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A STUDY ON AI-CHANGING THE ROLE OF TEACHING JOBS IN HIGHER EDUCATION AND AI-LITERACAY IN INDIA

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ABSTRACT

Rapid advances in Artificial Intelligence (AI) are reshaping the employment landscape, making some positions redundant while creating new opportunities. Higher education institutions in India must adapt to this evolving environment by incorporating Artificial Intelligence (AI) literacy into their educational programmes. This paper examines the impact of Artificial Intelligence (AI) on job performance and highlights the importance of promoting Artificial Intelligence (AI) literacy within higher education in India. It examines the current status of Artificial Intelligence (AI) implementation in Indian regions, the competencies required for the future workforce, and the barriers facing higher education institutions in delivering Artificial Intelligence (AI) literacy. The paper concludes with recommendations for policy makers, academics, and industry stakeholders to ensure that Indian graduates have the necessary skills to succeed in an Artificial Intelligence (AI)-driven economy.

Currently, a significant amount of data is being managed by most universities in India. This data is used to monitor student admissions, examination processes, academic records, degree verification, and official documents. AI (Artificial Intelligence) has emerged as an important element within the framework of higher education in recent years. According to the 2024 Times Higher Education Survey, nearly 60% of university faculty members are now

incorporating AI (Artificial Intelligence) tools into their professional activities. UNESCO (United Nations Educational, Scientific and Cultural Organization) recently stated that AI (artificial intelligence) is changing the way educators teach faster than any educational reform seen in decades. This prompts us to consider:- Will Indian universities simply observe these changes, or will they actively participate in shaping the future of Artificial Intelligence (AI)-powered education across India? The National Education Policy (NEP) 2020 aims to broaden access, enhance research capacity, promote internationalization, and establish world-class institutions. Nevertheless, this objective can only be realized if our universities and colleges are ready for Artificial Intelligence (AI)-integrated educational efforts. Those who embrace this change will prosper. On the contrary, those who resist will be left behind.

KEYWORDS: Artificial Intelligence (AI), Job Role, Higher Education, AI-Literacy, India, Education Technology, Future Workforce, Skills Development, Digital Transformation.

1. INTRODUCTION

Artificial Intelligence (AI) has been transforming industries and revolutionizing the way we work. The increasing adoption of AI technologies is expected to automate routine and repetitive tasks, freeing up human resources for more complex and creative tasks. However, this change also creates significant challenges for the workforce, as some job roles become obsolete while new roles emerge. In India, where the youth bulge is expected to continue for the next few decades, equipping the future workforce with the skills needed to thrive in an AI-driven economy is crucial.

A misconception exists that AI poses a threat to the role of educators. However, global research indicates the opposite. Educators are increasingly important because learning requires human guidance, judgment and academic intent. While Artificial Intelligence (AI) is capable of processing information, it cannot help students develop character, nurture curiosity, or engage in critical thinking. Educators will continue to be the human connection that motivates students to cultivate these essential values.

2. REVIEW OF LITERATURE

A study by the University of **Melbourne shows** that Artificial Intelligence (AI) tools are having an increasing impact on the way trainers carry out their responsibilities. Educators are now spending more time developing ways to engage students in learning through debate, discussion, and practical problem solving.

The most notable changes are in the area of assessment. Universities all over the world are now implementing what academic researchers call “authentic assessment”. These assessments include oral examinations, reflective tasks, in-class problem-solving activities, applied projects, and viva-style defenses that evaluate originality of thought. Such assessment is in accordance with the guidelines set by the NEP 2020 regarding competency-based education. The role of educators is transitioning from simply delivering content to designing learning experiences. This transition has already led to the emergence of new academic roles, such as learning designers, curriculum architects, educational technologists, and experts in Artificial Intelligence (AI)-integrated teaching methods. This position is poised to shape the landscape of higher education in the coming decade.

2.1. AI Accelerating the Research Process

Artificial Intelligence (AI) has significantly increased the efficiency of the research process. Literature reviews that previously required weeks to finalize can now be completed in mere hours with the aid of Artificial Intelligence (AI) search tools. The pace of research trend mapping, citation clustering, translation of academic papers, and data visualization is evident. In a report published in 2024, Nature Publishing Group characterized Artificial Intelligence (AI) as "a powerful assistant capable of large-scale analysis, yet requiring guidance from human judgment." In addition, AI is transforming academic collaboration. Researchers are increasingly using Artificial Intelligence (AI) to engage in interdisciplinary fields, integrating concepts from computer science, social science, environmental science, and health care to address complex challenges. This movement aligns with NEP (New Education Policy)-2020 advocacy for multidisciplinary research in India. While AI cannot replace researchers, it can help significantly. Current tools are capable of generating draft abstracts, proposing experimental designs, verifying statistical accuracy, and identifying contradictory citations. How can we ensure these opportunities are based on the responsible use of Artificial Intelligence (AI)? Educators should be trained to recognize biases in Artificial Intelligence (AI)-generated content. They must embrace the notion that accountability, ethical use of tools, and recognition of Artificial Intelligence (AI)-generated outcomes are fundamental aspects of using AI in research endeavors.

The landscape of grant writing is evolving. The UGC has requested that all universities set up Research and Development (R&D) cells within their campuses. These Research and Development (R&D) cells have the ability to use Artificial Intelligence (AI) systems to identify funding opportunities, align faculty with expertise, and motivate faculty members to develop project proposals. Many promising researchers face challenges not because of a lack

of ideas, but because of inadequate support in proposal writing. If used responsibly, Artificial Intelligence (AI) has the potential to equalize this situation.

2.2. The Administration of Universities Evolving with Wisdom

Artificial Intelligence (AI) is revolutionizing the administration of universities. Currently, the majority of universities manage huge amounts of data. This data is used to monitor student admissions, examination processes, academic records, degree verification, and official documents. A 2023 study on global higher education administration found that Artificial Intelligence (AI) and automation reduce clerical workloads, enabling staff to transition from data management to student support. It's important for universities to hire skilled individuals capable of managing research and student data, ensuring that Artificial Intelligence (AI) systems operate equitably, and guaranteeing that technology provides students with a personalized and approachable experience. As Artificial Intelligence (AI) becomes more prevalent in teaching, research, and assessment, protecting the integrity of their work should be of paramount concern to universities. In addition, the governance framework should be developed to be more accountable| Universities must build trust among students, ensuring their records are protected, assessments are done fairly and Artificial Intelligence (AI) tools do not exploit their data.

2.3. The AI Era giving Birth to New Academic Positions

Artificial Intelligence (AI) has emerged as a catalyst for novel career opportunities. Three categories of positions are expanding in universities around the world. One such area is educational innovation. Specialists in these positions are expected to help educators integrate Artificial Intelligence (AI) tools with instructional design. In the area of research, engineers working in the university's Computer Service Center have to take on new responsibilities for data management and overseeing Artificial Intelligence (AI)-enhanced research. In addition, individuals in positions of governance within institutions must possess the necessary skills to ensure the ethical application of Artificial Intelligence (AI). Moreover, faculty members also have to adopt new responsibilities. They need to develop skills in instruction, accreditation, and supervision using Artificial Intelligence (AI). Universities that equip their staff with these competencies will build campuses ready for the future.

2.4. Why should India Act Immediately?

India has the potential to become a global leader in Artificial Intelligence (AI)-powered education, given its recent achievements in executing large-scale mission-mode initiatives like the introduction of indigenous 4G networks. With one of the largest university networks worldwide and millions of young learners, India can frame a higher education that

incorporates technology while preserving its human-centric essence. If Indian universities take proactive measures, they can attract students from all over the world who are looking for a contemporary learning environment at a reasonable cost. India has the potential to lead the world in education by leveraging its strong educational infrastructure, advanced technology, and ensuring equal access to learning opportunities for all. Nations that effectively harness artificial intelligence in education will define the future of higher education. India stands at the crossroads of shaping that future. The moment to take action is now. The surest sign that artificial intelligence has transitioned from the periphery to a central role in higher education is presented in Artificial Intelligence (AI) in Education in 2025.

2.5. Impact of AI on Job Roles

AI is revolutionizing job functions in many sectors, such as manufacturing, healthcare, finance, and customer service. A **World Economic Forum report** shows that by 2022, more than a third of the skills required for most positions will be competencies that are not currently considered critical to the job. Some job positions expected to be affected by AI include:-

(a) Data entry operator

(**b**) Customer Service Representative

(**c**) Bookkeeping, accounting, and auditing clerks

(d) Market research analysts

*(**e**) Unlike financial analysts, new job positions are being created, including:*

*(**f**)* Artificial Intelligence (AI) and Machine Learning Engineers

(**g**) Data scientists

(h) Business analysts

(i) Cyber security experts

(j) Virtual reality and augmented reality developers

2.6. Promoting Artificial Intelligence (AI) Literacy in Higher Education

To equip students for the evolving job landscape, higher education institutions in India must integrate Artificial Intelligence (AI) literacy into their educational programs. Artificial Intelligence (AI) literacy includes the ability to understand and engage with Artificial Intelligence (AI) technologies, such as machine learning, natural language processing, and computer vision. This requires a multidisciplinary strategy, combining technical skills with critical thinking and creativity.

Some essential skills students should develop to succeed in an AI-driven economy include:-

(a) Proficiency in programming languages such as Python, R, and Java

(b) Skills in data analysis and visualization

(c) Knowledge of machine learning algorithms and models

(d) Critical thinking and problem solving ability

(e) Skills in creativity and innovation.

Based on a survey of **CopyLeaks** that more than 1,100 U.S. students from two-year colleges, four-year universities and graduate programs, it found that 90% of students have used Artificial Intelligence (AI) for academic purposes, with nearly 75% reporting an increase in their use during the past year. The integration of Artificial Intelligence (AI) is not limited to undergraduate students. In fact, the largest proportion of respondents-43.9%-were adult learners between the ages of 45 and 60. Furthermore, 27% were aged 30-44 while only 29% fell in the age range of 18-29. This shows that Artificial Intelligence (AI) is not just a study aid for Gen Z; it is also becoming an essential resource for mid-career professionals and lifelong learners who are re-engaging with higher education. Students indicated that they use Artificial Intelligence (AI) to brainstorm ideas, draft outlines, create initial drafts, and clarify complex concepts. Their reason reflects a positive intention: to save time, increase the quality of work and deepen understanding.

The survey, conducted in the United States, is not an anomaly. A worldwide investigation by the Digital Education Council found that 86% of students in 16 different countries are already integrating Artificial Intelligence (AI) into their academic work, with more than half using it on a weekly basis. The findings of this study highlighted that students did not wait for faculty or administrative guidance to determine pace; they were independently adopting Artificial Intelligence (AI). Locally, the Harvard Undergraduate Generative Artificial Intelligence (AI) Survey showed that nearly 90% of Harvard students have already used Artificial Intelligence (AI) in their academic work. Many respondents noted that Artificial Intelligence (AI) assisted them in refining their concepts and enhancing their writing.

At a leading technological university, a survey of more than 4,800 students for the 2024–25 academic year found that Artificial Intelligence (AI) use was not only widespread but also tailored to specific disciplines, particularly in Science, Technology, Engineering, and Mathematics (STEM) fields where students used Artificial Intelligence (AI) as both a research aid and study companion. Many students expressed their dissatisfaction that institutional policies have not yet adapted and called on administrators to officially integrate

Artificial Intelligence (AI) into the educational framework. Furthermore, at a prestigious American college, a 2025 survey showed that more than 80% of students had started using Artificial Intelligence (AI) for academic purposes within just two years after the launch of Chat GPT. The rapid rate of adoption in this environment highlights how rapidly generative Artificial Intelligence (AI) has woven itself into the academic landscape, even in a context where there are still high hopes for independent work.

Collectively, these studies reflect the trend toward broader generalization. Whether in the U.S. or internationally, within prestigious institutions or technical colleges, and among both undergraduate and mid-career students, the trend has been consistent: Students have increasingly incorporated Artificial Intelligence (AI) into their academic experiences, outpacing the adaptability of their professors and administrators.

2.7. Future Directions for Higher Education

The implications for colleges are unmistakable. If students are already universally engaged with Artificial Intelligence (AI), institutions that persist in treating it as a marginal concern risk becoming obsolete. “It’s unusual for a technology to be so essential that every student and professional has to grasp it,” says **Dimitris Bertsimas**, vice provost for open learning at MIT and associate dean for online education and artificial intelligence at Massachusetts Institute of Technology (MIT) Sloan in Cambridge.

College assignments that prohibit the use of "No AI" are becoming increasingly obsolete. Students with informal Artificial Intelligence (AI) skills are moving forward with minimal guidance on responsible use. According to a Society for Human Resource Management **(SHRM)** survey, a significant 83% of professionals believe Artificial Intelligence (AI) is essential to workforce readiness. Given the employer perspective and the $1.1 trillion annual skills deficit, universities that ignore Artificial Intelligence (AI) could face reputational damage and misalignment with workforce needs.

Artificial intelligence is rapidly changing the world, transforming industries, redefining the job market, and changing the way we approach education. As automation takes over routine tasks, educational institutions are striving to equip students with the necessary Artificial Intelligence (AI) literacy to succeed in a landscape where technology can be integrated into virtually every profession. Artificial Intelligence (AI) literacy has become an essential skill rather than just an option for parents assisting their children on their college admissions journey. The relevant question is not whether Artificial Intelligence (AI) will affect their future, but how they will navigate it, utilize it and perform better. A report from the **McKinsey Global Institute** highlights an important truth:- As Artificial Intelligence (AI) and

automation progress, three categories of individuals will remain quite relevant. The first group includes those who can collaborate effectively with intelligent machines, leveraging Artificial Intelligence (AI) to increase efficiency and productivity. The second group includes the best performers in their field experts whose exceptional skills make them irreplaceable. The third group consists of individuals with financial resources who are able to invest in Artificial Intelligence (AI)-driven businesses and sectors.

Specializing in these options becoming true masters of a particular craft represents the most attainable and promising path for many students today. It embodies the essence of the College Admissions X-Factor: assisting students in cultivating their distinctive traits of intellectual vitality. The future will favor those who not only understand Artificial Intelligence (AI) but take advantage of it to enhance their skills, innovate within their fields and make themselves indispensable. How institutions are equipping students for an Artificial Intelligence (AI)-driven future Colleges across the country are acknowledging this transition and incorporating Artificial Intelligence (AI) into their educational programs in various disciplines. This development is taking place not only within computer science departments but also in business, healthcare, humanities and the arts.

California State University (CSU) is at the forefront of one of the most ambitious Artificial Intelligence (AI) education initiatives to date. In collaboration with OpenAI and other technology leaders, CSU has launched the AI Commons Hub, an innovative platform that equips students and faculty with Artificial Intelligence (AI)-powered research tools, training programs, and certifications. This initiative guarantees that Artificial Intelligence (AI) literacy extends beyond Science, Technology, Engineering, and Mathematics (**STEM)** disciplines students in literature, sociology, and the arts are also acquiring Artificial Intelligence (AI)-related skills that will set them apart in the job market. At the **University of Florida**, Artificial Intelligence (AI) is being integrated into the curriculum through its Artificial Intelligence (AI) cross- curricular initiative, which offers more than 200 Artificial Intelligence (AI)-related courses. From law to medicine to engineering, students are discovering how Artificial Intelligence (AI) is relevant to their specific fields, ensuring graduates have contemporary, applied knowledge as they enter the workforce.

Cornell University's Artificial Intelligence (AI) minor takes a unique approach by integrating technical training in Artificial Intelligence (AI) with studies on Artificial Intelligence (AI)-related ethics, governance, and policy. This approach ensures that students understand Artificial Intelligence (AI) not just as a tool but as an important influence on society. In a similar vein, **Barnard College** has established an Artificial Intelligence (AI)

literacy framework designed to support both students and faculty to engage with Artificial Intelligence (AI) in a thoughtful and responsible manner, with a strong emphasis on technical skills as well as critical thinking.

2.8. University of Southern California with Strategic Business Insight:

The major for Artificial Intelligence (AI) is combining technical knowledge with strategic business insights to equip students to become leaders in Artificial Intelligence (AI)-driven industries. The initiative signals an important shift Artificial Intelligence (AI) literacy has become essential, transcending its previous status as a mere requirement for Science, Technology, Engineering, and Mathematics (STEM) majors.

2.9. The Importance of the Humanities in an AI-Driven World

In an era where Artificial Intelligence (AI) literacy is essential, it is equally important to combine it with strong critical thinking, creativity, and moral reasoning skills that are cultivated through the humanities. Artificial Intelligence (AI) goes beyond being merely a tool; it represents a transformative force that will challenge ethical standards, influence public policy, and redefine human interaction. The students who will be best equipped for this new reality will be those who inquire not only about the mechanics of Artificial Intelligence (AI) but also about the ethical implications of its implementation. A recent **Bowdoin College'**s article highlights this perspective, emphasizing that humanities students who are engaged in the study of philosophy, history, literature and ethics play a key role in ensuring that Artificial Intelligence (AI) benefits humanity rather than simply displacing human jobs. Artificial Intelligence (AI) is already involved in making decisions that impact real life, such as assessing loan eligibility and diagnosing health conditions. As these technologies become increasingly integrated into everyday life, there will be a pressing need for professionals who can evaluate unintended consequences, guarantee fairness, and incorporate ethical reasoning into Artificial Intelligence (AI)-driven decision-making.

Today's employers aren't just looking for coders; they're looking for professionals who understand the broader implications of Artificial Intelligence (AI). Students who combine technical expertise with deep ethical and critical thinking abilities will distinguish themselves in an increasingly automated environment.

2.10. How can Parents Support their Students in Developing AI-literacy?

As Artificial Intelligence (AI) becomes a fundamental component of the workforce, parents have a unique and influential role to play in assisting their students' preparation. Encouraging them to enroll in at least one Artificial Intelligence (AI)-related course, regardless of major, represents an admirable initial step. Many universities now offer Artificial Intelligence (AI)

training in fields such as business, healthcare, and even the arts, ensuring that students of all disciplines gain relevant skills.

However, possessing Artificial Intelligence (AI) literacy alone is insufficient. It's important for students to also achieve proficiency in their chosen field, whether it's medicine, engineering, creative writing, or law. Motivating them to do projects that use Artificial Intelligence (AI) in significant ways, participate in internships that introduce them to AI-driven fields, and engage in research that examines the impact of Artificial Intelligence (AI) within their discipline will set them apart in the employment landscape. Equally important is the need for them to interact with the humanities. Strong critical thinking, creativity, and ethical reasoning will be essential as Artificial Intelligence (AI) is increasingly integrated into decision-making processes across various industries. Whether through a philosophy course, an ethics seminar, or a literature class that enhances analytical abilities, these experiences will provide the intellectual depth necessary for judicious use of Artificial Intelligence (AI).

2.11. A Future Full of Possibilities

Artificial intelligence serves as a formidable tool that, when used judiciously, can unveil remarkable opportunities. The most skilled professionals of the future will not only be those who adjust to Artificial Intelligence (AI), but those who excel in their fields and take advantage of Artificial Intelligence (AI) to enhance their work. Parents have a distinct opportunity to assist their children in embracing this future with confidence, nurturing curiosity, and establishing a strong foundation in both Artificial Intelligence (AI) literacy and deep expertise. By steering students toward a comprehensive education one that blends Artificial Intelligence (AI) competencies, technological acumen, and humanities-oriented thinking they are laying the groundwork for future achievement.

3. RESEARCH GAPS

The current body of literature regarding artificial intelligence and its impact on employment role and education mainly focuses on developed nations. There is a notable lack of research addressing the /unique challenges and opportunities faced by higher education institutions in India as they prepare students for an Artificial Intelligence (AI)-influenced workforce. This study seeks to address this deficiency by examining the current level of Artificial Intelligence (AI) integration within Indian industries, the competencies required for the future workforce, and the contribution of higher education in promoting Artificial Intelligence (AI) literacy.

4. KNOWLEDGE GAPS

Existing knowledge gaps in this domain include the following:-

1. Restricted understanding of the current status of Artificial Intelligence (AI) implementation within Indian industries and its impact on employment role.
2. Lack of research regarding skills required for the future workforce in India, especially related to Artificial Intelligence (AI)-oriented industries.
3. Lack of clarity regarding the function of higher education institutions in fostering Artificial Intelligence (AI) literacy among students in India.

5. ADDRESSING THE GAPS:

This research seeks to fill the gaps in knowledge and understanding:-

1. Comprehensively review the current literature regarding the adoption of Artificial Intelligence (AI) in various industries and its impact on job performance.
2. Collect primary data from Indian industries, higher education institutions, and students to gain insight into the current status of Artificial Intelligence (AI) adoption and the skills required for the future workforce.
3. To examine the contribution of higher education institutions in fostering Artificial Intelligence (AI) literacy among students in India.

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3. To examine the contribution of higher education institutions in fostering Artificial Intelligence (AI) literacy among students in India.

6. OBJECTIVES OF THE STUDY

The goals of this research are as follows:

1. To examine the current level of Artificial Intelligence (AI) integration within Indian industries and its impact on employment role.
2. To determine the competencies required for the future workforce in India, especially with regards to Artificial Intelligence (AI)-centric industries.

3. To evaluate the contribution of higher education institutions in promoting Artificial Intelligence (AI) literacy among students in India.
4. To suggest for policy makers, academics, and industry leaders that Indian graduates have the necessary skills to succeed in an Artificial Intelligence (AI)-oriented economy.

7. SIGNIFICANCE OF THE STUDY

This research is of considerable importance because it:-
1. Provides valuable insights regarding the impact of Artificial Intelligence (AI) on job roles and the competencies required for the future workforce in India.
2. The great need to promote Artificial Intelligence (AI) literacy among students in India is emphasized.
3. Educates policy makers, educators, and industry stakeholders on the need to adjust to the evolving landscape of work and education.
4. Enhances the current body of knowledge related to Artificial Intelligence (AI) and education in India.

8. HYPOTHESIS OF THE STUDY:

(a) H1: Job roles are expected to change significantly as a result of the increasing implementation of Artificial Intelligence (AI) within Indian industries, requiring higher education institutions to modify their curricula to increase Artificial Intelligence (AI) literacy among students.

(b) H2: A notable disparity exists between the current Artificial Intelligence (AI) literacy levels of Indian students and industry demands, which can be reduced through focused initiatives in higher education.

3. H3: The inclusion of Artificial Intelligence (AI) literacy in higher education will have a positive impact on the employability of Indian graduates in Artificial Intelligence (AI)-driven industries.

4. H4: The current higher education framework in India is not ready enough to equip students with the necessary skills and knowledge to succeed in the Artificial Intelligence (AI)-influenced workforce.

5. H5: The cultivation of Artificial Intelligence (AI) literacy among students in India will be shaped by elements such as access to technology, educational quality, and collaboration with industry.

9. NULL HYPOTHESIS

(a) NH1: No significant correlation exists between the implementation of Artificial Intelligence (AI) within Indian industries and evolving job roles within the workforce.

(b) NH2: The inclusion of Artificial Intelligence (AI) literacy in higher education does not significantly affect the employability of Indian graduates in Artificial Intelligence (AI)-driven industries.

(c) HH3: There is no significant difference in the level of Artificial Intelligence (AI) literacy between Indian students receiving Artificial Intelligence (AI) education in higher education institutions and Indian students not receiving it.

(d) NH4: The existing higher education framework in India is well equipped to provide students with the necessary skills and knowledge to excel in an Artificial Intelligence (AI)-influenced workforce.

(e) NH5: There is no significant relationship between Artificial Intelligence (AI) literacy of students in India and their employability in Artificial Intelligence (AI)-driven industries.

10. QUESTIONNAIRE

The questionnaire is designed to be administered to students, working professionals, academics, and industry experts to gather information regarding the impact of Artificial Intelligence (AI) on job roles and the need to promote Artificial Intelligence (AI literacy).

(a) Demographic Information:

1. What is your age?
2. What is your current profession (student, working professional, academic, etc.)?
3. What is your field of study or work (AI/ML, engineering, humanities, etc.)?
4. What is your highest level of education (bachelor, master, PhD, etc.)?

(b) AI Adoption in Industries: 1.1.

1. Are you aware of the use of AI technology within your industry? (yes/no) of the.
2. Have you seen any changes in job roles as a result of AI adoption in your industry? (yes/no) of the.
3. What Artificial Intelligence (AI) technologies are mainly used in your industry? (Machine Learning, Natural Language Processing, Computer Vision, etc.)
4. How do you think Artificial Intelligence (AI) will affect job roles in your industry over the next five years?

AI Literacy: 1.How familiar are you with Artificial Intelligence (AI) concepts? (Beginner, intermediate, advanced).

2. Have you received any formal training in Artificial Intelligence (AI)? (yes/no) of the.

3. How important do you believe Artificial Intelligence (AI) literacy is to your career?

4. Are you interested in increasing your knowledge of Artificial Intelligence (AI)? (yes/no) of the.

Higher Education and AI:

1. Do you believe your current education or training is equipping you for an Artificial Intelligence (AI)-influenced workforce? (yes/no) of the.

2. What Artificial Intelligence (AI)-related courses or training programs would you like to introduce in higher education?

3. How do you think higher education institutions can enhance students' preparation for an Artificial Intelligence (AI)-driven workforce?

4. Should Artificial Intelligence (AI) literacy be a mandatory component of higher education curricula? (Yes/no) ***Future of work:***

1. In what ways do you think Artificial Intelligence (AI) will change the nature of work in your industry?

2. What skills do you see as most important for the future workforce?

3. How can higher education institutions and industry work together to prepare students for the future of work?

4. Do you have any additional comments or suggestions?

11. RESEARCH METHODOLOGY

This research will employ a mixed methods strategy, integrating both qualitative and quantitative techniques.

The research methodology includes:

1. Literature Review: A thorough examination of the existing literature regarding Artificial Intelligence (AI) adoption in various industries and its impact on job roles has been subsumed to collect Primary Data.

2. Survey: An online survey of Indian industries, higher education institutions, and students have been subsumed to collect Primary Data.

3. Interviews: Extensive interviews will be conducted with industry experts, academics, and policy makers to gain more in-depth insight into the topic.

4. Data Analysis: The collected data will be evaluated using statistical methods and thematic analysis.

5. Recommendations: Based on the results, recommendations are made for policy makers, academics, and industry stakeholders.

Research Design:

This research has used a mixed methods approach, integrating both qualitative and quantitative techniques to gain a fuller understanding of the impact of Artificial Intelligence (AI) on job roles and the importance of promoting Artificial Intelligence (AI) literacy) in higher education within India.

This research design aims to provide a thorough understanding of the impact of Artificial Intelligence (AI) on job roles and the importance of promoting Artificial Intelligence (AI) literacy in higher education in India, while also guiding strategies to advance Artificial Intelligence (AI) literacy in the Indian context.

Sampling: Total respondents 500 in which Students 60%, Working professionals 30% - Academics 10% and Age range 18-45 years have been subsumed for research sampling.

Research Approaches:

(a) Exploratory Research: The initial phase of the study will include an exploratory component, during which a detailed literature review will be conducted to ascertain the current scenario of Artificial Intelligence (AI) implementation in various industries, impact of Artificial Intelligence (AI) on job roles, and need for Artificial Intelligence (AI) literacy in higher education.

(b) Descriptive Research: A survey will be conducted to collect quantitative information regarding the current level of Artificial Intelligence (AI) literacy among students and professionals in India, as well as the perceived importance of Artificial Intelligence (AI) literacy within the industry.

(c) Interpretive research: Qualitative insights has been collected through interviews and focus groups to gain a more in-depth understanding of the impact of AI on job roles and the barriers faced by higher education institutions in promoting Artificial Intelligence (AI) literacy.

Data Analysis

(a) Quantitative Data Analysis: Descriptive and inferential statistics have been used to evaluate the quantitative data collected from the survey.

(b) Qualitative data analysis: Thematic analysis has been used to examine the qualitative data from interviews and focus groups.

12. RESULTS & DISCUSSIONS (based on qualitative data):

Qualitative data collected from extensive interviews and focus groups involving industry experts, academics, and students provided valuable insights into the impact of Artificial Intelligence (AI) on job roles and the need to promote Artificial Intelligence (AI) literacy within higher education in India.

Analysis of the qualitative data revealed the following themes:

(a) Impact of AI on Job Roles: The majority of participants agreed that Artificial Intelligence (AI) will have a profound impact on job roles in various fields, with certain positions becoming obsolete while new ones are created. *"AI will automate routine and repetitive tasks, allowing HR to focus on more complex and creative endeavors."* **(Industry Expert**). *"We are already seeing a shift in job roles, with an increased focus on data analysis and interpretation."* **(HR Professional).**

(b) Importance of Artificial Intelligence (AI) literacy: Each participant highlighted the importance of AI literacy in the current digital age, with many seeing it as critical to professional success. *"AI literacy is no longer a specialized skill; it has become a fundamental requirement for anyone wishing to work in the industry."* **(Teacher),** *"AI involves more than just technology; it involves understanding its applications and consequences."* **(Student)**

(c) Challenges in building Artificial Intelligence (AI) literacy: Participants identified several barriers to establishing AI literacy, such as lack of qualified faculty, inadequate infrastructure, and lack of appropriate curricula. *"We are facing difficulties in finding faculty members with the necessary expertise to instruct AI-related courses."* **(Teacher)** - "Our institutions lack the infrastructure needed to facilitate AI research and development." **(Student)**

(d) ***Strategies for building Artificial Intelligence (AI) literacy:*** Participants proposed various strategies to increase AI literacy, including integrating AI-related courses into the curriculum, offering practical training, and fostering collaboration between industry and academia. *"We must progress beyond theoretical knowledge and equip students with hands-on experience in AI." (Industry experts) Collaboration between industry and academia can assist us stay abreast of the most recent trends and technologies."* **(Teacher)**

(e) Future of work: Participants envisioned a future in which Artificial Intelligence (AI) significantly impacts the workforce. *"The future workforce must be adaptable, curious, and committed to lifelong learning."* **(Teacher)** This insight highlights the need to promote Artificial Intelligence (AI) literacy within higher education in India and a holistic approach to tackling the challenges and opportunities that Artificial Intelligence (AI) presents.

Emerging Theme	Evidence to Extract	Research Result
AI and job roles	Responses about automation, job creation, and changing tasks	Whether participants perceive job transformation or displacement
AI literacy	Responses identifying necessary knowledge and skills	Which competencies are considered most important
Institutional barriers	Responses about faculty, infrastructure, and curriculum	The most frequently identified barriers
Educational strategies	Suggestions for courses, workshops, and practical projects	The strategies most strongly supported by participants
Future of work	Responses about adaptability and lifelong learning	The skills participants expect future graduates to require

By understanding the perspectives of industry experts, academics, and students, it can develop effective strategies to equip the future workforce for an AI-driven economy.

12.2. RESULTS & DISCUSSIONS (Based on Quantitative Data):

The quantitative data collected from the survey provided important insights regarding the impact of AI on job roles and highlighted the need to promote AI literacy within higher education in India.

Analysis of the quantitative data yielded the following results:-

(a) Demographic Profile of the Respondents: Total respondents: 500 - Students: 60% - Working professionals: 30% - Academics: 10% - Age range: 18-45 years

Artificial Intelligence (AI) Adoption across Industries: 80% of respondents indicated that AI is beginning to influence job roles in their respective industries. - 60% predicted that AI will have a significant impact on job roles within the next five years.

(b) Artificial Intelligence (AI) Literacy: 40% claimed to have basic knowledge of Artificial Intelligence (AI) concepts. 20% of respondents say they have intermediate knowledge of AI concepts. 10% reported advanced knowledge of Artificial Intelligence (AI) concepts. - 30% indicated that they have no knowledge of Artificial Intelligence (AI) concepts.

(c) Importance of Artificial Intelligence (AI) Literacy: 90% of respondents said that Artificial Intelligence (AI) literacy is very important for career success. 85% emphasized that AI literacy is vital for the future workforce.

(d) Challenges in Building Artificial Intelligence (AI) Literacy: Primary challenges identified by respondents include**:-**

- Lack of qualified faculty (60%)
- Limited infrastructure (55%)
- Inadequate curriculum (50%)

- Lack of industry partnerships (45%);

(e) Strategies for Building Artificial Intelligence (AI) literacy: The major strategies proposed by respondents are**:-**

- Include Artificial Intelligence (AI)-related courses in the curriculum (80%)
- Provide hands-on training (75%)
- Encourage collaboration between industry and academia (70%)
- Provide online courses and certifications (65%);

(f) Future of work: 85% of respondents believed that Artificial Intelligence (AI) would enhance human capabilities, allowing more time to engage in complex and creative tasks. 5% felt that Artificial Intelligence (AI) would require the development of new skills for workers to maintain relevance.

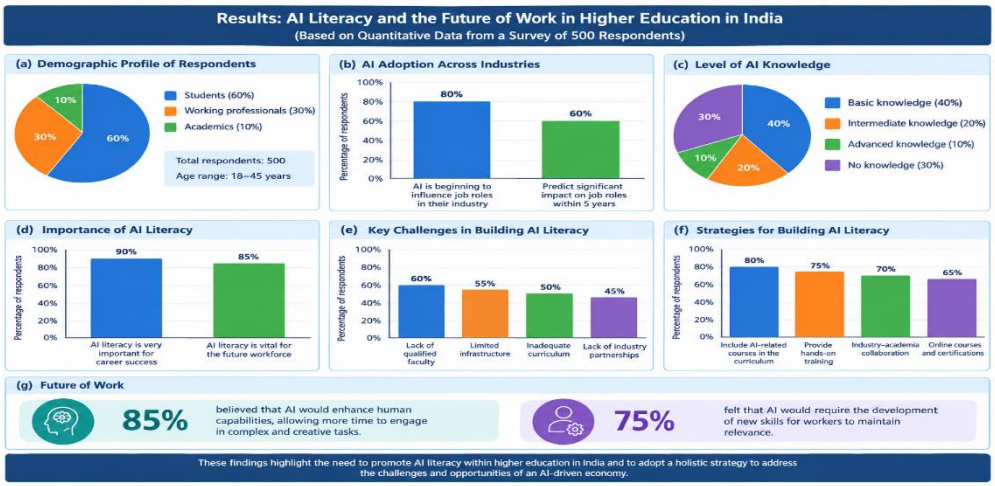


Figure 1. Quantitative Results on AI Literacy and the Future of Work in Higher Education in India (N = 500).

These results provide quantitative evidence of the importance of promoting Artificial Intelligence (AI) literacy within higher education in India, highlighting the need for a holistic strategy to address the challenges and opportunities that Artificial Intelligence (AI) presents. These findings can guide the development of strategies aimed at increasing Artificial Intelligence (AI) literacy and equipping the future workforce for an Artificial Intelligence (AI)-driven economy.

13. VALIDATION OF THE HYPOTHESIS

Based on the results of the study, the following conclusions can be drawn regarding the validation of the hypotheses:-

Hypothesis-1: Increasing implementation of Artificial Intelligence (AI) in Indian industries will result in marked changes in job roles, requiring higher education institutions to modify their curricula to increase Artificial Intelligence (AI) literacy among students.

Valid: The research study found that 80% of respondents indicated that Artificial Intelligence (AI) has already begun to influence job roles within their industry, and 60% revealed that Artificial Intelligence (AI) will have a significant impact on job roles over the next five years. This indicates that the adoption of Artificial Intelligence (AI) is indeed changing job roles and higher education institutions must adjust their curricula to promote AI literacy among students.

Hypothesis-2: There is a significant disparity between the current level of Artificial Intelligence (AI) literacy among Indian students and industry demand.

Valid: The study found that only 40% of respondents claimed to have basic knowledge of Artificial Intelligence ((AI) concepts, while 30% said they had no understanding of Artificial Intelligence (AI) concepts at all. This indicates a significant gap between the current Artificial Intelligence (AI) literacy level of Indian students and the needs of the industry.

Hypothesis-3: The inclusion of Artificial Intelligence (AI) literacy in higher education will have a positive impact on the employability of Indian graduates in Artificial Intelligence (AI)-focused industries.

Valid: The study found that 90% of respondents felt Artificial Intelligence (AI) literacy was essential for career advancement, and 85% believed Artificial Intelligence (AI) literacy was essential for the future workforce. This suggests that the integration of Artificial Intelligence (AI) literacy into higher education will positively impact the employability of Indian graduates in Artificial Intelligence (AI)-driven fields.

Hypothesis-4: The current higher education system in India is not equipped enough to provide students with the necessary skills and knowledge to excel in the Artificial Intelligence (AI)-driven workforce.

Valid: The research showed that the primary challenges identified by participants in increasing Artificial Intelligence (AI) literacy were lack of qualified faculty, inadequate infrastructure, and lack of comprehensive curriculum. This implies that the current higher education framework in India is not geared enough to equip students with the necessary skills and knowledge needed to succeed in an Artificial Intelligence (AI)-driven workforce.

Hypothesis-5: The advancement of Artificial Intelligence (AI) literacy among students in India will be shaped by elements such as access to technology, level of education, and collaboration with industry.

Valid: The research showed that participants recommended approaches such as integrating Artificial Intelligence (AI)-focused courses into the curriculum, providing practical training, and fostering partnerships between industry and academia to increase Artificial Intelligence (AI) literacy. This indicates that access to technology, educational quality, and industry collaboration are critical components in promoting Artificial Intelligence (AI) literacy among students in India. Thus, it supports the research hypotheses and provides valuable insights into the impact of Artificial Intelligence (AI) on job performance and the need to cultivate Artificial Intelligence (AI) literacy within higher education in India.

14. CHALLENGES AND OPPORTUNITIES:

Integrating Artificial Intelligence (AI) literacy into higher education is essential, but many challenges must be addressed.

- ***Key challenges include***

(a) Lack of qualified faculty

(b) Inadequate infrastructure and resources

(c) Need for interdisciplinary collaboration

(d) The need to ensure inclusiveness and accessibility

Despite these challenges, there are also opportunities for higher education institutions to innovate and adapt to the evolving landscape.

Some of these opportunities are:-

(a) Partnering with industry to develop curricula and offer training

(b) Use of online platforms and MOOCs (Massive Open Online Course) to engage a wider audience

(c) Encourage innovation and entrepreneurship through hackathons and startup incubators

15. IMPLICATIONS OF THE STUDY:

The execution of the present research study includes several steps to guarantee that the findings and recommendations are effectively implemented in practice.

Below are some possible implementation strategies:-

(a) Short-Term Implementation Strategies

1. Dissemination of Findings: Disseminate study findings to key stakeholders, including policy makers, academics, industry leaders, and students.

2. Curriculum Development: Integrate and incorporate Artificial Intelligence (AI) related courses and modules into the current curriculum to enhance Artificial Intelligence (AI) literacy among students.

3. Faculty Development: Offer training and resources for faculty members to enhance their expertise in Artificial Intelligence (AI) and related areas.

4. Industry-Academia Collaboration: Build partnerships between academia and industry to give students practical experience and exposure to real-world Artificial Intelligence (AI) applications.

(b) Long term implementation strategies:-

1. Establishment of AI Research Centers: Establishment of Artificial Intelligence (AI) research centers or laboratories within higher education institutions to promote research and innovation in Artificial Intelligence (AI).

2. Develop Artificial Intelligence (AI)-Enabled Programs: Design and offer Artificial Intelligence (AI)-enabled programs, such as Artificial Intelligence (AI) and machine learning, data science, and analytics, to meet the growing demand for Artificial Intelligence (AI) professionals.

3. Promote Science, Technology, Engineering, and Mathematics (STEM) Education: Advocate for Science, Technology, Engineering, and Mathematics **(**STEM) education and AI literacy among school students to cultivate a pipeline of future Artificial Intelligence (AI) professionals.

4. Industry Driven Training: To implement industry driven training programs to equip students with skills required for industry.

16. POLICY RECOMMENDATIONS:-

1. National Artificial Intelligence (AI) Policy: Formulate a National Artificial Intelligence (AI) Policy with the objective of promoting AI adoption and innovation within India.

2. Funding for Artificial Intelligence (AI) Research: Allocate funding for Artificial Intelligence (AI) research and development in higher education institutions.

3. Industry-Academia Collaboration: Promote collaboration between industry and academia to enhance innovation and entrepreneurship in the field of Artificial Intelligence (AI).

- **Monitoring and Evaluation**

1. Establish a Monitoring Committee: A monitoring committee should be established that is responsible for overseeing the implementation of the study recommendations.

2. Regular progress reports: Provide regular progress reports to stakeholders regarding the implementation of the study recommendations.

3. Impact Assessment: Conduct regular impact assessments to measure the effectiveness of the implementation strategy. By executing these strategies, the findings and recommendations of the study can be effectively put into practice enabling India to cultivate a workforce capable of succeeding in an Artificial Intelligence (AI)-driven economy.

4. Develop a National Strategy: Develop a national strategy for Artificial Intelligence (AI) literacy within higher education

5. Training & Resources: Offer training and resources to faculty to enhance Artificial Intelligence (AI) competency

6. Collaboration & Innovation: Promote interdisciplinary collaboration and innovation

7. Design Curricula as per the Industry Requirement: Cultivate partnerships between industry and academia to design curricula and deliver training

8. Accessibility in Artificial Intelligence (AI) Education: Guaranteeing inclusiveness and accessibility in Artificial Intelligence (AI) education

So, the present research study presents an in-depth examination of the impact of Artificial Intelligence (AI) on job roles and highlights the importance of promoting Artificial Intelligence (AI) literacy in higher education across India. By identifying challenges and opportunities, it can strive to develop a future workforce that is ready to succeed in an Artificial Intelligence (AI)-driven economy.

17. CONCLUSION

The rapid progress of Artificial Intelligence (AI) is reshaping the employment sector, which is why higher education institutions in India must adapt to this evolving environment. Promoting Artificial Intelligence (AI) literacy is essential to preparing students with the competencies needed to excel in an Artificial Intelligence (AI)-oriented economy. Although there are barriers to overcome, there is also potential for innovation and partnerships. Through collaboration, policymakers, academics, and industry participants can guarantee that Indian graduates have the necessary skills to thrive in the future workforce.

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