2023) illustrates the role of converging AI and educational leadership for sustainable development in the education sector along with its challenges, including lack of technical expertise, ethical concerns, and inadequate infrastructure. Similarly, the present study briefly illustrates ethical considerations in AI and educational leadership. The current study also discussed job opportunities and the impact of AI on education quality.

(Trinova et al., 2022) showed that many educational leaders prefer the convergence of AI and educational leadership. The current study also emphasizes the significance of integrating AI and educational leadership, discussing various aspects such as AI-driven decision system impacts on educational leadership and the major issue of AI and ethical considerations.

(Fullan et al., 2023) illustrated the impact of AI on educational leaders and schools. The outcome of the prevailing study discussed challenges, opportunities, and implications. Similarly, the current study also illustrates the convergence of AI and educational leadership and how AI enhances educational leadership. The present study also discusses emerging AI technology tools in education.

Limitation

The main limitation of this study is that the participants were only lecturers at universities. Hence, the results might lack generalizability. Moreover, the sample size of the studies was too small to generate very effective results. This study is limited to only universities, so future studies can consider other educational institutions, such as schools around the world, to study the convergence of AI and educational leadership. The outcome of the study can always vary with the understanding of other faculties from primary and secondary high school. However, the recommendation provided by the research can be valuable for improving awareness among teaching and learning groups in universities, such as implementing AI that incorporates high ethical considerations for educational leadership enhancement.

CONCLUSION

The convergence of AI and educational leadership is an evolving trend that holds an excessive perspective for the enhancement of different aspects of education. AI technologies help educational leaders make judgments based on data, enhancing the process of administration and improving students' learning experience. The present study explores the impact of AI and educational leadership convergence in the education system. AI can examine vast amounts of data to offer predictions and insights that can provide information on resource allocation and strategic planning in the education sector. Additionally, it allows educational leaders to discover the improvement required areas that help in optimizing operations. The present study also analyses the use of AI systems to develop educational leadership. The convergence of AI and educational leadership is highly anticipated since administrative operations such as management and grading tasks easily enhance educational leadership by offering free time for developing strategic initiatives. The convergence of AI and educational leadership is important because it improves processes of management, enhances decision making, and improves the experience of students in learning. The present study also recommends the integration of AI and educational leadership with caution. Ethical consideration is a significant factor to consider during the implementation of AI.

DECLARATION

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