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Redefining Talent: Perceptions Of Soft And Technical Skills In An Ai Driven Workplace

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ABSTRACT
Artificial Intelligence (AI) is transforming the world of work, changing not only job roles but also the skills people need to stay employable and grow in their careers. This study explores how today's workforce views the importance of technical skills versus soft skills in the age of AI. To gather insights, we surveyed 100 employees from different industries in Coimbatore where AI is already part of their daily work. The results, analyzed using simple percentages and ranking methods in Microsoft Excel, show that while technical abilities like data literacy, programming, and AI tool usage are highly valued, soft skills such as adaptability, communication, and critical thinking remain equally essential for long-term career success. Respondents largely preferred a balanced skill set often described as "T- shaped" combining deep technical expertise with broad human-centered capabilities. At the same time, factors such as high costs, lack of time, and limited training opportunities continue to make upskilling difficult. The study underlines the importance of joint efforts between employers, educators, and policymakers to create affordable and inclusive learning opportunities, helping workers remain adaptable, resilient, and prepared for an AI-driven future..
Keywords: Artificial Intelligence (AI), Workforce Priorities, Soft Skills, Technical Competencies, Employability, Lifelong Learning, Upskilling, Future of Work,
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1. INTRODUCTION:

Artificial Intelligence (AI) is reshaping the global workforce, altering job roles and redefining the skills employees must develop to remain competitive. The World Economic Forum's Future of Jobs Report (2023) predicts that nearly 44% of current skills will be disrupted within the next five years, underscoring the urgency of strengthening both technical and soft skills. Technical competencies such as programming, data analysis, and AI literacy enable workers to operate advanced technologies, while soft skills like adaptability, communication, problem-solving, and emotional intelligence help them collaborate effectively and adjust to rapid changes in the workplace. This combination has fueled an ongoing debate about which set of skills should take priority in an AI-driven economy.

At the same time, perspectives differ across industries, job roles, and demographic groups. For instance, LinkedIn's Global Talent Trends Report (2023) notes that 92% of employers place soft skills on par with or above technical expertise, while 67% of employees view technical upskilling as critical for career advancement. These contrasting perceptions highlight the uncertainty, challenges, and support systems shaping how workers and organizations adapt to AI. Against this backdrop, the present study investigates how professionals across diverse sectors perceive the relative importance of soft and technical skills, aiming to inform strategies that promote adaptability, employability, and sustainable career growth in an AI-dominated future.

2.STATEMENT OF THE PROBLEM

The rapid spread of Artificial Intelligence (AI) is reshaping workforce demands, yet uncertainty persists over which skills should be prioritized. Employees remain divided between investing in technical skills like AI literacy, data analytics, and automation or strengthening soft skills such as adaptability, communication, creativity, and problem-solving. This dilemma is intensified by fears of redundancy and unclear training pathways. Employers, while acknowledging the need for both, struggle to balance training investments with workforce expectations. At the organizational and industry level, this misalignment risks widening skill gaps, reducing productivity, and weakening competitiveness, leaving both employees and organizations unprepared for the AI era.

3.OBJECTIVES OF THE STUDY

1.To explore the supportive factors and challenges prevalent in various job descriptions with the advent of AI.

2.To analyse workforce perceptions of the relative importance of the soft skills and technical skills in the AI era, across various demographic and occupational groups

4.REVIEW OF LITERATURE

- Karimi and Piña (2021) look at the growing gap in soft skills among STEM undergraduates. They point out important abilities like teamwork, leadership, emotional intelligence, problem- solving, and communication. Their qualitative research shows that employers are worried recent graduates do not have these skills, with leadership and human connection being the most important. They suggest that higher education institutions and employers work closely together to design curricula, raise awareness, and create strategies that improve job readiness and close the soft skills gap nationwide.
- Poláková et al. (2023) examine the need for soft skills in the context of Industry 5.0. By analyzing job postings from 19,000 organizations, they show a strong demand for critical thinking, problem-solving, creativity, flexibility, and communication, in addition to digital skills. Their findings underscore that human-centered skills, such as emotional intelligence and resilience, remain vital, stressing the importance of developing both digital and soft skills to succeed in a technology-driven economy.
- Johnson (2024) investigates how work-based learning (WBL) helps prepare students with skills needed for the Fourth Industrial Revolution. Interviews with education and industry stakeholders reveal that WBL boosts both technical and soft skills, including adaptability, collaboration, and communication. The research highlights the need to include internships, co-ops, and apprenticeships in the curriculum, along with stronger industry partnerships, to connect education with workforce needs.
- Ciaschi and Barone (2024) explore how artificial intelligence can assess soft skills, which are often hard to measure due to their subjective and context-specific nature. Their study shows that AI can analyze communication and behavior data for objective evaluations, improving recruitment, performance reviews, and training. However, they warn about issues like algorithmic bias, privacy concerns, and the difficulty of capturing complex human interactions. They call for ethical oversight and mixed human-AI assessment models.
- Babashahi et al. (2024) conduct a systematic review of how AI is changing workforce skills in various industries. The study identifies key skill changes due to AI use, particularly in adaptability, ongoing learning, and technical skills, along with interpersonal skills. It highlights the need for proactive education, continuous skill development, and ethical integration strategies to balance technology's impact with human capabilities in the workplace.

5. METHODOLOGY OF THE STUDY

The study is an exploratory study. The researchers have attempted to examine the upskilling priorities of employees of various sectors in Coimbatore. This study adopted a descriptive survey design to investigate workforce priorities in the AI era, focusing on the comparative significance of soft skills and technical competencies. Primary data were collected using a structured questionnaire administered to 100 employees across diverse sectors in Coimbatore where artificial intelligence forms part of their occupational roles, while secondary data were sourced from scholarly publications, industry reports, and policy documents to provide contextual grounding. Respondents were selected through purposive sampling to ensure inclusion of individuals with demonstrable exposure to AI- enabled systems and tools. The instrument encompassed demographic and occupational details, measures of AI usage, and items assessing perceptions of key skill domains, including soft skills such as communication, adaptability, creativity, and leadership, alongside technical competencies such as data literacy, programming knowledge, and AI tool proficiency. Responses were coded and analyzed using Microsoft Excel, with descriptive statistical techniques such as simple percentage analysis and ranking methods employed to interpret patterns of perception. The findings were further supported through the use of graphical representations, including charts and graphs, to facilitate clear and systematic presentation of results

6.RESULTS AND DISCUSSION

Table 1: Demographic Profile of the Respondents

Factor	**No. of respondents**	**Percentage**
Age (years)		
18-24	43	43
25-34	34	34
35-44	14	14
45-54	9	9
Above 55	4	4
Total	**100**	**100**
Highest Education level		
School	4	4
UG	54	54
PG	30	30
Doctorate/ Professional	16	16
Total	**100**	**100**
Current occupation/ Role		
Entry Level Employee	29	29
Mid-career Professional	38	38

Senior Manager/ Executive	24	24
Others	13	13
Total	**100**	**100**
Field of work/ study		
IT/ Software development	20	20
Finance & Banking	25	25
Health care & Pharmaceuticals	12	12
Education & Training	16	16
Manufacturing & Engineering	10	10
Retail & E-Commerce	11	11
Others	10	10
Total	**100**	**100**

Source: Primary data

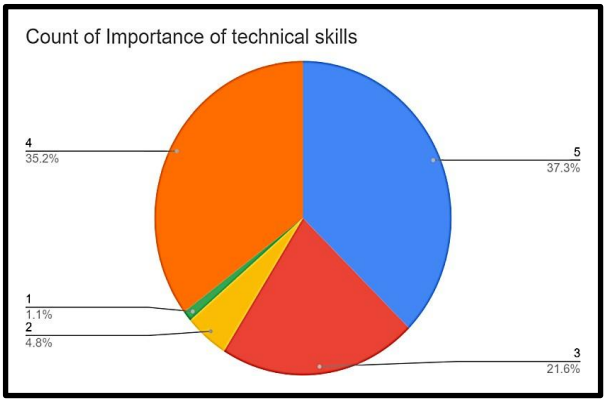
The table showing demographic profile indicates that most respondents are young, with 43 percent aged 18–24 and 34 percent aged 25–34, making 77 percent below 35 years. Only 14 percent fall within 35–54 years and 4 percent are above 55 years, showing limited senior representation. In terms of education, 54 percent are undergraduates, 30 percent postgraduates, and 16 percent hold doctoral or professional qualifications, highlighting a well-educated workforce that is well-positioned to adapt to AI-driven changes.

Regarding career stage, 38 percent are mid-career professionals, 29 percent entry-level employees, and

24 percent senior managers or executives, ensuring balanced perspectives across roles. Sector- wise, the largest groups are finance and banking (25 percent) and IT/software development (20 percent), followed by education and training (16 percent), healthcare (12 percent), retail and e-commerce (11 percent), and manufacturing (10 percent). This diverse distribution across AI-impacted industries provides valuable insights into how both technical and soft skills are prioritized in the evolving workforce

Chart 1: Importance of technical skills

Source: Primary data



With 72 percent rating, technical skills as highly important (4–5 on the scale), AI-era employability hinges on technological fluency. In education, this validates embedding coding, data ethics, and AI tools into curricula. In finance and banking, the demand mirrors the heavy reliance on analytics for AML, fraud, and compliance. Manufacturing reflects this with predictive maintenance and robotics requiring data-savvy operators, while in retail, adoption of demand forecasting and personalization tools aligns with this overwhelming push for technical upskilling.

Table 2: Soft Skills Ranking for AI-driven workplaces

Skills	**Average rank**	**Final rank**
Communication	2.6	2
Creativity/Innovation	3	4
Critical Thinking	2.8	3
Adaptability/Flexibility	2.4	1
Emotional Intelligence	4.2	5

Source: Primary data

The table highlights the relative importance of key soft skills, showing that Adaptability/Flexibility ranks as the most critical skill (average rank 2.4, final rank 1), followed by Communication (2.6, rank 2) and Critical Thinking (2.8, rank 3). Creativity/Innovation is placed fourth (3.0, rank 4), while Emotional Intelligence is considered least important among the listed skills (4.2, rank 5). Overall, the findings suggest that the ability to adapt, communicate effectively, and think critically are seen as the most valuable competencies in the current context.

Table 3: Challenges hindering skill development

Challenges	**Rank 1**	**Rank 2**	**Rank 3**	**Weighted Average**
Financial constraints	10	5	3	43

Lack of time	9	4	3	38
Limited access to quality training	4	7	4	30
Unclear skill pathways	2	5	6	22
Fear of job placement	2	6	2	30

Source: Primary data

The table highlights the major challenges hindering skill development, with financial constraints (43) and lack of time (38) emerging as the most significant barriers, indicating that high costs and busy schedules restrict opportunities for learning. Limited access to quality training (30) and fear of job placement (30) further discourage individuals from investing in upskilling efforts, while unclear skill pathways (22) reflect uncertainty about which skills to pursue for future career growth.

Overall, the data suggests that both structural barriers such as affordability and access, along with psychological factors like uncertainty and job security concerns, collectively hinder effective skill development. A combined 58percent reported high concern (levels 4–5) about their skills becoming obsolete, compared with just 20percent showing low concern. In education, this translates to urgency in embedding AI literacy into learning outcomes to keep graduates relevant. For finance, it reflects fear among operations staff most vulnerable to automation.

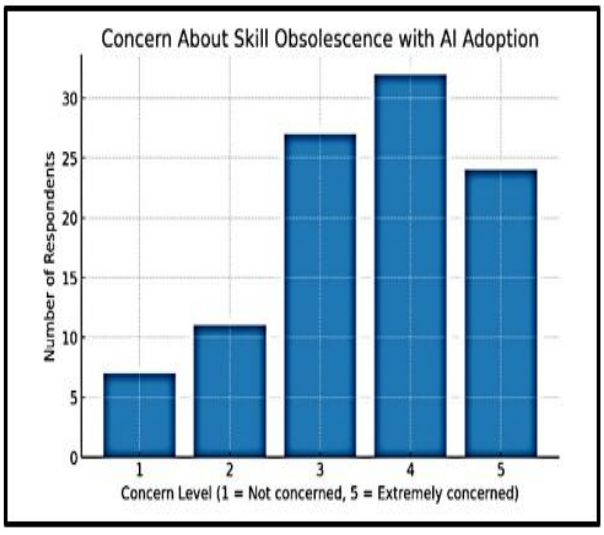


Chart 3: Concerns about Skill Obsolescence in the Age of AI Adoption

In manufacturing, operators fear displacement by robotics, echoing high concern levels. Retail workers, especially at POS, mirror this worry, confirming that adaptability is critical to future-proof roles.

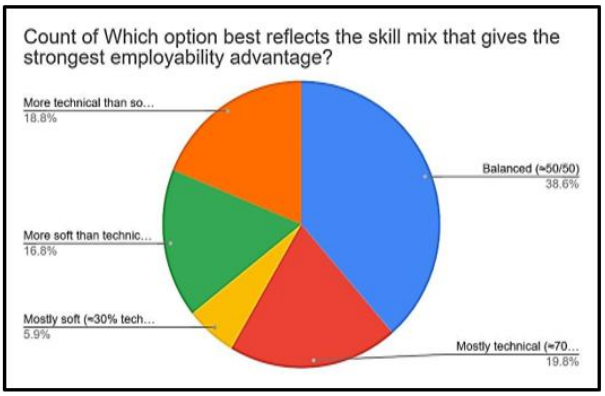


Chart 4: Preferred Skill Mix for Strongest Employability Advantage

Source: Primary Data

Half of respondents (50 percent) believe a balance of both technical and soft skills offers the best employability, while 32percent prioritized technical skills and 18percent soft skills. This preference signals demand for —T-shaped‖ talent. Education must produce graduates who can code and reason, not one without the other. In finance, balanced profiles are needed to interpret models and explain them to regulators. Manufacturing relies on workers who combine technical maintenance with safety communication. Retail requires staff who can read analytics and convert them into persuasive customer actions.

Table 4: Effectiveness of building AI-era skills

Option	Average Rank	Final Rank
In-house workshops	2.52	1
Online learning platforms	2.83	2
External certifications	3.02	3
Mentorship/Coaching	3.03	4
Peer learning communities	3.60	5

Source: Primary data

The analysis shows that In-house workshops are the most preferred option, with the lowest average rank (2.52) and highest overall priority, followed by Online learning platforms (2.83), which are also valued highly for skill development. External certifications (3.02) and Mentorship/Coaching (3.03) hold a middle-ground preference, indicating they are seen as useful but not as immediate as workshops or online platforms. Peer learning communities (3.60) consistently rank lowest, suggesting they are considered least effective or least prioritized in workforce training strategies compared to the other methods.

While 40percent called for equal training investment, 48percent leaned toward technical-heavy spending, and only 12percent favored soft skills. This shows a strong but not exclusive tilt toward tech. In education, resources must split between labs and faculty training. Finance justifies technical focus on data engineering while still

funding stakeholder communication. Manufacturing prioritizes robotics and automation training while balancing it with safety drills. Retail demands CRM/forecasting tools but only succeeds when paired with manager-led change leadership.

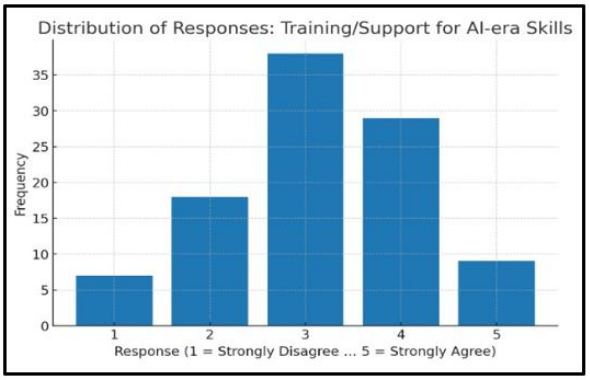


Chart.5: Adequate training/support for AI-era skills

Source: Primary Data

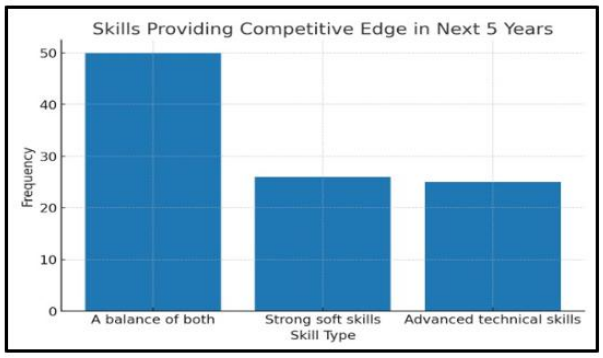


Chart 6: Skills for a Competitive Edge in the Next 5 Years

Source: Primary Data

Technical skills (40percent) narrowly led over balance (38percent), with soft skills at 22percent. This suggests that while balance is vital, technical fluency is slightly more

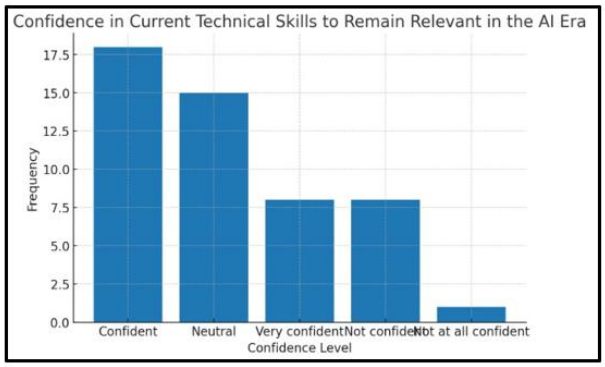


Chart 7: Confidence in Technical Skills for the AI Era

Source: Primary Data

future-defining. For education, this prioritization pushes AI and coding earlier into curricula. In finance, it emphasizes reg-tech and analytics as core career accelerators. In manufacturing, automation and robotics adoption mirror the 40percent technical-first view. Retail shows competitive advantage tied to digital tools for CRM and forecasting, but only sustainable with complementary people skills.

Confidence levels clustered around neutral (30percent) and confident (32percent), with only 18percent very confident and 20percent not confident. This middle-heavy spread signals cautious adequacy rather than mastery. In education, it reflects partial but uneven integration of digital skills. In finance, confidence grows after exposure to compliance and model validation. Manufacturing operators gain assurance through simulation and certification, explaining stronger confidence bands. Retail reflects growing comfort as dashboards become embedded in everyday store decisions.

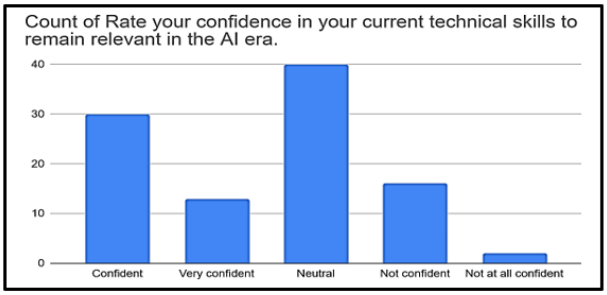


Chart 8: Confidence in current technical skills

Source: Primary data

Confidence levels clustered around neutral (30percent) and confident (32percent), with only 18percent very confident and 20percent not confident. This middle-heavy spread signals cautious adequacy rather than mastery. In education, it reflects partial but uneven integration of digital skills. In finance, confidence grows after exposure to compliance and model validation. Manufacturing operators gain assurance through simulation and certification, explaining stronger confidence bands. Retail reflects growing comfort as dashboards become embedded in everyday store decisions.

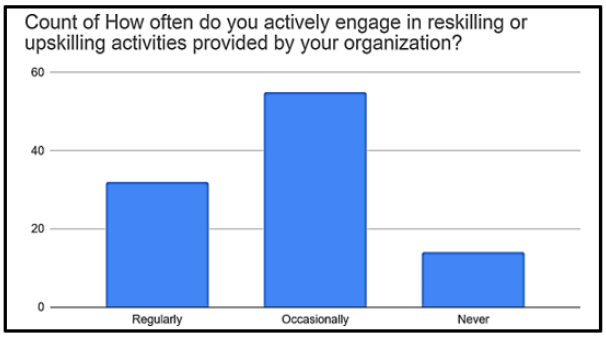


Chart 9: Employee Participation in Organizational Learning and Development Programs

Source: Primary data

45percent reskill occasionally, 40percent regularly, and 15percent never, showing a clear tilt toward ongoing learning. In education, this maps onto semesterly bursts and bootcamps. In finance, recurring compliance cycles anchor structured reskilling. Manufacturing's preventive-maintenance schedules create natural moments for skill refresh. Retail aligns reskilling frequency with seasonal resets and promotional campaigns, embedding training in operational rhythms.

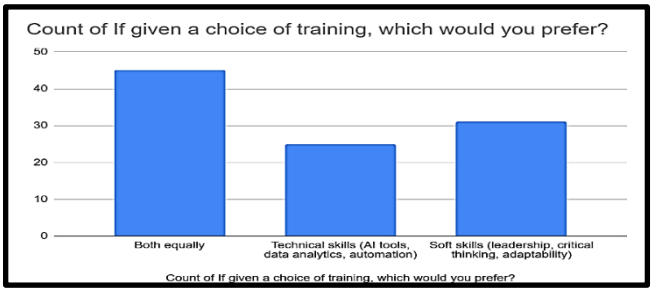


Chart 10: Choice of training preferred

Source: Primary data

Half (50percent) prefer equal focus on both, while 30percent favor technical and 20percent soft skills. This reiterates the importance of integrated training. In education, both coding labs and seminars on reasoning must run in parallel. For finance, technical analytics and stakeholder communication share equal billing. Manufacturing benefits from dual training in robotics and safety protocols. Retail demands adoption of CRM tools alongside customer empathy and service recovery skills.

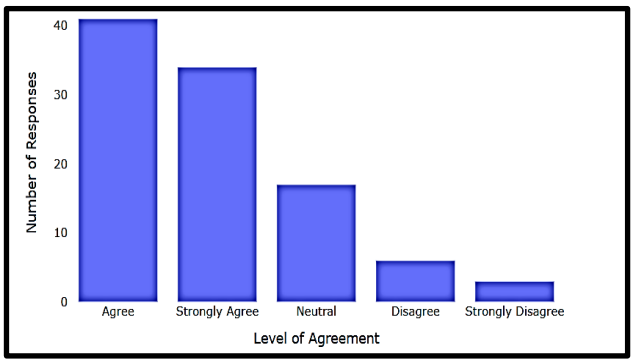


Chart 11: Perceptions on AI Replacing Technical Skills vs. Human Soft Skills

Source: Primary data

58percent agreed/strongly agreed that AI can replace technical tasks but not soft skills, while 22percent disagreed and 20percent stayed neutral. This majority underscores the irreplaceable human layer. Education must emphasize reasoning and critique. Finance benefits by keeping humans in adjudication and exception handling. Manufacturing relies on humans for safety-critical accountability. Retail thrives on empathy and negotiation, which AI cannot replicate, making soft skills central to customer loyalty**.**

2. RECOMMENDATIONS

Employers and governments can introduce —skill wallets, where employees receive annual learning credits to spend on approved training platforms of their choice. This makes learning affordable and personalized.

Organizations should adopt AI-driven learning systems that analyze employee schedules and deliver 10–15 minutes customized lessons during downtime (e.g., commuting hours or short breaks), reducing time barriers.

Establish low-cost, industry-focused AI labs in collaboration with universities and companies (e.g., AI in banking, AI in healthcare). Employees can practice with real datasets, making training practical and directly applicable.

Pairing younger, tech-savvy employees with senior professionals for knowledge exchange— where juniors share digital skills and seniors provide strategic/soft skill insights—bridges generational skill gaps effectively.

Organizations should set up career transition support units that help employees identify transferable skills, explore new AI-driven roles, and reduce anxiety about automation, thus reframing AI as an enabler rather than a threat.

Employees should pursue a —stackable certification model, where they gain deep expertise in one technical domain while progressively adding soft-skill certifications (e.g., adaptability, critical thinking), ensuring balanced growth.

HR departments can use predictive analytics tools to track emerging skill demands in their industry and provide employees with dynamic roadmaps, updating training priorities every quarter. This prevents confusion about unclear skill pathways.

3. CONCLUSION

It is clear that in an AI-driven workforce, success cannot rely solely on either technical expertise or soft skills in isolation. Instead, employability and long-term career growth depend on the integration of both. While technical proficiency in fields such as data analytics, AI literacy, and digital tools is vital to keep pace with rapidly advancing industries, soft skills especially adaptability, communication, and critical thinking remain indispensable for navigating change, building collaboration, and applying technology in meaningful ways. In a future where automation and AI will continue to evolve, human qualities such as creativity, resilience, and empathy will remain irreplaceable. Therefore, cultivating a culture of continuous learning, open collaboration, and adaptability is not just an option but a necessity. By embracing this holistic approach, the workforce will be better prepared to thrive in the face of technological disruption and to transform challenges into opportunities for sustainable growth..

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