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VISION VIKSIT BHARAT 2047

EDUCATION 4.0

Enhancing India's Workforce for the AI-Powered Future

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VOLUME- I

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PREFACE

The 21st century has heralded a transformative shift in global dynamics, driven by rapid advancements in technology and the emergence of Industry 4.0. At its heart lies artificial intelligence (AI), robotics, big data, and automation, redefining the way we live, work, and learn. India, standing at the cusp of this technological revolution, has an unprecedented opportunity to align its aspirations with global progress through the visionary framework of "Vision Viksit Bharat 2047." As the nation envisions becoming a developed and self-reliant power by its centenary year of independence, the role of education in nurturing a future-ready workforce becomes paramount. Education 4.0, a forward-thinking approach to learning, seeks to bridge the gap between traditional education and the demands of an AI-powered economy, ensuring that India's vast demographic dividend is effectively utilized to achieve this ambitious goal.

The concept of Education 4.0 emphasizes an adaptive, personalized, and technology-driven learning ecosystem. It integrates cutting-edge tools like AI, machine learning, and immersive technologies to foster creativity, critical thinking, and problem-solving skills among learners. By reimagining education as a dynamic and continuous process, it aims to prepare individuals to excel in roles that demand not only technical expertise but also emotional intelligence, cultural sensitivity, and ethical judgment. This transformation is essential for India to stay competitive in a global market increasingly shaped by digital innovation. Moreover, as the world turns toward sustainable and inclusive development, Education 4.0 also promotes equity by democratizing access to quality learning resources. This preface underscores the significance of aligning education reforms with national and global priorities, setting the stage for India to emerge as a leader in the AI-driven future while ensuring social and economic prosperity for all.

The book is the outcome of the papers presented in the one Day National Level Seminar on "VISION VIKSIT BHARAT 2047 EDUCATION 4.0 ENHANCING INDIA'S WORKFORCE FOR THE AI-POWERED FUTURE-" sponsored by Indian Council of Social Science Research- Southern Regional Centre, Hyderabad held on 24th January 2025 organised by the Department of Commerce with Business Process Services, Nallamuthu Gounder Mahalingam College, Pollachi . A spectrum of different subjects covered at the seminar are included in this book. In chapters that are contextualized in contemporary Education 4.0, a number of authors have provided reliable and meaningful chapters. Beyond educators and students, there are other national policymakers who could benefit from this initiative. We express our gratitude to the Indian Council of Social Science Research-- Southern Regional Centre, Hyderabad for their Sponsorship to organize the national level seminar. We also thank the authors who whole heartedly contributed chapters to the book.

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BRIDGING THE SKILLS GAP: RESKILLING AND UPSKILLING INDIA'S WORKFORCE FOR THE AI REVOLUTION

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Abstract
Artificial Intelligence (AI) is rapidly changing businesses all over the world, including India, where a sizable and youthful workforce presents both potential and difficulties. In order to fully utilize AI and robotics, India needs to solve the expandingdisparity in skills between its workforce's capabilities and the needs of AI-driven industries.In order to prepare for the AI revolution, this essay examines the necessity of reskilling and upskilling India's workforce. While upskilling improves workers' current abilities to adjust to new technology, reskilling teaches them new skills to move into roles that AI and automation have created. Notwithstanding the possible obstacles to growing these initiatives, including financial constraints, accessibility issues, and the requirement for ongoing education, the paper highlights the significance of developing a strong ecosystem of governmental regulations, business endeavors, and reforms in education. India can fully utilize AI by closing the skills gap and guaranteeing that its workforce is prepared to prosper in the digital economy and support global AI leadership.
Keywords: *Artificial Intelligence, Reskilling, business,Digital*

Introduction

Artificial Intelligence (AI) is at the forefront of economic and societal change due to the speed at which technology is developing. In India, where a growing number of youthful workers presents both enormous opportunities and difficulties, using AI into numerous industries offer enormous potential. But only if India can close the widening skills gap between the present level of workforce abilities and the demand for workers prepared for AI will this promise become a reality. India has a rare chance to lead the world in AI-driven businesses thanks to its population advantage. However, the workforce needs to be adequately retrained and upskilled to meet the demands of automation and artificial intelligence if the entire promise of this technological revolution is to be realized. An organization's success now depends heavily on artificial intelligence. Through process simplification, increased operational effectiveness, repetitive task automation, and

improved decision-making, it has completely changed how firms operate. It is now a requirement to succeed in the digital sphere rather than an extra advantage. By giving organizations a major competitive advantage in the market, it has emerged as a crucial factor in guaranteeing long-term organizational expansion. AI's role in workforce upskilling is now changing quickly. By 2030, it's predicted that more than one billion employment would have changed due to technological improvements. By 2025, half of the world's workforce will require professional retraining, according to the World Economic Forum. Regretfully, 92% of managers believe they are ill-equipped to deal with the digitization of work and develop talent capable of handling these impending changes. Employers need to concentrate on reskilling and upskilling their employees if they want to stay ahead. Training that enhances or expands on an employee's present skill set to help them perform better in their current role is known as upskilling. Companies must use skills intelligence tools, conduct skills audits, and forecast future needs in order to detect and narrow skill gaps and successfully up skill and reskill employees. They may prepare their workers to prosper in the AI era by doing this.

The Objectives of AI in Upskilling the Workforce are as Follows

- Equip employees with the necessary skills to work alongside AI-powered tools and machines, ensuring that they can effectively collaborate and contribute to the success of the organization.
- Prepare employees for the changing workplace dynamics, where many routine tasks will be automated, and higher-order thinking tasks will become more critical.
- Enable employees to work on more complex and challenging projects, leveraging AI-powered tools to streamline their work and increase productivity.
- Empower employees to make data-driven decisions, using AI-powered analytics and insights to inform their work and improve outcomes.
- Foster a culture of continuous learning and development, where employees are encouraged to upskill and reskill regularly to stay relevant and competitive in the job market.
- Ensure that employees are well-versed in the ethical and responsible use of AI, promoting transparency, fairness, and accountability in the workplace.

Bridging the Skill Gap

For future workers, being able to collaborate with AI efficiently will be essential. Furthermore, the creativity and problem-solving abilities required to pilot this changing environment will be matched by generative technology such as AI-powered design tools. The World Economic Forum and Confederation of Indian Industry (CII) released another intriguing analysis that emphasizes the need for up skilling programs by estimating that India may have a skill deficit of 23 million by 2030. In addition, an analysis by Team Lease Degree Apprenticeship shows that more than 80% of Indian businesses are actively seeking

to upskill their employees to satisfy the expectations of the digital era. Some policies need to be put into place in order to close this skill gap and guarantee that India's workforce is ready for the future. Through funding, the creation of skill development frameworks, and partnerships with the corporate sector, the government will be instrumental in advancing upskilling projects. In order to assess present and future skill needs and create the appropriate curriculum, educational institutions and training providers must collaborate closely with companies as part of their future planning. A culture of lifelong learning must also be promoted for individuals in order to sustain skill improvement over the course of their careers. In the end, it is up to the individual to upskill. Employees need to be proactive in seeking out learning opportunities and recognizing skill shortages in the system. According to studies, up skilling investments might boost India's GDP by $570 billion by 2030.

AI-Skills Gap for the Future

An organization's success now depends heavily on artificial intelligence. Through process simplification, increased operational effectiveness, repetitive task automation, and improved decision-making, it has completely changed how firms operate. It is now a requirement to succeed in the digital sphere rather than an extra advantage. By giving organizations a major competitive advantage in the market, it has emerged as a crucial factor in guaranteeing long-term organizational expansion. Therefore, it becomes essential for organizations to develop and implement artificial intelligence systems and include AI into their overall business objectives. However, only a competent workforce capable of utilizing AI to its fullest extent can guarantee that this becomes a reality. The demand for qualified Indian AI professionals is expected to increase exponentially from 600,000–650,000 to over 1,250,000 during 2022–2027, according to a report by Deloitte India and Nasscom titled "Advancing India's AI Skills: Interventions and programs needed." However, the poor demand-supply gap indicates a major concern. A major obstacle is the lack of qualified personnel, which can impede technological improvement, restrict innovation, slow down expansion, and raise ethical concerns All organizational positions, at all levels, need to be trained in new AI and automation skills and competences. Leadership and management share responsibilities for skill development and progress. It is up to us as a group to influence the nature of work in the future. The responsibility will naturally flow from the top to the bottom when leaders take the initiative to drive change. Timely filling of the AI skill gap is necessary. Now is the moment to take action. According to a survey, managers are 3.1% more likely to replace staff members with AI-ready new hires than to retain and retrain current staff members.

Challenges in Bridging the Skills Gap: Reskilling and Up Skilling India's Workforce for the AI Revolution

There are a number of issues that need to be handled comprehensively in order to close the skills gap in India for the AI revolution. First, the preparedness of graduates is limited by the fact that many educational institutions struggle with out-of-date curricula that lack

hands-on training in AI and related subjects. Access to resources is still a major obstacle as well; people in underserved urban and rural areas frequently experience a digital gap, which is made worse by the high expense of reskilling programs. Limited internship options limit practical experience, and a lack of industry collaboration results in a mismatch between the skills taught and those needed in the workforce. Additionally, as many prospective students are ignorant about AI options or reluctant to leave traditional employment, there is an urgent need for awareness and incentive. High-quality training courses. The quality of training programs varies greatly, is frequently not standardized, and there is a lack of competent teachers to teach complex ideas. Establishing a culture of lifelong learning will promote lifetime learning, while encouraging skill development requires explicit legislation and supportive government policies. Effective reskilling requires programs to be tailored to the workforce's varied needs, from novices to experts. India can prepare its workforce to prosper in the quickly changing AI landscape by tackling these interrelated issues.

Conclusion

The future of learning in the AI age demands a collaborative effort to bridge the reskilling gap, ensure equitable access to education, and adapt educational models for a rapidly evolving world. This is not just about acquiring technical expertise, but fostering a culture of lifelong learning, collaboration, and a shared vision for a better future. By embracing this learning renaissance, we can empower individuals and businesses to thrive in the AI age.The future of AI in upskilling the workforce involves a shared responsibility among companies, individual workers, and society as a whole. Companies must invest in upskilling and reskilling programs, while workers should embrace lifelong learning and continuous adaptation.

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