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**Research Article**

# Bridging the Skills Gap: Role of AI to Transform Talent Acquisition and Education in a Digitally Transformed World

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**ABSTRACT**

Because the world is becoming very digitized rapidly, this research paper studies how artificial intelligence can contribute to filling the skills gap between education HEIs and industry needs. The biggest disparities revealed in the study were the differences in skills produced by traditional academic frameworks versus skills demanded by employers, including digital literacy, artificial intelligence, and soft skills. The COVID-19 pandemic has sped up the digital revolution of education exposing critical gaps in technological readiness across different parts of the world. Integrated use of AI-powered tools embeds the ability to customize learning experiences, improve student engagement, and tailor curricula to market needs that can all contribute to improving workforce readiness. The paper includes that internships, apprenticeships, and hands-on projects are needed to allow for collaborative partnerships between academia and industry to enable students to gain relevant skills. The research also identifies barriers to AI adoption such as resistance to change, a worry over future data privacy, and standards around the ethics of using AI in educational practice. Finally, the findings indicate that education and talent acquisition can be narrowed by relying on AI for growth, innovation, and continuous learning. Finally, strategic investments in faculty development and technology infrastructure are needed to support this integration and to prepare students for future labor market challenges, the study concludes.

**Keywords:** Artificial Intelligence, Digital transformation, educational institutions, Skill Gap, Talent Management.

## BACKGROUND AND CONTEXT

The educational and commercial digitization revolution reshapes how people receive and assess and value abilities for current employment opportunities. According to Parekh & Patel (2024) technological implementation extends past simple tech implementation because it requires reconsidering established systems along with outdated procedures. Public schools everywhere moved to distance education programs after the COVID-19 outbreak required physical classrooms to be closed. The educational change illuminated the strong points and limitations of existing educational techniques for digital readiness.

Digital transition in this context represents an evolution above surface-level conversion of existing procedures. A renewed approach to knowledge delivery and skill education stands as the core element of this transformation according

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to source material analysis. The educational sector must integrate novel technologies including AI and AR together with virtual classrooms into their classroom material and instruction. The technological transition exposed major gaps in preparation between various educational territories and educational regions.

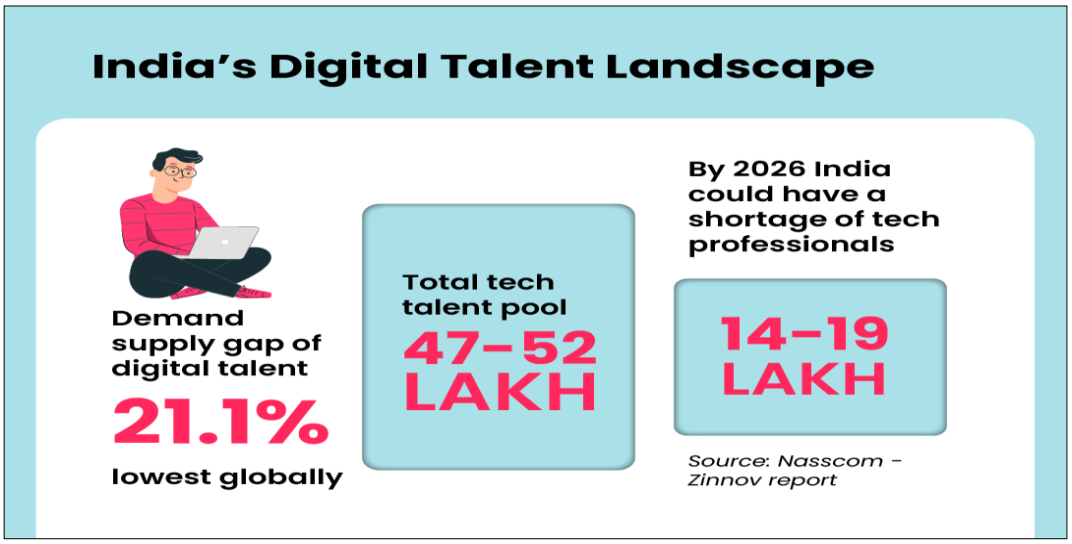
**Digital transformation:**

But its digital transformation has been the driving component on new ability requests across areas. With the multiplication of new innovations, associations need a labor force of computerized skills that didn't exist earlier (Brynjolfsson and McAfee, 2014). What this change implies is that specialists need to continuously be learning, and they need to ready to adjust as innovation creates.

**Skill Gap:**

The skills gap is defined as an imbalance between the required skills of the employer and the skills staff possess. Such a gap is of profound importance for many industries causing a decrease in productivity and hampering economic development (Bessen, 2019). However, among educational institutions, the skills gap often triggers a reconsideration of curricula to guarantee that students can adequately ready for a progressively developing task market (Rosenbaum, 2021).

Traditional educational institutions have difficulty up to keep pace with the fast paced changing needs of the industry. From the qualitative data of the empirical research, we can see that the integration of educational institutions with the companies is low and educational institutions do not provide the kind of training that the market needs (Goulart et al., 2021).




**Source: Nasscom**.

**Importance of Bridging the Skills Gap**

A key problem is that there is a large gap between traditional educational outcomes and the industry needs. Studies show that about 43 per cent of STEM jobs are filled only because graduates do not have adequate digital skills. Specific to these types of skills are data analytics, artificial intelligence, as well as digital transformation management, all of which have a quite marked skills gap. The mismatch between educational output and industry needs is a problem of significant importance to economic growth, innovation and global competitiveness.

Additionally, the pace at which technology advances is so fast that traditional methods aimed at skill development are always a good number of steps behind what the market demands. Educational institutions not only need to address current workforce skill deficiencies, but also predict future workforce needs. In technical and professional fields this is more of an agile and responsive way of developing curriculum and assessment of skills.

It is critical for the curricula to be in step with commercial need and therefore collaboration between education establishments and industry stakeholders is required. This teamwork opens doors for students to have internships,

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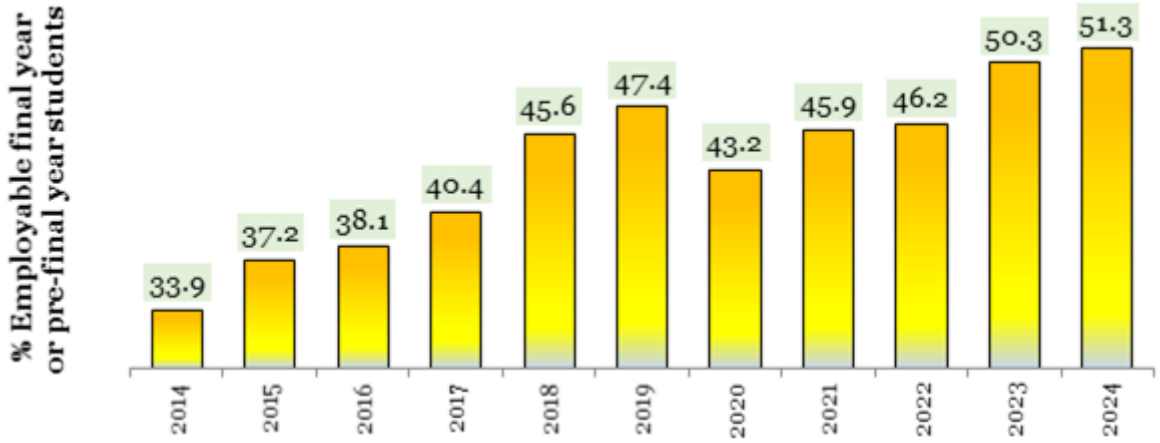
apprenticeships, obtain hands on projects. Students get a chance to learn by doing, and they are getting ready for future jobs. Educational institutions ensure the graduates have the proper skills when they introduce the industry know-how to their programmes. This doesn't just help boost the economy and new ideas, it helps students and employers. As well as, this partnership can spot new skills jobs will need that they can need to find the workforce prepared for in advance.




**Source:** India Skills Report, Wheebox

**The purpose of aligning education with industry needs.**

Completely assessing the current skills gap within the organization is a key step in this process. Combining these frameworks, organizations can identify where the gap is located — the difference between the skills that the workforce already has and the skills necessary for the future — and design their upskilling and reskilling to bridge this gap. (Accelerating Workforce Reskilling for the Fourth Industrial Revolution, 2023).

Education and industry must strive to develop a workforce best prepared for changing economic needs. It is also reflected in the presence of higher education institutions, which have integrated of digital skills and technical training within their curricula, not least the Vision 2040 of Oman that promotes technological and entrepreneurship competencies for nurturing the knowledge-based economy.

In order to remain relevant, HEIs need to work with industry and keep the curricula current with new technologies such as artificial intelligence (AI), data analytics, and blockchain. ( (Akour) Internships and project-based training give students an edge to enter the job market. Personalized and collaborative digital learning tools like augmented reality (AR) and AI enable you to build skills suitable to industry's needs.

Some countries have advanced in digital competency, like Oman, while other countries are lagging in scientific research; advanced training remains as a gap. These challenges require changing the curriculum, continued faculty development and policy reforms. It is essential for academia working with industry to create a living education system, one responsive to technological and economic trends. (Bui Trong Tai1*, 2023) (Mohite, 2024)

**Digital transformation & AI:**

AI powered tools are being used as one of the strong strategies to bridge the skills gap by using them to identify and develop the talent. Organisations can use these tools to better understand the changing skill landscape, and align workforce development innovations to addresse the gap between what existing workers can currently offer, and what's required for the Digital age. (Morandini et al., 2023)

In the fast changing and constantly evolving digital world, companies are increasingly dumb as artificial intelligence solutions are seen as a solution to what is probably the most urgent skills gap issue. As the nature of work is transforming, there is a pressing need for both workers and organizations to take proactive steps, prior to transitioning to the future of work to identify and resolve this skills gap so as not to hinder future returns in talent sourcing. (Sinku, 2021)

Gaining access to everyone's raw data is becoming increasingly common, as artificial intelligence is being integrated in our workplace and AI has a tendency to change the way many job functions are performed. (2023) As AI driven

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automation and technology change the landscape of traditional roles (Goulart et al., 2021, Trenerry et al., 2021, Normén-Smith et al., 2024, Parekh & Patel, 2024), organizations need to develop strategies to upskill and reskill their workforce to meet this new era of technology so they can stay in their roles. (Parekh & Patel, 2024) (Morandini et al., 2023)

To this end, it has to be said that artificial intelligence (AI) shows itself to be a disruptive tool not only in talent acquisition, but also in education. Similarly, AI can make better use of the time spent on recruitment by identifying the right people for a candidate, at a faster pace and can also personalize the learning experience to increase the skill development (Chui et al., 2016). As such, the application of AI in these fields may serve to bridge the skills gap and align worker competencies with industry demands.

**Role of AI in bridging gap between Academia & Industry**:

AI bridges the gap between education and industry in several ways with the main goal being upskilling for the student. AI's personalized, adaptive learning experience is fueled by customizing educational content based on the unique needs, interests, and proficiency levels of each learner. ( Hasibuan & Azizah, 2023; Mehta et al., 2023). This customization gives access to students to work on those skills that are in their future career and industry criteria. Systems powered by artificial intelligence can help pinpoint what areas of learning students need improvement on and in turn, both offer the resources and opportunities to learn which prepare them better for what's expected of them in the 'real' world. Indeed, it's interesting that AI brings many benefits, but we need a balanced use. Educational AI gives value to 'humans in the loop' meaning human beings are still crucial in educational AI (Ifenthaler et al., 2024). And it underscores the reason that students need to learn skills that work with AI, not against it.

Overall, AI is reshaping both EdTech and industry and streamlining the transition between the two. By enabling students to learn on the go (not monitored 24/7 by educators) personalize learning experience, help students in positional skill identification, and support skills based ongoing learning & adaptation. Yet AI alone as an educational force needs to be balanced with human touch points to ensure students get the best of both worlds and develop a rich skillset that meets industry needs, but remains creative and critical.

**AI in Education**

Education got an overhaul by AI, and it is transforming AI in education with a variety of AI-based technology platforms. The target of this transformation is to close the output levels of higher education and industry needs and promote lifelong learning, student engagement by solving real problems for learners. It leads to AI speeding up personalized learning, especially for differently-abled students and at system level predictive analytics preventive from dropping-out as well as new skillset evaluation. AI tools are blended into the medical and health informatics education to improve learning and guide in developing AI capabilities. We have to integrate; AI is good for the patient and really good at what it does which is real time data analytics. Furthermore, AI's role in medical education is explored through scenario-based strategic planning, highlighting potential future environments and emphasizing the need for ethical frameworks and interdisciplinary collaboration (Michelle I Knopp, 2023).

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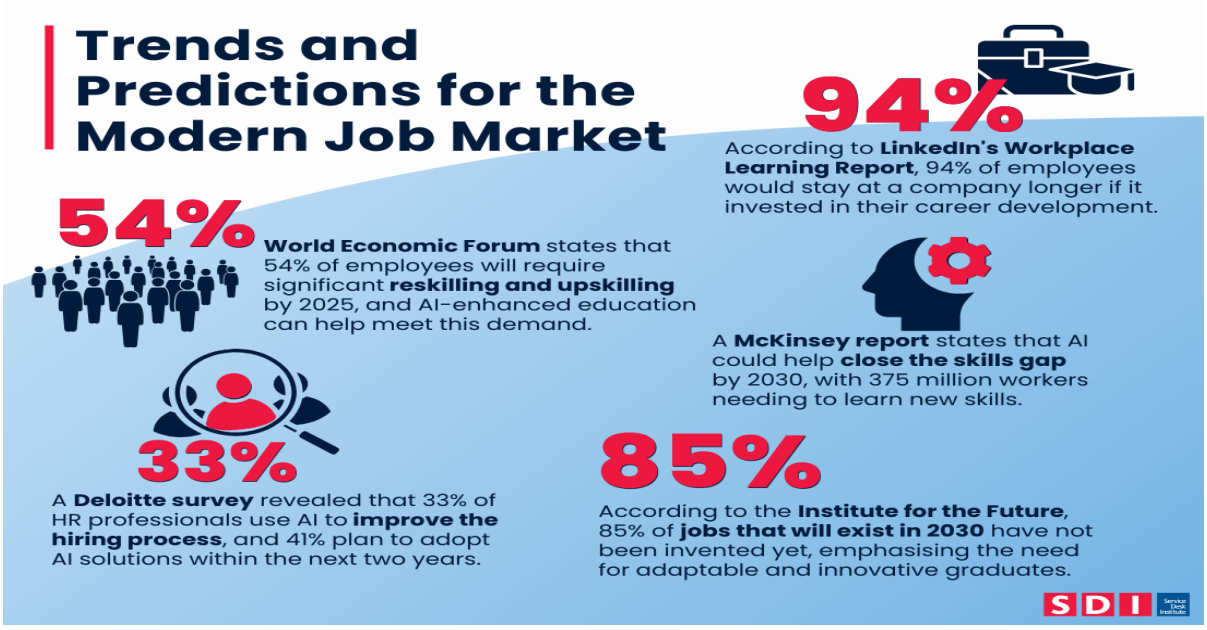


**Source:** https://www.servicedeskinstitute.com/resources/ai-in-education-bridging-skill-gaps-and-boosting-learning-2/

**Role of AI in Talent Identification and Development**

Total AI has been implemented in talent management processes thus making them more modern and more modernizing new solutions for searching and keeping employees for organization. This means that AI enabled recruitment systems can use predictive analytics to tell you how many people you are going to be hiring, and using that and resumes that you screen yourself, can actually remove the bias or bias in a biased system and automatically screen those resumes. Finally, these systems can take video and behavioral data even more as to further refine candidate assessment in order to tighten any correlation between the needs of a job and a candidate's capacity (Tariq, 2024).

In talent development, AI creates personalized learning experience and career development through it. Intelligent HRM automated solutions based on structured machine learning approach improve a combination of professional assessment and planning (Faqihi & Miah, 2023). It opens lots of doorways to improve on our skill level and have an improved career path. Moreover, it can be used to predict personnel risks of turnover, and to develop individual development programmes aimed towards increasing retention rate (Tariq, 2024). Interestingly while one, the benefits that AI introduces in talent management is a lot, there is a flip side to that and challenges with regard to this are also there. Growing concerns about data privacy, discrimination in automated decision making and fear of job replacement are creased (Espinosa et al., 2024). Finally, empirical research on the reliability, validity and fairness of use of AI/ML tools in organizational settings is an area of need described by (Gonzalez et al. 2019).

The final word: Transforming talent find and development with AI utilizing smart automation, predictive analytics and personal leaning experiences as course. However, with these ethical issues resolved and transparent regulations along with collaborative attitudes to AI systems and human expertise (Espinosa et al. 2024), organizations can benefit from these. However, as AI continues to grow, it's vitally important for HR professionals and researchers to understand how AI can be used, and what's at stake, in talent management.

**REVIEW OF LITERATURE:**

1. The study by Parekh and Patel (2024) focused on exploring the challenges and opportunities associated with digital transformation in commerce education. The authors found that advancements such as AI-powered tools, digital classrooms, and gamification have significantly reshaped the educational landscape, offering personalized learning opportunities and enhanced student engagement. Through a review of secondary sources, the study analyzed trends in digital education before and after the COVID-19 pandemic. The findings underscored the potential of digital education to improve accessibility and interaction while highlighting the

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barriers posed by resistance to change and technological gaps. The authors concluded that addressing these challenges is essential for fully leveraging the benefits of digital education【7†source】.

2. In another study, Sinku (2021) analyzed the impact of the COVID-19 pandemic on digital transformation in India's education sector. The research highlighted how the pandemic accelerated the adoption of digital tools while exposing critical gaps in digital readiness, particularly in rural regions. Drawing on secondary data from government reports and academic sources, the study illustrated the dual nature of this transformation, with benefits such as increased access to education juxtaposed against challenges like digital inequity and inadequate infrastructure. Sinku concluded that the pandemic revealed an urgent need for a robust hybrid education model that can accommodate inclusivity and sustainability in the future【8†source】.
3. Tai and Son (2023) conducted a systematic review to examine digital transformation in education across dimensions such as campus environments, teaching methodologies, and learning experiences. Their findings emphasized the transformative role of technologies like AR/VR, adaptive learning platforms, and AI-driven personalization, which have enhanced both teaching and administrative efficiency. Employing the PRISMA guidelines, the study synthesized insights from peer-reviewed literature, demonstrating the potential of blended learning and data analytics to improve educational outcomes. However, the authors stressed that successful implementation requires a clear strategy and strong institutional commitment. Their conclusions reflected a broader recognition of digital transformation as a paradigm shift in education that demands proactive adaptation by educational authorities【9†source】.
4. The digital transformation era has reshaped job markets, necessitating a reevaluation of skills required by professionals, challenging higher education institutions (HEIs) to equip students accordingly. Goulart, Liboni, and Cezarino (2021) highlight a significant skills gap between what IT companies need and what graduates possess, arguing for a systemic approach where HEIs collaborate with industry to align curricula with market demands. The study emphasizes the importance of soft skills, showing that a comprehensive education model incorporating personal development is crucial for employability in the technology sector. By fostering industry partnerships and integrating these skills, HEIs can better prepare students for modern job market challenges, ensuring sustainable economic growth (Industry and Higher Education, Emerald).
5. Qiu, Xu, and Omojokun (2020) argue that closing the workforce skills gap in the digital business environment requires a dual focus on technology and higher-order thinking skills. Their study, conducted with business and IT undergraduates using SAP ERP case studies, demonstrates that while IT majors have a better grasp of technological applications, both groups need to enhance critical thinking, problem-solving, and decision-making abilities to become innovative professionals. The authors emphasize that collaboration between academia and industry is vital to equip students with the necessary skills for a dynamic job market, highlighting the importance of integrating technology with educational curricula to foster these competencies (Journal of International Technology and Information Management).
6. The article "Higher Education Transformation for Artificial Intelligence Revolution: Transformation Framework" by Rawan Ghnemat, A. Shaout, and Abrar M. Al-Sowi presents a framework for integrating AI into higher education to revolutionize learning processes. It introduces AI-based learning as a transformative approach that incorporates technologies across university settings, aiming to align educational outcomes with industry demands. This framework emphasizes the need for cultural shifts and collaborative practices within educational institutions to foster lifelong learning and meet market needs. The authors propose that such integration can bridge the gap between higher education and industry, preparing students for the evolving digital landscape (ResearchGate).
7. Zhao, Y., Gómez, M., Llorente, A., & Zhao, L. (2021). This study highlights the importance of digital competence in higher education, emphasizing the role of students' perceptions and individual factors in shaping their digital skills. The findings suggest that enhancing digital literacy can significantly improve academic performance and engagement, preparing students for a technology-driven workforce. Institutions should focus on tailored training programs to cultivate these essential skills.
8. Morandini, S., Fraboni, F., Angelis, M., Puzzo, G., Giusino, D., & Pietrantoni, L. (2023). These studies suggest that the integration of artificial intelligence in organizations necessitates upskilling and reskilling of workers to address skills gaps, enhance decision-making, and improve job performance, while also presenting challenges such as job displacement and the need for continuous vocational education and training.

9. Akour, M., & Alenezi, M. (2022). These studies suggest that the digital transformation in higher education is essential for aligning educational practices with technological advancements, addressing skills gaps in the job market, and enhancing student engagement through blended learning and leadership adaptation.
10. Brigid Trenerry1*, Samuel Chng1, Yang Wang1, Zainal Shah Suhaila2, Sun Sun Lim2, Han Yu Lu1 and Peng Ho Oh2(2021) Digital transformation research reveals multifaceted workplace challenges spanning technological, organizational, and individual levels. Existing studies highlight barriers like technological resistance, skills gaps, and organizational culture, emphasizing the need for holistic strategies that integrate technological infrastructure with human factors. The literature underscores the importance of adaptive leadership, continuous learning, and creating environments that support technological innovation and workforce resilience.
11. Pillai, R., Sivathanu, B., Metri, B., & Kaushik, N. (2024) The literature on AI teacher-bots (T-bots) in higher education reveals emerging challenges and opportunities in educational technology adoption. Existing research emphasizes technology acceptance models, highlighting students' perceptions of usefulness, ease of use, and perceived benefits as critical factors in AI learning tool adoption. Key themes include the potential for personalized learning, concerns about technology reliability, and the need for robust technological and pedagogical integration strategies.
12. Hazaimeh & Al-Ansi (2024): The literature on AI acceptance in higher education reveals complex perspectives from teaching staff and students. Research highlights critical factors including technological readiness, perceived usefulness, and individual attitudes toward AI integration in educational contexts. Key themes emphasize the importance of understanding technological adoption barriers and facilitators across different stakeholder groups.
13. Hammer & Karmakar (2021): Existing research on AI and automation in workplace contexts, particularly in India, explores transformative impacts on employment and organizational structures. Studies underscore technological disruption's potential for job reconfiguration, skill demand shifts, and the need for adaptive workforce strategies in emerging technological landscapes
14. Paramita et al. (2024): AI in talent acquisition research reveals complex organizational and operational dimensions. Studies explore technological integration's impact on recruitment processes, highlighting challenges of algorithmic decision-making, bias mitigation, and strategic talent management transformation.
15. Lang (2023): Workforce upskilling literature examines universities' role in lifelong learning, emphasizing the critical need for adaptive educational models that address rapidly evolving technological skill demands. Research underscores the importance of flexible, industry-aligned learning approaches to bridge educational and workforce development gaps.
16. The literature on skills gaps in the workplace for 2025 highlights emerging technological and soft skill challenges. Key research identifies critical deficiencies in digital literacy, AI and machine learning competencies, data analysis skills, emotional intelligence, adaptability, and complex problem-solving abilities. Studies emphasize the growing need for continuous learning, cross-functional skills, and proactive workforce development strategies to address rapidly evolving technological and organizational demands.

**RESEARCH GAP:**

- The difference between what is learned in higher education and the skills in demand among industries becomes noticeable, most particularly the gap in areas from digital literacy to artificial intelligence (AI) to important soft skills.
- AI has the potential to help close this gap, but challenges like resistance to technology, unequal access, and institutions not being fully prepared are slowing progress.
- There's a growing need for practical frameworks that integrate AI into education and hiring practices to better prepare the workforce for today's digital landscape.

**OBJECTIVES:**

- The purpose of building evaluation to determine the effect of AI enabled training and development of skills centered educational tools and platforms on the growth of educational and vocational training programs.

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- Examining how AI can close the communication black hole between educational institutions and as hiring companies to ensure that curricula are current with market demands.
- To examine how AI can be used to define learning outcomes that parallel skills needed in the industry
- To understand barriers and enablers for the adoption of AI by educational institutions and industry partnership.

**STATEMENT OF PROBLEM**:

The higher education institutions (HEIs) are not only failing to deliver technological literacy, artificial intelligence and soft skill that are needed by the present-day labour market but at the same time they are confronting the growing skills gap which is happening with great speed. Essentially, this was saying that graduates who too often end up useless in whatever they graduated for, and causes the industry to be stuck hiring new people whilst losing out on growth opportunities. Drivers of adoption include the success of integrating AI-powered tools and digitalization in education's work to bridge the vocational and academic training gap; however, they have been limited by resistance to change, technological gaps and institutional barriers. As such, it makes sense to integrate AI into talent acquisition and education to guarantee that students possess the skills necessary for wins in a digitizing world, and the critical success factors that can promote or hinder this process.

**LIMITATIONS:**

- Dependency on secondary data.
- Time constraints.
- Identification of reason for resistance toward adopting AI-driven systems from educators, employers, and students & overcoming the Resistance may not be fully addressed.
- Limited generalizability.

**FINDINGS**

1. Higher education institutions (HEIs) generate skills that differ significantly from industrial workforce needs particularly regarding digital literacy and interpersonal abilities and artificial intelligence aptitudes.

2. Education moved toward digital operations at accelerated speeds due to COVID-19 but such transitions exposed fundamental technology readiness shortfalls particularly in locations outside major urban areas.

3. Artificial intelligence shows promise in narrowing the skills gap through: - Customizing educational experiences Effectiveness improves for both talent discovery systems and employee development practices. - Upgrading hiring procedures - Supporting flexible learning and professional advancement

4. Effective digital transformation in education necessitates a well-defined plan, robust institutional dedication, and partnership between academic and industrial sectors.

5. The use of AI for education and talent acquisition faces barriers because of data protection concerns alongside perceived bias in automated decision systems and workforce displacement concerns.

**SUGGESTIONS**:

1. Higher education institutions should create comprehensive guidelines that combine Artificial intelligence implementation for educational delivery and recruitment process to achieve correct matches between academic learning standards and market demands.

2. Academic institutions must develop industry partnerships that deliver education programs which match market expectations for existing and forthcoming requirements.

3. Artificial intelligent adaptive learning platforms deliver tailored educational interfaces which enable personalized student interactions during skill development.

4. To successfully implement AI-based teaching methods institutions must direct their budget investments toward professional development projects that train their faculty to become digitally proficient to deliver AI educational content.

5. Ethical Standards and Clear Guidelines of the Education as Well as Talent Acquisition Processes to Address Privacy and Fairness.

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6. The rapid technological advancement requires organizations to create flexible strategies which improve skill development opportunities for their workforce.

7. The technical elements of education should be backed by rooted adaptable abilities that students must study to beat affordability after a transition in the future socioeconomic requirements: critical thinking and problem-solving.

8. Physical accessibility and upgraded technology infrastructure must be prioritized throughout our communities specifically for disadvantaged groups.

9. The study of higher education practices should develop future research to test AI assessment systems as they evolve through testing across various institutions within multiple locations.

10. The institution must adopt a model incorporating AI technology systems next to human supervision for guiding edtech operations as well as staff development at the leadership level.

In conclusion, integration of artificial intelligence (AI) in the field of education and recruitments of talent could fill the skills gap between academic output and market demand. It's all happened in the rapid digital transformation in which it's shown both the potential and the problems of taking AI powered solutions. By leveraging AI for human talent discovery, this technology can personalise learning and enhance talent identification, as well as simplify recruiter processes in order to align the capabilities of the workforce with market demands. Successful implementation, however, does not come without overcoming resistance to change, troubleshooting technological gaps and enforcing robust ethical standards. For higher education institutions to adopt such a system, collaboration with industry stakeholders in developing curricula most current and future market need must be done, faculty development must be invested in, and a flexible strategy to promote continuous skill development must be put in place. By overcoming these challenges and utilizing AI's capabilities, educational institutions can better prepare students for the emerging digital landscape and enable economic growth and innovation.

**SUMMARY:**

The commercial and academic digital transformation has profoundly changed how individuals evaluate and acquire job skills. The digital shift calls for a fresh attitude to knowledge distribution and skill learning that integrates advanced tools like artificial intelligence, virtual classrooms, and virtual classrooms into classroom materials and instruction. This has revealed significant disparities in readiness among geographical districts and educational areas. The skills gap is a major problem, for it hampers economic growth and efficiency. Fast changing industry demands trip traditional educational organizations. Economic development, creativity, and international competitiveness all depend on the closing of the skills gap. Traditional approaches to developing ability sometimes lag behind consumer demands. Dealing with present workforce skill gaps and estimating future workforce requirements calls for cooperation between industry players and educational institutions. Students can prepare for their next jobs, learn by doing, and get practical experience utilizing this partnership.

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