

ROLE OF ARTIFICIAL INTELLIGENCE (AI) IN SHAPING THE LEARNING
ARCHITECTURE WITHIN CORPORATIONS AND SMALL AND MEDIUM
ENTERPRISES (SMES) ACROSS THE INDIAN SUBCONTINENT

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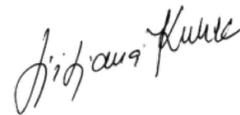
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Dedication

To my late father, U.P. Vasudevan, who always believed in my potential and whose wise words continue to inspire me. To my late elder brother, Bharathwaj Vasudevan, my friend, philosopher, and guide, who had unwavering faith in me. Your sacrifices and guidance remain my guiding force in this journey of life.

To my wife, my mother and my daughter —Shailaja Prasanna, Lakshmi Vasudevan and Karishmaa Prasanna — your unwavering belief, trust, and encouragement have been my pillars of strength. Your support gave me the confidence to pursue my commitments with determination and focus. Despite my business obligations and frequent travel, your constant conversations and unwavering presence kept me motivated. I will always remain indebted to you for standing by me through this journey.

With heartfelt gratitude, I dedicate this work to you.

"You are what you believe in. You become that which you believe you can become"

Bhagavad Gita Chapter 17, Verse 3.

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ABSTRACT
ROLE OF ARTIFICIAL INTELLIGENCE (AI) IN SHAPING THE LEARNING
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Indian corporate leaders, SMEs, and learners have long faced challenges in identifying learning needs, traditionally relying on roles, hierarchies, and structures. This approach often results in generic learning initiatives. This study explores how AI is reshaping Learning and Development (L&D), empowering individuals to personalize their learning while staying aligned with organizational goals.

AI-driven learning solutions are emerging as a strong alternative to traditional service providers, who struggle to differentiate offerings. Organizations now seek innovative approaches to engagement, measurement, customization, and ROI. AI platforms address these needs through personalization, adaptability, and efficiency—facilitating tailored skill development at scale.

Historically, access to knowledge was limited to elite networks and institutions. AI democratizes this access, enabling continuous learning and capability building through

intelligent, customized tools. These solutions also help organizations reduce time, cost, and effort compared to traditional methods.

The study employed a 270-degree data gathering approach, using Zoho Surveys and in-depth interviews with senior corporate executives, learning service providers, and learners. It included inputs from 123 learners, five L&D service providers, and senior representatives from 10 companies across sectors like BFSI, Manufacturing, IT & ITES, Education, Pharma, Automobile, Entertainment, and more.

Findings reveal growing awareness and willingness to adopt AI in L&D strategies across all groups. Key concerns include data security, job displacement fears, and the complexity of redesigning existing frameworks. Despite this, there is optimism about AI's ability to simplify learning structures and drive transformation.

AI enables a shift from one-size-fits-all models to dynamic, personalized, and goal-oriented learning experiences. Organizations that adopt AI in L&D stand to enhance learning effectiveness, align training with business outcomes, and create measurable impact.

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CHAPTER I: INTRODUCTION

1.1 Introduction

A study and review on dissertations on the role of Artificial Intelligence (AI) in Learning and Development (L&D) indicates how little has been written on this subject.

With an ever-changing working environment, thanks to (VUCA) Volatile, Unstructured, Complex and Ambiguous (Johansen & Euchner, 2013) at its fastest pace, the need to align to external environment(s) has become paramount. As a result of the same, organisations are looking at novel ways of embracing technology that would enhance productivity by driving effectiveness and efficiencies. The contribution of AI in transforming the role of the human resources (HR) practitioner in L&D function is significant (Reitgruber, T., 2023). AI is being used in L&D functions (Nirubarani, J. and Aithal, P.S., 2024.) through the use of virtual reality, augmented reality, and chatbots. AI tools such as data mining are currently being used in L&D functions in various core sectors for customized coaching and enable HR practitioners perform more strategic tasks (Pavitra & Agnihotri, 2023). Learning and Development initiatives should be designed keeping in mind factors of employee engagement, involvement and extent of learning transfer (Maity, 2019). The right combination of Artificial Intelligence (AI) tools will enable careful and prudent decisions and thus provide the right winning combination to bring out the best in the learning and development fraternity of content creators, L&D managers, service providers and finally learners' engagement and transformation.

(Poquet and De Laat, 2021) stated that according to the studies conducted through research papers in the area of Artificial Intelligence (AI) in the area of Learning and Development (L&D), due to the ongoing digitalisation of workplaces and educational settings, human activity underpinning learning and work is increasingly mediated by technology. My experience over the last 2 decades in the Learning and Development (L&D) industry finds and argues that, every Learning and Development (L&D) initiative is unique to its organisation, the capabilities an organisation would like to build amongst its human capital and how well the up-skilling could have an impact on their business outcomes, value chain and key stakeholders.

The primary aim of this study is to showcase the need, present day challenges and future opportunities that highlight the importance that Artificial Intelligence (AI) plays in the way Corporations, Small and Medium Enterprises (SMEs) and Learning Service Providers (LSPs) are likely to embrace, thereby improving flexibility, effectiveness and efficiencies in learning engagement, learner engagement and learning transformation.

1.2 Research Problem

The rapid pace of innovation demands continuous employee upskilling. Organizations need personalized, accessible micro-learning modules to enhance engagement and training transfer (Maity, 2019). With two decades in the industry, I've witnessed a transformative shift in learning and development. Today's corporations, service providers, and learners demand highly customized, innovative experiences that drive engagement and deliver tangible implementation value, reshaping the way learning is approached and applied.

Workplace learning effectiveness depends on learner motivation but is limited by traditional models and minimal use of organizational behavior theories. Learning methods and contextual factors influencing engagement highlight the need to explore psychological engagement for deeper understanding of motivation and improved workplace learning outcomes (Noe et al., 2010).

Training and development are often reactive, not strategically driven, improving skills but showing limited impact on commitment, satisfaction, or strategic goals. Weak linkages with strategy and performance management create a lack of integration in HR systems, minimizing its measurable contribution to competitive advantage. Strategic alignment is crucial for maximizing training's organizational impact (Rowland et al., 2017). To train employees effectively, companies must adapt to technological and generational shifts. Mobile and social learning are increasingly prominent, catering to the millennial workforce's preference for easily digestible, modern learning media (Solis, 2017).

1.3 Purpose of Research

The primary objective of this research is to examine the current learning practices of corporations, learners, and service providers in India, focusing on their willingness and ability to adapt to rapid technological advancements. The study seeks to evaluate their readiness to embrace technology-based learning, particularly through the integration of AI tools, which are becoming critical in delivering customized, scalable, and efficient learning solutions. By exploring key factors such as timelines, payoffs, flexibility, and the apprehensions associated with adopting new learning methodologies, this research aims to

uncover the barriers and opportunities for enhancing learning engagement and implementation value in a fast-evolving environment.

Furthermore, this study aims to provide a comprehensive analysis of the readiness of Indian corporations to navigate and evolve a VUCA (Volatile, Uncertain, Complex, Ambiguous) environment by adapting their learning practices to meet future demands. It will serve as a deep dive into the existing frameworks while identifying gaps and strategies for fostering greater flexibility and innovation in workplace learning. The research will also assess the role of service providers and learners in supporting this transformation, emphasizing the importance of collaboration, customization, and a forward-thinking approach to learning in an ever-changing business landscape.

The objectives of the study are:

1. A comprehensive analysis of the evolving landscape of learning and development in India, specifically focusing on the integration of modern technologies, including AI tools.
2. We will examine the key factors that hinder corporations, learners, and service providers from fully embracing technological changes, uncovering barriers that may be impeding progress. Identify the advantages and disadvantages of using technology and specifically AI tools for learning practices
3. We will also explore the innovative work that corporations and learning partners are undertaking to create value for learners through technology, highlighting the current advancements and strategies being employed.

Additionally, this study aims to identify the advantages and potential drawbacks of incorporating AI tools into learning practices, evaluating their effectiveness and impact on learner engagement. By understanding learners' perspectives on both adopting and resisting AI-driven learning, we will gain insights into their readiness to embrace such changes. The outcomes of these objectives, coupled with the research questions, will provide a thorough understanding of the present and future practices across India. This research will not only underline the growing need for organizations to incorporate AI and other technologies into their learning frameworks but also offer valuable recommendations for successfully navigating this transformative journey, ensuring that learning and development practices remain relevant and effective in the future.

1.4 Significance of the Study

This study holds the potential to influence the decision-making processes within the learning and development (L&D) ecosystem by encouraging the adoption of innovative, AI-driven learning methodologies. It aims to enhance efficiency, accuracy, and relevance in learning initiatives, while enabling more timely and informed decisions. Furthermore, the research explores how AI can be leveraged to measure the impact of learning through non-traditional approaches, offering a more dynamic and data-driven perspective to evaluate the effectiveness of learning interventions.

1.5 Research Purpose and Questions

In detail, the study is intended to provide the answers to the following research questions:

1. Assess the current practices in corporate L&D functions and their key challenges in terms of time, cost, retention of learning, etc. (based on sample size)
2. Assess the readiness to accept and embrace AI as part of the learning and development journey
3. How the learning triangle of corporate clients, their learners and service providers perceive the future of learning and development keeping AI as a key driver

CHAPTER II: REVIEW OF LITERATURE

2.1 Introduction

The Role of AI in Learning and Development in Corporations

A preliminary study of work conducted over dozens of organisations involving learning and development managers and business heads shows that past studies are primarily focused on understanding and modeling a particular type of constraint, such as the number of learners covered in an organisation, number of topics each learner has learned in terms of number of learnings/learner man days (Paine, 2014). The primary reason for ongoing marginalisation of learning is driven by a restrictive understanding of the learning practices. Challenges large organizations face today is to create and manage enabling architectures that systematically build strategic and organisational capabilities such as speed, responsiveness, innovation and creativity in a company's DNA (Deiser, 2009). The L&D profession and practice are at a cusp in their prompting an urgent need to better understand whether the L&D function and L&D professionals can maintain their relevance, the skills of learning professionals to establish if L&D is appropriately positioned to not only prepare, but continuously enable, the workforce for their roles in this ongoing virtual revolution (Gonsalves-Fersch, 2023).

Training Effectiveness

The rapid advancement of artificial intelligence (AI) is transforming Learning and Development (L&D), presenting both opportunities and challenges. One key aspect is

training effectiveness, as Advanced AI-enabled learning systems are gaining popularity for their ability to deliver personalized learning content, adapting to students' individual needs and enhancing educational experiences (Kabudi et al., 2021). AI enables more personalized, adaptive learning solutions tailored to individual learners. Educators and practitioners must be proficient in utilizing AI technologies, adapting them to enhance learning experiences in specific educational contexts. This ensures that AI tools are effectively integrated to improve teaching methods and student engagement (Gligorea et al., 2023). These innovations promise to improve knowledge retention, engagement, and overall learning outcomes. Measuring learning engagement is a key focus in both learning analytics and educational research, essential for improving educational outcomes. It provides insights to tailor learning experiences and enhance student success. (Tempelaar et al., 2020).

Challenges in Learning Measurements (Kirkpatrick Model)

This introduction addresses four key themes: the effectiveness of training, challenges in learning measurements using the Kirkpatrick Model, the importance of organizational culture in AI adoption, and the evolving role of L&D professionals in an AI-driven learning landscape. The Kirkpatrick model oversimplifies training effectiveness by ignoring contextual and individual factors in evaluation (Pietrowski et al., 2018). However, accurately measuring the success of AI-driven training programs remains a challenge, particularly when using traditional models like the Kirkpatrick Model. This model, while widely recognized, struggles to capture long-term behavioral changes and real-world

impacts, making it difficult to assess the full effectiveness of modern learning initiatives. A data-driven AI approach objectively evaluates employees' soft skills, focusing on collaboration aspects like participation, social impact, and communication. It eliminates biases, offering team and individual assessments for a comprehensive view of team dynamics and personal development (Gafni et al., 2024).

Culture as an Important Factor to AI Technology Adoption in Corporate Learning and Development

Organizational culture also plays a crucial role in the successful adoption of AI technology within corporate learning environments. A culture that embraces digital transformation and innovation is essential for integrating AI into L&D processes. AI adoption is influenced by organizational factors including top management support, strategic roadmap, skilled resources, and corporate culture (Radhakrishnan et al., 2022). Resistance to change, lack of digital readiness, or insufficient support from leadership can hinder the adoption of AI, limiting its potential to enhance learning programs.

Relevance of Learning and Development Professionals in the Ongoing Virtual Revolution in Artificial Intelligence

Furthermore, the relevance of L&D professionals is being redefined in the ongoing virtual revolution powered by AI. Machine learning and AI remain a black box for HRD/L&D, highlighting the need for greater involvement and collaboration (Harrison et al., 2020). As AI automates various aspects of the learning process, L&D experts must evolve their roles to stay relevant. Up-skilling, embracing AI tools, and leading the integration of AI-driven solutions are essential for these professionals to continue driving value in learning.

2.2 Themes

2.2.1 Training Effectiveness

Traditional models of training evaluation and effectiveness do focus on a rational, micro-level approach, primarily designed to assess whether individual trainees achieve specific, predetermined objectives set by the training program. These models typically evaluate training outcomes based on measurable criteria such as knowledge retention, skills development, or behavioral changes. Some well-known frameworks in this category include: (Baldwin & Magjuka, 2014).

Kirkpatrick's Four-Level Training Evaluation Model: (Kirkpatrick & Kirkpatrick, 2006).

Level 1: Reaction: Measures how participants feel about the training (e.g., satisfaction).

Level 2: Learning: Assesses the extent to which participants acquire the intended knowledge, skills, or attitudes.

Level 3: Behavior: Evaluates whether participants apply what they learned on the job.

Level 4: Results: Looks at the broader impact of training on business outcomes (e.g., productivity, sales).

Key improvements from AI in L&D: According to (Bhatt and Muduli, 2023). The following are the key improvements in the effectiveness of training that could be achieved by AI in learning and development.

Streamlining Learning Content Delivery:

AI can assist in articulating learning modules efficiently by automating content creation, personalization, and the delivery of interactive learning materials.

Learner Identification and Interaction:

Technologies like face recognition and speech recognition systems can identify learners and tailor learning experiences to individual needs, offering personalized feedback and ensuring course security.

Automating Routine Learning Tasks:

AI can help learners complete coursework, conduct assessments, and track their learning milestones automatically, making the learning process smoother and more efficient.

Learning Aptitude and Progress Evaluation:

AI tools can evaluate learners' aptitude, assess memory retention, and track progress over time. These insights can be used to provide real-time feedback, ensuring learners stay on track and meet their goals.

Enhanced Feedback and Corrections:

AI can play a significant role in measuring learning effectiveness by continuously monitoring performance. It can identify learners' mistakes and suggest corrections, enabling more effective and immediate remediation.

Cost-Effective, Scalable Learning Solutions:

AI-driven tools can handle large learning audiences efficiently. The learning process becomes quicker, more accurate, scalable, flexible, and less expensive, making it more accessible for learners and organizations alike.

The findings highlight the transformational potential of GAI (Generative AI) in self-upskilling for leaders. It demonstrates how GAI can build personalized learning materials, provide real-time feedback, and adapt content to individual learning styles. It identifies

notable executives who have effectively embraced GAI for their self-upskilling journeys, resulting in increased productivity and competitiveness. (Rukadikar & Khandelwal, 2024). In essence, the integration of AI into L&D fosters greater personalization, efficiency, and scalability in training programs, making learning processes more effective and adaptive to individual needs while reducing costs.

2.2.2 Challenges in Learning Measurements (Kirk Patrick Model)

According to (Kaufman & Keller, 1994), The Kirkpatrick Model is one of the most widely used frameworks for evaluating the effectiveness of training programs. Developed by Donald Kirkpatrick in 1959, it consists of four levels of evaluation: Reaction, Learning, Behavior, and Results. Each level aims to assess different aspects of the training process, from participant satisfaction to the actual impact on organizational outcomes. However, applying this model in practice comes with several challenges at each level.

Reaction: This level measures how participants respond to the training, usually through surveys or feedback forms (Kirkpatrick & Kirkpatrick, 2006). One of the main challenges is that participant satisfaction does not always correlate with learning effectiveness. Employees might report high satisfaction because the training was enjoyable, but this doesn't necessarily mean they acquired the intended skills or knowledge (Smidt et al., 2009).

Learning: This level assesses the increase in knowledge or skills resulting from the training. The primary challenge here is the difficulty in accurately measuring what participants have learned. Pre-tests and post-tests are common, but they can be limited by

factors such as test anxiety or flawed test design (Sitzmann et al., 2010). Additionally, measuring intangible outcomes like critical thinking or decision-making skills poses further difficulties.

Behavior: At this level, the focus shifts to whether employees apply what they've learned to their work. The challenge lies in isolating the effect of the training from other variables, such as organizational culture or individual motivation (Kirkpatrick & Kirkpatrick, 2006). Furthermore, behavior change may take time, making it difficult to assess the immediate impact of training (Phillips & Phillips, 2016).

Results: This final level evaluates the overall impact of the training on organizational performance, such as improved productivity or reduced costs. The challenge here is that it's often difficult to directly attribute organizational improvements to specific training programs due to other influencing factors (Phillips & Phillips, 2016). Additionally, measuring long-term outcomes requires continuous data collection, which can be resource intensive.

According to (Cahapay, 2021), the Kirkpatrick model, widely used for training evaluation, faces challenges when applied in the complex environment of higher education. A key limitation is the propensity towards using the lower levels of the model reaction and learning—while higher-order levels, such as behavior and results, are often neglected. This focus on immediate feedback and knowledge acquisition overlooks long-term impacts, such as changes in student behavior or the broader educational outcomes that are crucial in higher education. Additionally, the model's rigidity limits its ability to account for the

diverse and dynamic nature of educational environments, where various contextual factors can influence learning outcomes.

Another significant issue is the paucity of evidence supporting causal chains between the model's levels. The Kirkpatrick model assumes a linear progression from learning to behavior change and, eventually, to results, but this does not always hold true in the context of higher education (Langmann & Thomas, 2019). The complex interplay of factors such as student motivation, institutional culture, and teaching methodologies complicates this cause-effect relationship. To address these limitations, evaluators in higher education should incorporate contextual inputs, use more flexible and comprehensive evaluation methods, and focus on establishing clear causal links between the levels to ensure a more holistic and accurate assessment of educational outcomes.

2.2.3 Cultures as an Important Factor to AI Technology Adoption in Corporate Learning & Development

The Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975) posits that an individual's behavior is driven by their attitudes and the subjective norms they perceive. This theory can be applied to the adoption of AI technology in corporate Learning and Development (L&D), where organizational culture plays a significant role. Corporate culture, as a collective set of values, beliefs, and practices within a company, influences how AI technology is perceived, accepted, and integrated into learning processes. Over the past decade, advancements in high-performance computing have accelerated AI adoption in businesses. However, few organizations fully grasp the impact of AI on market competition or the barriers to its implementation. The complexity of AI and its early-stage adoption make it challenging for companies to assess its capabilities. While much research

has focused on AI's technical aspects, there is a lack of empirical evidence on its impact on business performance. Limited scientific literature exists to help organizations understand the real challenges faced by firms adopting AI (Latif, 2020).

2.2.4 Relevance of Learning and Development Professionals in the Ongoing Virtual Revolution in Artificial Intelligence

The ongoing virtual revolution, driven by advancements in Artificial Intelligence (AI), is reshaping corporate learning, making the role of Learning and Development (L&D) professionals more vital yet increasingly complex. The Theory of Reasoned Action (TRA), developed by Fishbein and Ajzen (1975), can help explain the attitudes, subjective norms, and intentions that drive L&D professionals to adapt and remain relevant in this transformative era. According to TRA, individuals' behaviors are shaped by their attitudes toward the behavior and subjective norms, which influence their behavioral intentions. In the context of AI's integration into corporate learning, these factors determine whether L&D professionals upskill and adopt AI-driven strategies.

Organizational behavior and behavioral economics have long debated managerial decision-making. Herbert Simon emphasized selecting the most favourable option from available choices by evaluating their significance and appropriateness. Businesses act as "judgment systems," and choosing the right framework, such as deferring to specialists or group decisions, is crucial. While AI offers fast, accurate, and reproducible decisions, its use in executive decision-making requires an understanding of its limitations. AI can introduce biases and hinder accountability, transparency, and trust. Despite AI's potential, its integration into decision-making raises concerns about institutional culture and responsibility for outcomes. (Rajagopal et al., 2022.)

AI technologies are driving significant cultural shifts in organizations, fostering data-driven decision-making, innovation, and collaboration. The principles of reciprocal symmetry encourage inclusivity, valuing openness, fairness, and respect for all stakeholders. As AI's role expands, ethical considerations become paramount, necessitating regulatory frameworks and moral standards to ensure responsible deployment aligned with societal values. This study highlights the importance of ethical engagement, adaptive leadership, and teamwork in AI utilization, leveraging reciprocal symmetry to achieve positive organizational and social outcomes. By embracing these principles, organizations can navigate AI adoption while fostering human-centric cultures and ensuring long-term value creation in the digital economy (Maddula, 2018).

2.3 Theory of Reasoned Action

As part of the Theory of Reasoned Action (TRA), Attitude is defined as a person's perception of the consequence of a behavior, ranging from positive to negative (Ajzen et al., 2018). The internet enables seamless communication across distances, providing a platform for e-learning that supports information transmission, testing, and evaluation. E-learning is becoming an increasingly suitable environment for many students, influenced by factors such as their attitudes, perceived utility of digital tools, willingness to adopt new technology, and their technological background. While e-learning offers numerous advantages, such as flexibility and accessibility, students hold diverse opinions and attitudes toward this modern learning approach. Success in implementing e-learning programs largely depends on addressing these varying perspectives and ensuring that technological tools are accessible and beneficial for all learners. (Berteau, 2009).

2.3.1 Attitude

2.3.1.1 Attitude Toward Training

The first factor in influencing behavior is an individual's own attitude toward the behavior. In the context of training effectiveness, employees' attitudes are shaped by their perception of the value, context and quality of the training received. Positive attitudes toward training are influenced by beliefs that the training will improve job performance, career growth, and personal development (Fishbein & Ajzen, 1975). On the other hand, if employees view the training as irrelevant or time-consuming, they are less likely to engage meaningfully, which negatively impacts training effectiveness (Noe, 1986).

The use of personalized and engaging training methods, such as AI-driven adaptive learning tools, can help shape positive attitudes by aligning training content with individual employee needs and learning preferences (Salas & Cannon-Bowers, 2001). Such tools can demonstrate to employees that the training is beneficial and relevant to their specific job roles, thereby increasing the likelihood of engagement.

2.3.1.2 Attitude Toward Learning Measurements

The first factor in TRA, attitude, refers to an individual's positive or negative evaluation of a specific behavior. In this case, the behavior is the implementation of the Kirkpatrick Model for evaluating training effectiveness. If trainers and evaluators hold positive attitudes toward the model—believing that it provides valuable insights into training outcomes and improves organizational performance—they are more likely to invest the time and effort required to address the challenges at each level (Fishbein & Ajzen, 1975).

However, if they perceive the model as overly complex or resource-intensive, they may be less motivated to fully engage with it, leading to incomplete or inaccurate measurements. For instance, measuring behavioral change (Level 3) often requires follow-up assessments and workplace observations, which can be time-consuming and difficult to implement (Phillips & Phillips, 2016). If evaluators view this process as overly burdensome, they may be less inclined to conduct thorough behavior assessments, which ultimately undermines the effectiveness of the learning evaluation.

2.3.1.3 Attitude Toward AI in Corporate Learning and Development

The first element in TRA is attitude, which refers to an individual's positive or negative evaluation of engaging in a behavior. In the context of AI adoption for L&D, employees and decision-makers develop attitudes based on how they perceive AI's benefits and challenges. If they view AI technology as a valuable tool that enhances personalized learning, improves efficiency, and facilitates continuous development, they are more likely to support its adoption (Davenport & Ronanki, 2018). However, if AI is seen as a threat to job security, or there are concerns over data privacy and job relevance, attitudes may lean toward resistance (McAfee & Brynjolfsson, 2017).

A corporate culture that encourages innovation, experimentation, and technological adoption fosters more positive attitudes toward AI in L&D. For example, if employees have experienced success with previous technology integrations, they are more likely to have a positive attitude toward AI's potential in reshaping learning (Davenport, 2018). Conversely, a culture resistant to change or overly protective of traditional learning methods may generate negative attitudes, thus hindering AI's acceptance.

2.3.2 Subjective Norms

Subjective norms refer to the perceived social pressures from peers, supervisors, or organizational culture that influence an individual's intention to perform a behavior (Fishbein & Ajzen, 1975). According to (Van Acker et al., 2013) The Integrative Model of Behavior Prediction posits that self-efficacy, attitude, and subjective norm are key factors in explaining the intention to use digital learning methods (DLMs). These three central variables significantly influence a learner's decision to adopt DLMs. Additional predictors, such as perceived usefulness, ease of use, and technological readiness, were incorporated into the model, with their effects hypothesized to be mediated through self-efficacy, attitude, and subjective norms. This suggests that while external factors contribute, the primary drivers of DLM adoption are learners' confidence, perceptions, and social influences.

2.3.2.1 Subjective Norms in Training Effectiveness

The second component is subjective norms, which refer to the perceived social pressure to engage in a behavior. In the workplace, subjective norms regarding training participation are influenced by the expectations of managers, peers, and the organizational culture. When employees perceive that their colleagues and supervisors value training and consider it a critical part of job performance, they are more likely to participate and invest in the training (Salancik & Pfeffer, 1978).

Organizations that foster a culture of learning and development can enhance the impact of subjective norms by encouraging employees to view continuous training as essential for career advancement and team success (Noe, 1986). Peer influence also plays a crucial role,

as employees may be more inclined to engage in training if they see their colleagues benefiting from it.

2.3.2.2 Subjective Norms in Learning Measurements

Subjective norms in the workplace are influenced by leadership expectations, organizational culture, and peer behavior. If trainers and evaluators perceive that their colleagues and superiors value rigorous learning measurements, they are more likely to overcome the challenges associated with implementing the Kirkpatrick Model (Ajzen, 1991).

For example, if senior management consistently emphasizes the importance of measuring organizational results (Level 4) and links training evaluations to performance metrics, evaluators may feel a stronger obligation to accurately assess training impact despite the difficulties in isolating the training's effects from other factors (Phillips & Phillips, 2016). On the other hand, if the organizational culture does not prioritize data-driven evaluations, evaluators may be less likely to fully engage with the Kirkpatrick Model, particularly at higher levels.

2.3.2.3 Subjective Norms in Corporate Learning and Development

In the corporate environment, these norms are shaped by leadership, management, and peer expectations. When influential figures within the organizations such as senior management or team leaders—advocate for AI adoption in L&D, employees are more likely to view AI positively, perceiving its integration as aligned with the company's strategic goals (Fishbein & Ajzen, 1975). The existence of a tech-forward corporate culture where

employees feel that adopting AI is a necessary step to remain competitive also reinforces this social pressure (Huang & Rust, 2018).

Additionally, when employees see their peers successfully using AI tools for professional development, they are more likely to follow suit. In contrast, in companies where traditional training methods are strongly entrenched, employees may perceive that adopting AI is not a priority, which could create a barrier to its integration into L&D.

2.3.2.4 Subjective Norms in AI in Learning and Development

In the case of L&D professionals, subjective norms are shaped by the expectations of leadership, colleagues, and the broader industry regarding AI's role in learning.

As AI technologies become more prevalent in corporate learning, L&D professionals are increasingly expected to understand and implement these tools. If peers and superiors within an organization advocate for AI adoption as part of the L&D strategy, it creates social pressure for professionals to upskill in AI (Bersin, 2020). Conversely, in environments where traditional learning methods are still favored, the lack of such pressures may slow the pace of AI adoption. Organizations that promote innovation and emphasize the strategic importance of AI are more likely to foster norms that encourage L&D professionals to develop AI-related competencies.

Furthermore, industry-wide trends and benchmarks also serve as subjective norms. As AI-driven learning platforms become mainstream, L&D professionals are likely to feel external pressure to align with these emerging trends (Davenport & Ronanki, 2018). The absence of AI adoption by competitors or industry peers could lead to reputational risks

and a perception of being left behind, further driving professionals to upskill in AI technologies.

2.3.3 Behavioral Intentions

According to (Agudo-Peregrina et al., 2014) Behavioral Intentions in technology acceptance research, one key issue is the assumption that behavioral intention reliably predicts actual use of behavior. Many studies focus on explaining behavioral intention, often assuming a direct correlation between intention and use behavior without fully exploring this connection. As a result, research may overlook the complexities involved in translating intention into actual usage, potentially limiting a deeper understanding of the factors driving technology adoption. The second issue concerns measuring actual use behavior. While information technologies can provide objective usage data, many educational technology acceptance studies rely on self-reported data (Christensen, R. and Knezek, G., 2008.) which may be inaccurate. In pre-implementation stages, where objective or self-reported data isn't available, researchers often rely on behavioral intention or past behavior as proxies to predict future adoption. This highlights the need for more refined methods in predicting system usage during early stages of implementation.

2.3.3.1 Behavioral Intentions and Training Effectiveness

Both attitudes and subjective norms combine to influence behavioral intentions, which predict actual behavior. In the case of training effectiveness, when employees have positive attitudes toward training and perceive strong social support for participation, their behavioral intention to engage with the training increases (Ajzen, 1991). High levels of

engagement, in turn, lead to greater retention of knowledge, skills application, and overall training effectiveness (Noe, 1986).

2.3.3.2 Behavioral Intentions and Actual Behavior

When trainers and evaluators have positive attitudes toward the Kirkpatrick Model and perceive strong social support for its implementation, their behavioral intention to thoroughly measure learning outcomes increases (Ajzen, 1991). This, in turn, leads to more accurate and comprehensive evaluations.

For example, if both the trainers and evaluators believe that measuring learning (Level 2) and behavioral change (Level 3) provides critical data for improving training programs, and if they perceive that their peers and leaders share this belief, they are more likely to invest time in developing reliable pre- and post-assessments, follow-up evaluations, and workplace observations, thereby addressing the challenges associated with these levels.

2.3.3.3 Behavioral Intentions and AI Adoption

TRA states that both attitudes and subjective norms shape behavioral intentions, which then predict actual behavior. Artificial intelligence is rapidly transforming the educational landscape, particularly in e-learning. According to (Lin et al., 2022), the rise of AI-education companies, driven by technological advancements and increasing demand, is pushing e-learning into a more advanced stage. AI is being implemented in areas such as assessing users' achievements and creating dynamic, interactive learning environments. This study constructs a model to analyze the factors influencing the willingness to

continuously use AI-enabled language e-learning products, focusing on how AI can enhance user experience and improve long-term engagement in online education. In the case of AI technology adoption, positive attitudes toward AI, combined with strong social support from within the organization, increase the intention to adopt AI tools for learning and development purposes (Ajzen, 1991). In organizations where the culture is innovation-oriented, employees and managers are more likely to express a strong intention to integrate AI into their learning systems. They recognize the long-term benefits of AI in creating adaptive learning paths, improving skills assessment, and providing real-time feedback. AI innovations like natural language processing, neural networks, and speech technologies can significantly enhance Learning and Development (L&D) efficiency. They streamlined course delivery, tracked learner progress, evaluated aptitude, and suggested improvements. AI enables face and speech recognition, facilitates faster, more accurate learning, and reduces costs. By adopting AI, L&D professionals can offer flexible, efficient, and affordable learning solutions to large audiences, making the process more convenient for both instructors and learners. (Bhatt & Muduli, 2023).

However, if cultural barriers persist—such as a lack of openness to digital transformation or a fear of AI replacing human roles, behavioral intentions may remain weak, resulting in slow or superficial AI adoption. Corporate leaders need to address these cultural barriers to reinforce the perception that AI complements human roles and enhances learning, rather than being a disruptive force. According to the findings at Mahidol University (Chalita, 2021) reveal four key challenges: (1) lack of executive support, (2) mistrust in AI, (3) insufficient resources for technology implementation, and (4) concerns over AI's costs. To

succeed in the digital era, upper management must foster a strong digital culture, allocate resources for digital transformation, and enhance employees' digital competencies. Addressing these issues is essential for organizations to fully embrace and benefit from AI technologies in their operations.

2.3.3.4 Behavioral Intentions and AI Skills Adoption

Behavioral intention is shaped by attitudes and subjective norms, ultimately determining whether an individual will engage in a particular behavior (Ajzen, 1991). In this case, positive attitudes toward AI, combined with strong social norms advocating for AI adoption, will lead L&D professionals to develop the intention to acquire relevant AI skills. The integration of AI into education has the potential to transform traditional teaching methods, offering personalized learning, streamlining administrative tasks, enhancing feedback, and providing data analysis. Studies show AI's positive impact on student outcomes and teacher efficiency, but careful implementation is necessary to avoid risks and ethical issues. AI should complement, not replace, human educators, fostering more inclusive and effective learning environments. As AI technology advances, its innovative applications will continue to shape the future of education, benefiting students from diverse backgrounds and abilities (Zaman, 2023). L&D professionals with a clear understanding of AI's potential benefits, coupled with organizational and peer support, are more likely to commit to learning and implementing AI technologies. For example, AI's ability to analyze learner behavior and provide real-time feedback on learning outcomes can make L&D professionals more effective in designing personalized learning paths (Huang & Rust,

2018). As a result, their behavioral intention to engage with AI technologies strengthens, leading to practical steps such as enrolling in AI-related courses or collaborating with AI specialists to integrate these tools into learning programs.

2.3.4 Enhancing AI Adoption

AI can automate tasks across various occupations, reshaping work environments by redistributing job roles between humans and machines. It enhances human performance by taking over repetitive or physically demanding tasks, allowing workers to focus on higher-value activities and improving overall job efficiency and productivity. The adoption of AI creates new dynamics in the workplace, requiring human workers to collaborate alongside AI systems. This shift fosters a hybrid environment where humans and machines work together, demanding adjustments in skill sets and interactions to optimize productivity and harness the benefits of AI-driven collaboration (Jetha et al., 2023).

2.3.4.1 Enhancing AI Adoption through Training Effectiveness

This can be achieved by creating personalized training experiences that demonstrate clear value to employees and by fostering a culture that emphasizes the importance of continuous learning. Additionally, leadership can play a crucial role in setting expectations and reinforcing the importance of training, which helps to strengthen positive subjective norms. (Upadhyay & Khandelwal, 2019) state that AI-based training systems are smart and efficient, handling queries, curating personalized content, grading, evaluating

performance, and providing tailored feedback, making learning experiences more adaptive, contextual, and responsive to individual needs.

2.3.4.2 Enhancing AI Adoption through Engagement with Learning

Measurements

Artificial intelligence presents significant opportunities for teaching and learning, offering personalized recommendations, adaptive learning paths, integration of serious games, intelligent tutoring systems, and chatbots. These emerging applications promise substantial benefits for individualized digital learning experiences (Rerhaye et al., 2021). Enhancing AI adoption in education relies on engaging with advanced learning measurements. Over the past decade, AI advancements have enabled the analysis of vast multimodal data, improving how learning behaviors are tracked and understood. AI systems, equipped with neural networks, can segment, categorize, and visualize extensive data sets, helping to identify weak signals and support learners. These innovations enhance personalized learning experiences, making AI an invaluable tool in preventing dropout and optimizing educational outcomes (Niemi, 2021).

2.3.4.3 Enhancing Adoption through Cultural Alignment

To successfully adopt AI in L&D, organizations need to align their cultural values with technological innovation. By promoting a culture of continuous learning and encouraging openness to technological advancements, companies can shape both positive attitudes and subjective norms toward AI adoption (Huang & Rust, 2018). Providing training on AI tools, offering support to employees, and emphasizing the benefits of technology in a

culturally aligned manner will strengthen the intention to use AI in learning processes, leading to effective integration.

2.3.4.4 Enhancing AI Adoption Among Learning and Development

Professionals

By aligning organizational goals with the ongoing AI-driven virtual revolution, companies can ensure that their L&D teams remain relevant and prepared to deliver transformative learning experiences. This can be achieved by providing training opportunities, highlighting successful AI applications within L&D, and cultivating a corporate culture that values technological innovation (Davenport, 2018).

2.4 Summary of the Literature Review

In summing up the significance of AI technology adoption in Learning and Development (L&D), the discussion can be framed around four key areas: training effectiveness, challenges in learning measurements (using the Kirkpatrick Model), culture as an important factor in AI adoption, and the relevance of L&D professionals in the ongoing virtual revolution. AI has had a significant impact across various industries, with companies increasingly integrating it into their core strategies, but its full potential in Human Resources, particularly in Learning & Development (L&D), remains underutilized. Enhanced AI processes and data analytics are key to improving L&D initiatives, including knowledge sharing and training techniques (Carton, 2020). The continuous emergence of new technologies is disrupting organizational operations, with Learning and Development (L&D) initiatives often falling short of full effectiveness. Empirical evidence reveals

numerous opportunities for integrating automation and AI into L&D workflows within organisations. These technologies promise to enhance learning processes, improving efficiency and outcomes, yet many organizations have yet to fully capitalize on their potential (Klinga, 2020). AI-enabled workplace learning enhances knowledge management, provides developmental feedback, and offers a personalized education tailored to diverse learners. It also facilitates virtual mentoring and chatbot-based learning, creating a more adaptive and efficient learning environment for employees to develop skills and knowledge. (Naim, 2023).

Training Effectiveness and AI

AI has the potential to revolutionize training effectiveness by personalizing learning experiences, increasing engagement, and enabling real-time feedback. Huang and Rust (2018) emphasized how AI can adapt learning paths to individual learners' needs, improving overall training outcomes. Thus, AI can act as a major contributor to increasing the effectiveness of training programs by addressing individual learner gaps and continuously optimizing learning processes. AI can significantly enhance the effectiveness of training programs by personalizing learning experiences and addressing individual learner gaps (Chen et al 2020). Through continuous analysis of learners' performance and behavior, AI can identify areas where each learner struggles, providing targeted interventions and customized resources to improve understanding. AI-driven platforms can adapt content delivery based on individual progress, ensuring that learners receive the right material at the right time. Additionally, AI can optimize learning processes by analyzing large datasets to refine training strategies, offering real-time feedback, and adjusting

teaching methods to suit diverse learning styles. This results in more efficient, tailored learning experiences, leading to improved retention, engagement, and overall performance. By leveraging AI, organizations can create dynamic, data-driven training programs that continually evolve, maximizing both learner success and organizational outcomes.

Challenges in Learning Measurements: Kirkpatrick Model

The Kirkpatrick Model, commonly used for evaluating training programs, faces several challenges in measuring learning outcomes. A key issue is assessing long-term behavior change and real-world impact, as these results may take time to appear and are often influenced by external factors (Yamin et al 2019). Many organizations tend to focus on immediate reactions and learning gains, neglecting deeper evaluations of the training's practical effectiveness. Additionally, accurately collecting and analyzing data to link training efforts to business outcomes can be complex. To address these challenges, organizations need more comprehensive and continuous evaluation methods to gauge the true impact of their learning initiatives (Garavaglia 1993). AI can play a crucial role in overcoming these challenges by automating the measurement of learning outcomes and analyzing behavioral changes post-training (Nawaz et al 2022). AI's data-driven approach aligns with the third and fourth levels of the Kirkpatrick Model, as AI tools can track behavioral changes and link them to business results, providing L&D professionals with clearer insights into training impact (Bersin, 2020). However, as Davenport and D'Amico (2018) highlighted, challenges around data privacy, integration, and technical complexity may hinder full AI adoption, pointing to the need for cultural alignment and up-skilling.

2.4.1 Human Society Theory

Culture as an Important Factor in AI Adoption

Culture plays a significant role in determining how quickly and effectively AI technologies are adopted in L&D. Fishbein and Ajzen (1975) suggest that subjective norms (social pressures) and organizational values significantly impact behavioral intentions. A corporate culture that promotes innovation, openness to new technologies, and continuous learning will positively influence the adoption of AI in L&D. As Davenport (2018) noted, organizations that fail to build a culture of innovation often encounter resistance from Learning and Development (L&D) professionals, which can slow the adoption of AI-driven learning technologies. L&D teams may resist embracing new technologies due to concerns about job displacement, unfamiliarity with AI, or fear of changing traditional methods. This resistance can hinder the successful integration of AI in corporate learning programs. To address this, it is essential for companies to foster an AI-friendly culture that encourages openness to technological advancements, provides training to up-skill employees, and promotes collaboration between human expertise and AI capabilities Lee and Park, (2023). By doing so, organizations can ensure smoother AI implementation, enhance learning outcomes, and drive innovation, leading to improved overall performance and adaptability in the evolving corporate landscape.

2.4.2 Relevance of L&D Professionals in the AI Revolution

The ongoing virtual revolution, fueled by AI, has increased the importance of L&D professionals adapting to new tools and technologies. Bersin (2020) highlighted that for L&D professionals to remain relevant, they must acquire new skills, including AI literacy,

data analysis, and digital facilitation. L&D professionals who view AI adoption positively and receive strong organizational support are more likely to up-skill and use AI effectively to enhance learning outcomes Govender and Adegbite (2022). This positive attitude, coupled with social backing, encourages professionals to integrate AI into their roles, improving training processes and driving success in learning initiatives. The future of L&D professionals largely hinges on their ability to embrace AI and remain proactive in adapting to new technologies. By staying ahead of technological advancements, L&D experts can ensure they continue to add value to their organizations and support innovation in corporate learning environments (Carson, 2021).

2.4.3 Significance in Relation to Literature

In conclusion, the integration of AI into corporate L&D represents both opportunities and challenges, as discussed in the literature. AI can enhance training effectiveness, but its success depends on overcoming measurement challenges (through tools like the Kirkpatrick Model), fostering an AI-driven corporate culture, and ensuring the relevance of L&D professionals in the rapidly evolving technological landscape (Al Samman, 2024). These factors highlight the interconnectedness of attitudes, subjective norms, and behavioral intentions. By addressing these key areas, organizations can harness AI to drive significant improvements in learning outcomes, make training programs more efficient and personalized, and ensure that L&D professionals remain vital contributors in the era of digital transformation. (Bhatt & Muduli, 2023) Describe AI innovations like natural language processing, neural networks, interactive voice response, and speech-to-text technologies that can significantly enhance the efficiency of Learning and Development

(L&D) processes (Luo & Yang, 2022). These tools aid in articulating learning modules, identifying learners via face and speech recognition, and completing coursework. AI also supports evaluating learning aptitude, testing memory, tracking progress, measuring effectiveness, and providing real-time feedback to help learners identify and correct mistakes. Furthermore, AI enables L&D professionals to create faster, more accurate, and cost-effective learning solutions for large audiences, making the process flexible, efficient, and convenient while reducing expenses for learners and organizations alike (Khandelwal et al., 2024).

CHAPTER III: METHODOLOGY

3.1 Overview of the Research Problem

The fast-paced nature of innovation necessitates continuous employee upskilling. Organizations require personalized and accessible micro-learning modules to boost engagement and ensure effective training transfer (Maity, S., 2019). With over twenty years in the industry, I have observed a significant transformation in learning and development. Today's corporates, service providers, and learners increasingly demand highly tailored and innovative learning experiences that not only engage but also deliver practical implementation value—fundamentally changing how learning is perceived and applied.

Workplace learning outcomes heavily rely on learner motivation, yet are often constrained by traditional training models and limited incorporation of organizational behavior theories. Various learning approaches and contextual elements that affect engagement emphasize the importance of exploring psychological engagement to better understand motivation and improve workplace learning outcomes (Noe et al., 2010).

Training and development efforts are frequently reactive rather than strategically focused. While they may enhance skills, they often yield minimal impact on employee commitment, satisfaction, or alignment with broader strategic objectives. Weak connections with strategic and performance management systems result in poor integration across HR functions, limiting the measurable contribution of training to competitive advantage. Aligning training with strategy is essential to enhance its organizational value (Rowland et al., 2017).

To deliver effective training, organizations must respond to technological evolution and generational change. Mobile and social learning are gaining traction, aligning with the millennial workforce's preference for contemporary, easily consumed learning formats (Solis, R., 2017).

3.2 Operationalization of Theoretical Constructs

Research Approach: Mixed Methods

This study employs a mixed methods research approach, integrating both quantitative and qualitative techniques to gain a holistic understanding of how Artificial Intelligence (AI) is shaping the future of Learning and Development (L&D) in corporations and Small and Medium Enterprises (SMEs) across the Indian subcontinent.

Quantitative Research

The quantitative phase involves structured surveys administered through Zoho Survey, a widely adopted platform in India known for its robust functionality and user-friendly interface (Salam, A. and Hajriyanti, R., 2022).

The target respondents include:

1. Learners within Corporates and SMEs – These participants represent the end-users of L&D initiatives. The survey captures their learning preferences, engagement levels, and openness to AI-driven learning solutions.
2. Learning Service Providers – This group includes organizations and freelance facilitators involved in creating and delivering learning content. The survey explores their current practices, challenges, and insights into AI integration.

Qualitative Research

In-depth, semi-structured interviews are conducted with senior leaders from corporates and SMEs, including:

- CHROs
- Managing Directors
- Heads of Learning and Development
- Heads of Human Resources
- Learning Leads

These interviews aim to uncover strategic perspectives, operational challenges, and opportunities related to AI adoption in L&D frameworks.

Participant Selection and Scale

Over 123 learners and 5 service providers/freelancers were carefully selected by the researcher, leveraging professional networks built over two decades.

10 senior executives from diverse industries were identified for their ability to provide candid, strategic insights into the transformation of L&D through AI.

This triangulated methodology ensures both breadth and depth in insights, combining scalable survey data with rich, contextual qualitative input.

3.3 Research Purpose and Questions

The primary objective of this research is to examine the current learning practices of corporations, learners, and service providers in India, focusing on their willingness and ability to adapt to rapid technological advancements. The study seeks to evaluate their

readiness to embrace technology-based learning, particularly through the integration of AI tools, which are becoming critical in delivering customized, scalable, and efficient learning solutions. By exploring key factors such as timelines, payoffs, flexibility, and the apprehensions associated with adopting new learning methodologies (Blumberg, P., 2016). This research aims to uncover the barriers and opportunities for enhancing learning engagement and implementation value in a fast-evolving environment.

Furthermore, this study aims to provide a comprehensive analysis of the readiness of Indian corporations to navigate and evolve a VUCA (Volatile, Uncertain, Complex, Ambiguous) (Shet, 2024) environment by adapting their learning practices to meet future demands. It will serve as a deep dive into the existing frameworks while identifying gaps and strategies for fostering greater flexibility and innovation in workplace learning (Ahsan, M.J., 2024). The research will also assess the role of service providers and learners in supporting this transformation, emphasizing the importance of collaboration, customization, and a forward-thinking approach to learning in an ever-changing business landscape.

The objectives of the study are:

1. A comprehensive analysis of the evolving landscape of learning and development in India, specifically focusing on the integration of modern technologies, including AI tools.
2. We will examine the key factors that hinder corporations, learners, and service providers from fully embracing technological changes, uncovering barriers that may be impeding

progress. Identify the advantages and disadvantages of using technology and specifically AI tools for learning practices

3. We will also explore the innovative work that corporations and learning partners are undertaking to create value for learners through technology, highlighting the current advancements and strategies being employed.

Additionally this study aims to address the advantages and potential drawback of incorporating AI tools into learning practices, evaluating their effectiveness and impact on learner engagement (Owoc,2019). By understand learners 'perspectives on both adopting and resisting AI-driven learning, we will gain insights into their readiness to embrace such changes. The outcomes of these objectives, coupled with the research questions, will provide a thorough understanding of the present and future practices across India.

This research will not only underline the growing need for organizations to incorporate AI and other technologies into their learning frameworks (Russ, M., 2021) but also offer valuable recommendations for successfully navigating this transformative journey, ensuring that learning and development practices remain relevant and effective in the future.

3.4 Research Design

This paper aims to explore and clarify the assumptions underpinning quantitative and qualitative research, enhancing understanding of epistemological issues in institutional research. By articulating these assumptions, it fosters awareness of aligning different types of knowledge with their appropriate purposes (Hathaway, 1995). Action research in management remains underutilized due to philosophical divides. This paper bridges

internal and external perspectives, framing action research as practical knowing. It proposes a general empirical method and the concept of interiority, focusing on how we know, to synthesize perspectives and advance actionable knowledge. (Coghlan, 2011). This paper explores the benefits of using AI in organization-led learning initiatives, focusing on service provider awareness and willingness to propose innovative solutions. It examines technology's role in enhancing learner engagement, measuring learning effectiveness during and after workshops, and improving efficiency and effectiveness in client engagements and training administration.

In detail, the study is intended to prove the answers to the following research questions:

1. Assess the current practices in corporate L&D functions and their key challenges in terms of time, cost, retention of learning, etc. (based on sample size)
2. Assess the readiness to accept and embrace AI as part of the learning and development journey
3. How the learning triangle of corporate clients, their learners and service providers perceive the future of learning and development keeping AI as a key driver

3.5 Population and Sample

The population selected for this study was split into three (3) groups: The first group would be Corporations and SMEs (target audience would be HR Heads, Learning Heads, Learning Administrators and Talent Heads, Managing Director, Operations Director), Second group would be Service providers (Learning and Development firms, Freelance service providers, Learning consulting firms). The third group would be learners (Learners would be individuals who are the end users of technology for learning needs). Trends will

be identified, and research questions addressed using surveys and interviews. By leveraging diverse sampling strategies, the study aims to gather a robust sample size, enabling insightful conclusions and statistically significant findings to effectively support the research objectives. This research would provide an initial overview of the AI-driven learning and development landscape across various regions of India and neighbouring countries, based on the gathered sample size. The sample size was determined using the below approaches:

1. Determine the number of corporations who are using/willing to use AI for learning and development initiatives within India region (based on sample size)
 - a. Since there are no public records of corporations using AI tools for learning and development initiatives, it is decided to use a purposive sample strategy to find a representative sample. Representative samples are essential for multi-purpose surveys when multiple target variables need to be explored (Grafström & Schelin, 2014). 10 corporations were selected from out of a population of around 500 corporations in India which is 2%, 123 users were selected out of an extended circle of 1230 users which is 12.3% and 5 service providers were selected out of a total of 50 service providers across the country which is 10% of the population based on empirical studies and data.
 - b. Total population size: 500 corporations and SMEs Sample size: 10
 - c. Total user population size: 1230 users Sample size: 123
 - d. Total Service providers: 50 Sample size: 5

- i. Percentage of people with retention of learning to application of learning conversions using present practices and how it can change when adopting AI tools
 - ii. This study will conduct interviews with 10 corporate and SME executives across the Indian subcontinent, alongside surveys of 123 users and 5 service providers. The goal is to assess current learning and development practices, as well as organizational and individual awareness, readiness, and willingness to adopt AI tools and practices, gathering essential data for meaningful insights.
2. Evaluate the number of corporations and SMEs, learners, and learning service providers and freelancers adopting AI tools and technology to improve learner engagement quality and measure post-learning effectiveness.
3. Identify the challenges corporations and SMEs face with their current approach to addressing learning needs and explore alternative technology-driven solutions.

3.6 Participant Selection

Participants were selected based on the following types.

For users and direct beneficiaries of learning and development, participants who were part of corporations spread across the Tier 1 and Tier 2 cities employed in BFSI, Pharmaceutical, Engineering, Manufacturing, Education, IT & ITES to list a few. The corporations chosen for study are existing clients of the researcher. Participants are Managing Directors and Directors, Learning and Development Heads and Leads and Chief

Human Resource Officers. These 10 corporations were selected from out of a population of around 500 corporations in India which is 2%, 123 users were selected out of an extended circle of 1230 users which is 12.3% and 5 learning service providers were selected out of a total of 50 learning service providers across the country which is 10% of the population based on empirical studies and data.

3.7 Instrumentation

For the purpose of this study, a two-pronged data collection approach has been designed to ensure a comprehensive understanding of the corporate learning landscape across various industries and service providers in India.

1. Survey Questionnaires

The first method involves administering structured survey questionnaires. These will be directed towards two key groups:

- **Corporate Learners:** Individuals from diverse industries located in Tier 1 and Tier 2 cities across India. This group will provide insights into their learning preferences, experiences, expectations, and challenges encountered in corporate training environments.
- **Learning Service Providers:** Organizations and agencies delivering corporate learning solutions, primarily based in Tier 1 cities. Their input will shed light on current trends, challenges, innovations, and market demands in corporate learning services.

The questionnaires will comprise both closed-ended and Likert-scale based items to facilitate quantitative analysis to capture richer qualitative data. The design of the survey instrument will ensure clarity, brevity, and relevance to maintain respondent engagement and improve data quality.

2. In-depth Personal Interviews

The second method focuses on qualitative insights through semi-structured, in-depth interviews with senior executives from top corporations in India. These interviews will be conducted via phone and Zoom meetings to allow flexibility and convenience for participants.

The interview protocol will include open-ended questions designed to elicit deep, narrative responses regarding:

- Strategic priorities in corporate learning and development
- Perceived effectiveness of current training interventions
- Future expectations from learning service providers
- Barriers and enablers to successful corporate learning initiatives

Interview guides will be prepared to ensure consistency across interviews, while also allowing for probing questions based on the flow of conversation. Each session will be recorded (with participant consent) and transcribed for detailed thematic analysis.

Rationale for the Chosen Instruments

Using a combination of surveys and interviews allows the study to balance breadth and depth. Surveys will provide quantifiable data across a broad sample, while personal interviews will add contextual richness and capture nuanced insights that surveys alone may miss. Together, these instruments are expected to provide a holistic view of the evolving corporate learning ecosystem in India.

Validity and Reliability

To ensure the rigor of the study, attention has been paid to the validity and reliability of the data collection instruments.

- **Validity:** Content validity will be established by consulting subject matter experts in corporate learning and survey design during the development of both the questionnaires and the interview guide. Pilot testing will be conducted with a small group of corporate learners and learning service providers to ensure that the survey items and interview questions are clear, relevant, and comprehensive. Necessary modifications will be made based on pilot feedback to enhance the instruments' ability to accurately capture the intended constructs.
- **Reliability:** To ensure consistency, standardized procedures will be followed during survey administration, and interview protocols will guide all personal interviews. For the survey, internal consistency will be evaluated for key constructs. In the case of interviews, reliability will be enhanced by recording, minimizing subjective bias during interpretation.

This combined focus on validity and reliability will help ensure that the data collected is both accurate and trustworthy, strengthening the overall credibility of the research findings.

3.8 Data Collection Procedures

For data collection purposes, the study will be broken into two parts to align with the research design: Qualitative (Surveys) and Quantitative (structured personal depth interviews). This study utilizes surveys alongside action research, engaging participants during the research phase to evaluate the effectiveness of the proposed solutions for

organizations willing to embrace and not willing to embrace AI tools. Surveys will be distributed to 123 learners, five corporations, and 10 service providers across various regions of the Indian subcontinent.

Zoho survey forms is popular, reliable and provides multiple options to create surveys in India (Gautam et., al 2025) will be used to design surveys, enabling seamless online distribution and data collection. This approach offers flexibility, convenience, and the ability to reach respondents across various regions in Indian subcontinent, ensuring a broader and more inclusive sample. Surveys will be provided to approximately 123 users of learning tools to gather the data. The questions asked will be similar, although geared toward different levels of audiences. The purpose of the surveys is to show that there is an advantage of using AI tools for customised learning solutions, flexibility, high levels of learning engagement and user value.

3.9 Data Analysis

In this study, primary data will be analyzed and synthesized to assess the current and future trends in corporate learning and development, with a focus on the AI landscape across the Indian subcontinent. By leveraging the sample size, the study will identify opportunities corporations may be missing out on. Using a pragmatic approach aligned with action research, the data from surveys across two distinct audience groups—service providers and learners—will be compiled, analyzed, and interpreted to offer results-driven solutions for organizations and SMEs. This research aims to enrich existing scholarships by introducing fresh perspectives and theories. Descriptive analysis will initially be conducted using Zoho survey forms to summarize data and identify correlations with target responses.

Subsequently, inferential statistics will be used to extrapolate trends from the sample to the broader population, enabling generalizations for future research. The study will explore correlations between responses from corporations, service providers, and learners regarding the need for AI-driven technological advancements in learning.

3.9 Research Design Limitations

While every effort has been made to ensure rigorous data collection and analysis, certain limitations in the research design must be acknowledged. Firstly, despite broad outreach efforts, the survey sample may not fully represent the entire population of corporate learners across industries and cities. The findings, therefore, may be influenced by the specific characteristics and experiences of the respondents rather than offering a universally generalizable view.

Secondly, while respondents were encouraged to provide honest and thoughtful feedback, their answers are inevitably shaped by their current level of awareness, understanding, and engagement with artificial intelligence (AI) in corporate learning contexts. As AI is an evolving field, many responses might reflect the present level of familiarity and immediate experiences rather than long-term strategic perspectives.

Thirdly, the study assumes that the participants in the in-depth interviews provided comprehensive and reflective insights. However, challenges remain regarding how the practical application and perceived opportunities of AI in learning and development were interpreted. Differences in organizational maturity, readiness for AI adoption, and subjective understanding of AI's potential could influence how respondents articulated their views.

These limitations are acknowledged as natural constraints in exploratory research in emerging fields like AI in learning and development. Nevertheless, every effort was made to minimize bias and ensure the robustness of the findings through careful instrument design, diverse sampling, and triangulation of data sources.

3.9 Conclusion

This chapter has systematically outlined the research design, methodology, instrumentation, and limitations that framed the study. Employing both primary and secondary data collection methods, the research sought to capture a comprehensive view of existing learning practices, the current level of readiness to embrace artificial intelligence (AI) in learning engagements, and the strategic direction for future learning initiatives incorporating AI technologies. Data gathered from corporate learners, learning service providers, and corporations highlighted the opportunities and challenges associated with AI-driven learning transformations. Although certain limitations—such as sample representativeness and context-specific understanding—were identified, the study offers a robust and credible basis for assessing AI readiness within the corporate learning ecosystem and informs future pathways for its effective implementation. Recognizing these methodological foundations and limitations is essential for interpreting the study's findings and framing meaningful conclusions and future recommendations.

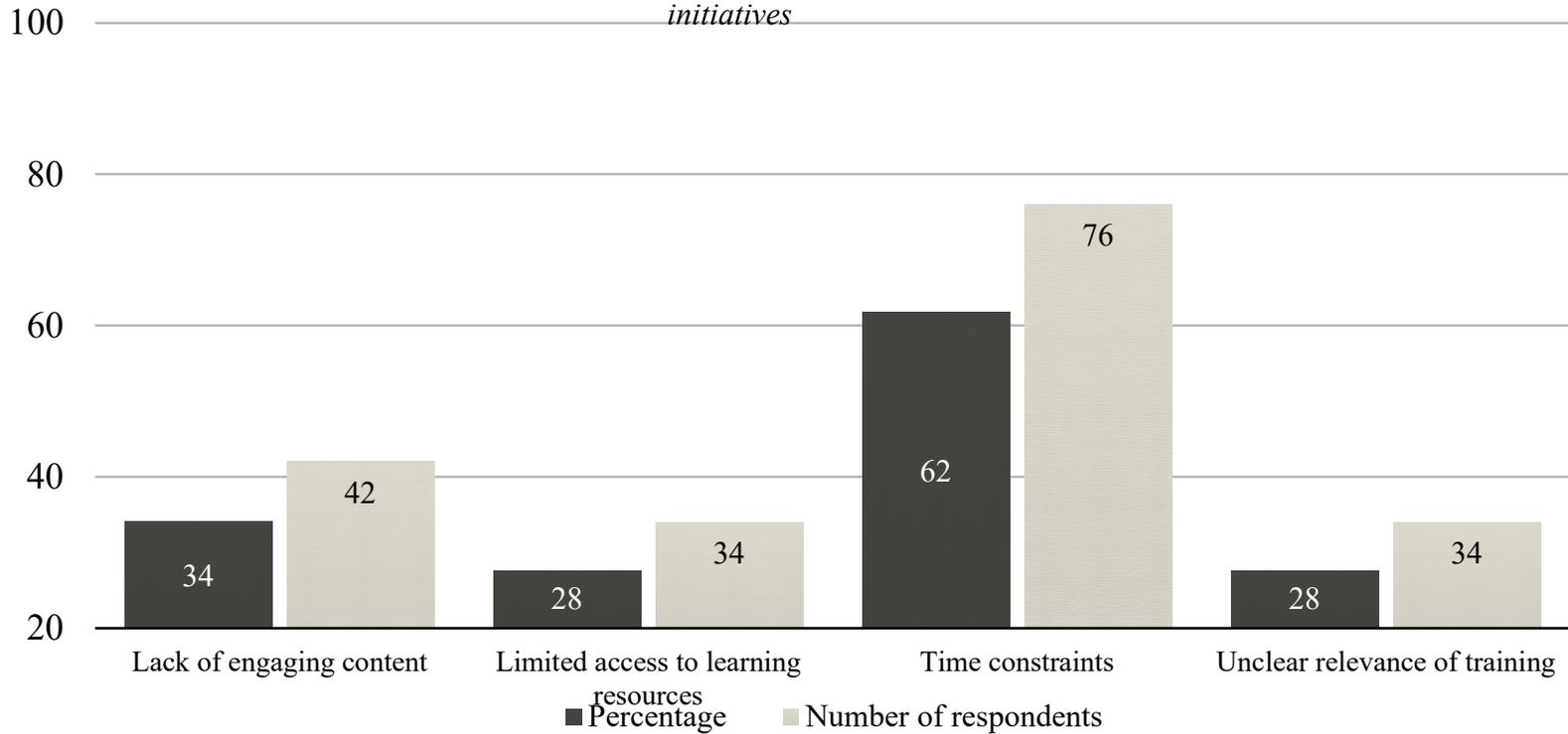
CHAPTER IV: RESULTS

4.1 Assess the current practices in corporate L&D functions and their key challenges in terms of time, cost, retention of learning (based on sample size)

To assess current practices within corporate Learning and Development (L&D) functions and uncover key challenges related to time, cost, and learning retention, a mixed-methods approach was adopted. Quantitative data was collected from 123 respondents through structured survey questionnaires administered to corporate learners across various industries in India, offering measurable insights into existing learning experiences. A parallel survey was conducted with five learning service providers to capture the supply-side perspective on evolving training models and delivery challenges. Complementing these surveys, qualitative data were gathered from 10 corporations and SMEs through in-depth interviews with senior leaders from both large corporations and small-to-medium enterprises. Interview participants included Managing Directors, Directors, CHROs, Learning Heads, and Learning Leads—individuals responsible for shaping and executing learning strategies within their organizations. This triangulated approach allowed the study to generate a comprehensive and balanced view of corporate learning practices from an L&D perspective.

The above figure 1, depicts the survey findings drawn from a total of 123 respondents who participated in the study, comprising corporate and SME learners across various industries.

Figure 1 - Challenges faced by learners while participating in Corporates and SME's learning initiatives



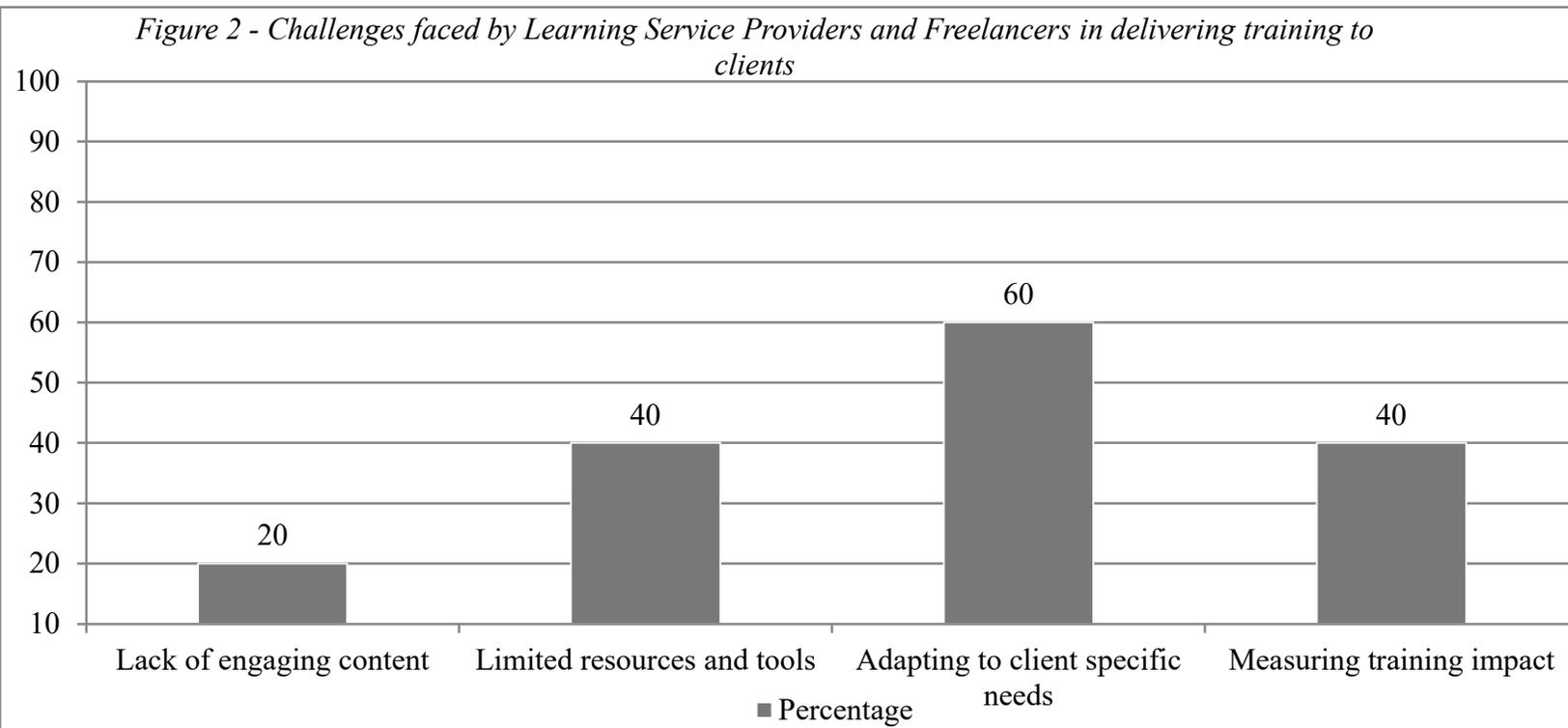
The data highlights key challenges faced in current learning and development (L&D) practices.

The most prominent challenge identified was time constraints, cited by 62% of respondents, which corresponds to 76 individuals. This finding suggests that managing time for learning amidst demanding work schedules remains a critical barrier to participation in structured training programs.

The second most frequently reported challenge was the lack of engaging content, reported by 34% of respondents, representing 42 individuals. This underscores the need for organizations to focus on creating more interactive, relevant, and stimulating learning

experiences to improve learner engagement and knowledge retention. These insights point to the importance of rethinking both the format and delivery of L&D programs to address practical constraints and enhance effectiveness.

Figure 2 - Challenges faced by Learning Service Providers and Freelancers in delivering training to clients



The above figure 2, presents the findings from the survey conducted with five learning service providers, aimed at understanding the key operational and strategic challenges they face in the current corporate learning landscape.

Among the respondents, 60% indicated that a major challenge lies in adapting to client-specific needs, reflecting the growing demand for customized training solutions tailored to diverse organizational contexts. Additionally, 40% of the responses pointed to the limited

availability of resources and tools required to deliver impactful and scalable training programs. An equal proportion (40%) also highlighted a significant gap in measuring the effectiveness and impact of training initiatives, suggesting a need for better assessment frameworks and feedback mechanisms. These responses underscore the operational constraints faced by service providers and signal the need for stronger alignment between client expectations, resource readiness, and evidence-based training outcomes.

In addition to the findings from the surveys conducted with corporate learners and learning service providers, the research further presents valuable insights drawn from in-depth personal interviews with key stakeholders who play a pivotal role in shaping the learning and development landscape across the Indian subcontinent.

The following are verbatim capture samples of personal in-depth interviews conducted with key stakeholders:

Current Learning and Development Practices:

Table 1 - Industry representation of corporates and SME learners

Industry	No of participants from the respective industries
BFSI & Fintech	20
Manufacturing	25
Engineering	12
IT & ITES & Telecom	36
Healthcare	3
Automobile	3
Real Estate & Construction	4
Others	20

Table 2 - City wise representation of corporates and SME learners who responded to the survey

City	No of respondents
Chennai	68
Mumbai	19
Delhi, NCR	5
Bangalore	13
Kolkata	3
Coimbatore	2
Ahmedabad	1
Pune	2
Hyderabad	2
Unspecified	8

Table 3 -Men and Women representation of corporates and SME (Small and Medium Enterprises) learners who responded to the survey questionnaire

Gender	Number of respondents	Percentage
Men	103	84
Women	20	16

Table 4 - Personal In-depth Interview Questions

<p>Section 1: Current Learning and Development Practices</p>	<ol style="list-style-type: none"> 1. Can you describe the current learning and development (L&D) practices in your organization? 2. What are the primary challenges your organization faces in implementing effective L&D initiatives? 3. How do you currently measure the success of your L&D programs?
<p>Section 2: Awareness and Openness to AI in L&D</p>	<ol style="list-style-type: none"> 1. How familiar are you with the use of AI in learning and development? 2. What are your initial thoughts about integrating AI into your organization's L&D practices? Acceptability is absolutely good and high. 3. Are there any concerns or barriers your organization might face in adopting AI-driven learning solutions?
<p>Section 3: Readiness to Embrace AI</p>	<ol style="list-style-type: none"> 1. Does your organization have a strategy or timeline for adopting advanced technologies like AI for L&D? 2. How do you assess your organization's readiness to embrace AI tools for employee development?
<p>Section 4: Enhancing Learning Engagement with AI</p>	<ol style="list-style-type: none"> 1. How do you think AI can improve learner engagement in training programs? 2. In your opinion, how effective could AI be in tailoring learning experiences to individual needs?
<p>Section 5: AI in Content Creation and Curation</p>	<ol style="list-style-type: none"> 1. How do you currently create and curate content for training programs? 2. What role do you think AI can play in streamlining content creation and customization for L&D initiatives?
<p>Section 6: Identifying Learning Needs and Measuring Success</p>	<ol style="list-style-type: none"> 1. How does your organization identify learning needs across different teams and roles? 2. Do you see AI as a tool to better understand and predict learning needs? If so, how? 3. How can AI be leveraged to measure the impact and success of a learning intervention more effectively?

Table 5 - Interviewed industries, positions and locations

Industry	Position	Location
BFSI	Group President HR	Mumbai - India
Manufacturing & Engineering	Head - L&D and Talent	Ahmedabad - India
Information Technology - BFSI - Fintech	Director & Co founder	Mumbai - India
Insurance	Head - L&D	Chennai - India
Manufacturing & Construction, Mining	Sr.Vice President - Head - Centre of Excellence (COE)	Mumbai - India
Telecom and Information Technology	Sr.Vice President - Head of Learning & Centre of Excellent (COE)	Pune - India
Manufacturing, Engineering and Construction	Group Head HR, Chief Human Resource Officer	Chennai - India
Engineering & Energy	Head - HR	Kolkata - India
Engineering and Automobile	Managing Director - Indian Sub continent	Mumbai - India
Insurance	Head - L&D	Mumbai - India

Table 6 - Current Learning and Development Practices

Respondent 1

The organization follows a blended approach to Learning and Development (L&D), incorporating both internal and external interventions. Approximately 80% of the training programs are conducted online via Learning Management Systems (LMS) or virtual meetings (e.g., Microsoft Teams). However, certain training modules—such as induction programs, technical training, and select behavioral training—are conducted in-person, as they require hands-on interaction. The acceptance of classroom training remains high, though for remote locations, online learning is the preferred mode.

Respondent 2

The organization's Learning and Development (L&D) strategy is divided into two primary interventions: in-house and outsourced training. In-house training focuses on both behavioral and technical aspects, specifically targeting Graduate Engineer Trainees (GETs) and diploma holders who require machine-related training. A group of certified internal trainers are responsible for delivering behavioral and soft skills training. However, for specialized behavioral training such as leadership coaching, external trainers are engaged. These leadership programs are segmented into different levels—mid, mid-senior, and top leadership. Additionally, cost-related training and ISO training are outsourced.

Respondent 3

Organizations today follow a mix of stakeholder-driven and structured approaches to Learning and Development (L&D). Most organizations rely on direct discussions with business heads to identify training needs. However, the subjectivity involved in these discussions presents a challenge, as different stakeholders may interpret learning needs differently.

Respondent 4

The organization follows a structured approach to Learning and Development (L&D), with a primary focus on sales training. Training programs are categorized into two broad areas: management training and agent training. Management training is delivered predominantly through face-to-face interactions, especially during induction programs, while agent training involves a blend of classroom and online methods. The training framework is designed to enhance employees' knowledge, skills, and work habits, aligning with the strategic needs of the business.

Respondent 5

In modern corporate settings, Learning and Development (L&D) practices are evolving rapidly, incorporating various methodologies to enhance employee skills and organizational efficiency. In the current organization under study, L&D follows a role-based and journey-based approach. This structure ensures that training is aligned with employees' career progression and functional requirements. Most interventions are conducted through a hybrid model, blending e-learning with face-to-face sessions, thereby ensuring effective learning experiences across different programs.

Respondent 6 The organization follows an internal academy model, where most training programs are managed in-house, with selective outsourcing for content and faculty. The focus is on functional, technical, and behavioral training, with a combination of face-to-face and technology-driven learning methods.

Respondent 7 The current learning and development (L&D) practices in the organization are largely focused on face-to-face training without incorporating blended learning methods. The organization primarily invests in technical training, with no emphasis on soft skills. Additionally, leadership development is confined to people managers.

Respondent 8 The organization's learning and development (L&D) approach primarily relies on face-to-face interactions, with a mix of technical and behavioral training across different levels. The majority of the training is conducted in-house, ensuring that the content is relevant to organizational needs and aligned with company objectives. However, blended learning or digital formats have not yet been incorporated into the current training model.

Respondent 9

The current learning and development (L&D) landscape within organizations is primarily a mix of technical and behavioral training, conducted in-house through face-to-face sessions. However, L&D initiatives face several challenges, including financial constraints, inconsistent perception of value, and difficulties in ensuring the continuity of programs. Additionally, L&D is often taken for granted, making it difficult to evaluate its effectiveness.

Respondent 10

Organizations today employ a combination of in-house training and virtual learning methods to upskill their employees. In the insurance sector, the learning and development (L&D) function is closely integrated with sales, focusing primarily on functional training. Companies emphasize distribution-focused learning and have dedicated training managers and content teams, leveraging in-house subject matter expertise to reduce costs and align training with business expectations.

Table 7 - Challenges in Implementing L&D Initiatives

<i>Respondent 1</i>	<p>One of the primary challenges is learner acceptability—getting employees to actively engage in training programs. Many learners are skeptical about how a training session can effectively address their skill gaps, whether in technical or soft skills. Overcoming this perception and ensuring participation is a key hurdle.</p>
<i>Respondent 2</i>	<p>The primary challenges in L&D implementation stem from the industry’s production-oriented mindset, which makes training a lower priority. Employees often struggle with grasping new technology, including Learning Management Systems (LMS), which creates barriers to digital learning adoption. This challenge affects both blue- and white-collar workers, making time a critical constraint. Encouraging employees to see training as an opportunity for personal and professional development remains an ongoing struggle.</p>

Subjectivity involved in these discussions presents a challenge, as different stakeholders may interpret learning needs differently. This lack of standardization necessitates multiple levels of validation to ensure the relevance of learning initiatives.

Respondent 3

Another significant gap is the measurement of the success of L&D programs. While some organizations use structured frameworks, others rely on business outcomes as a key indicator of effective training. Given that a large proportion of corporate learning involves functional, compliance, and technical training, knowledge transfer can be gauged relatively easily. However, this does not account for behavioral and soft skill development, which are more challenging to measure in terms of tangible business impact. Lack of standardization necessitates multiple levels of validation to ensure the relevance of learning initiatives.

Respondent 4

One of the major challenges in agent training is the difficulty in ensuring participation. As agents operate on a freelance model, bringing them into office settings for multi-day training sessions proves to be a significant hurdle. Additionally, the complexity of the agency business, where agents can work with multiple companies and compare competing products, poses a challenge to skill development. On the management training side, constraints include budget freezes, particularly at the end of financial quarters, and limited time availability due to sales pressures. These financial and time-related constraints hinder the seamless execution of training programs.

Respondent 5

Despite the structured approach, the primary challenge faced in L&D initiatives is ensuring 123% attendance throughout long-term training programs. Since these programs typically span three to six months, maintaining engagement over the entire period is a challenge. Additionally, in manufacturing organizations, cost conservation often influences the extent and frequency of L&D initiatives, requiring optimization of training expenses.

Respondent 6 The primary challenges include ensuring team members' availability for training due to business commitments, measuring the business impact of behavioral training, and rapidly integrating technological advancements across different business units. The decentralized decision-making structure further complicates the adoption of integrated technological solutions across all businesses.

Respondent 7 One of the major challenges in implementing L&D initiatives is the lack of leadership commitment to investing in employee learning and development. There is a notable gap in management's visibility regarding L&D programs, and financial constraints further limit the scope of training initiatives.

Respondent 8 As a startup, there are frequent business emergencies that make it difficult to gather employees for workshops and training sessions.

The company faces budgetary constraints, limiting the scope of investment in advanced L&D initiatives.

There is a scarcity of quality trainers who understand the unique business requirements of startups, making it difficult to find the right expertise for effective training delivery.

Respondent 9

Success measurement remains a challenge, with financial results being a key indicator, though organizations have not yet matured to a level where such an assessment can be executed comprehensively. There is a clear need for structured evaluation methods that can quantitatively and qualitatively assess the impact of L&D initiatives.

Respondent 10

One of the major challenges in implementing L&D initiatives is resistance from sales managers, who often prioritize immediate business goals over long-term employee development. This short-sighted approach results in lower participation in training programs, as managers believe experienced recruits can contribute to sales without undergoing structured learning. Additionally, high attrition rates further complicate induction processes.

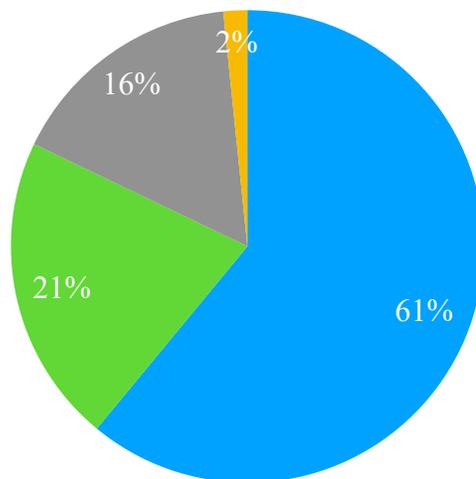
4.2 Assess the readiness to accept and embrace AI as part of the learning and development journey

This section presents findings derived from both survey questionnaires and in-depth personal interviews conducted with the same set of corporate learners, learning service providers, and key organizational stakeholders. The results offer critical insights into the current level of awareness, acceptance, and preparedness to integrate artificial intelligence (AI) into learning and development initiatives within the Indian corporate and SME ecosystem.

Figure 3 - Participants readiness to accept and embrace AI as part of the learning and development journey

and SME ecosystem.

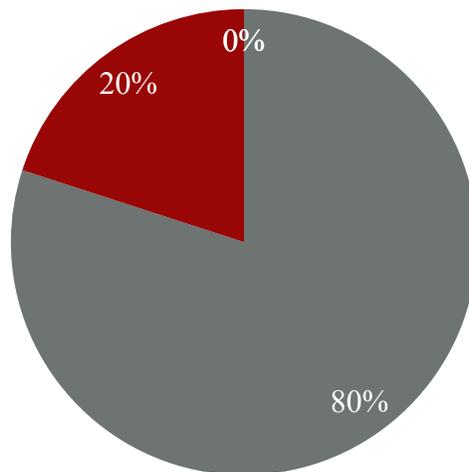
■ Very open ■ Somewhat open ■ Neutral ■ Not open



The above figure 3 clearly illustrates the level of openness among respondents to embrace artificial intelligence (AI) as part of their learning and development journey. Out of a total of 123 respondents from various Tier 1 and Tier 2 cities across the Indian subcontinent, a significant 61% indicated that they are very open to integrating AI into their learning experiences. Additionally, 21% of respondents reported being somewhat open to the idea. These findings reflect a positive outlook toward the adoption of AI in corporate learning, suggesting a growing awareness of its potential benefits and a willingness among learners to explore AI-driven solutions to enhance their development. This also signals an important shift in learner mindset, with many respondents open to innovation and change within traditional L&D frameworks.

Figure 4 - Learning service providers and Freelancers readiness to adopting AI in their training solutions

■ Very open ■ Somewhat open ■ Neutral ■ Not open



As illustrated in figure 4 above, majority of learning service providers in India demonstrate a strong willingness to adopt artificial intelligence (AI) as part of their offerings to corporations and SMEs. A clear 80% of the respondents indicated that they are very open and ready to integrate AI into their learning solutions, while the remaining 20% stated that they are somewhat ready. These findings suggest a high level of preparedness and strategic alignment among service providers toward embracing AI-driven innovations in corporate learning, signalling a positive shift in the future of L&D delivery in the Indian context.

Following is the verbatim capture of what the critical stakeholders, policy makers and decision makers have shared during the personal in-depth interview:

Table 8 -Familiarity with AI in L&D and initial thoughts

Respondent 1

The organization is well aware of AI's capabilities and is already exploring its use in predictive modeling. AI-driven learning is transitioning from learner-led discovery to chatbot-led discovery, which can identify behavioral trends and personalize learning experiences. There is a high level of enthusiasm and acceptance for AI integration within L&D. AI is viewed as a valuable tool for enhancing learning effectiveness, engagement, and scalability.

Respondent 2

There is a strong intent to integrate AI into content development, effectiveness measurement, and assessment processes. The organization envisions a seamless integration between its automated systems and AI-driven solutions to enhance assessments. AI will enable the automation of quiz creation, jumbling questions, and tracking performance through leaderboards. Furthermore, AI can aid in training effectiveness evaluation, offering data-driven insights into learner engagement and competency improvement.

There is a growing awareness of AI's potential in the L&D domain. Organizations have begun investing in AI specialists who will develop customized solutions to enhance learning. AI is seen as a tool that can integrate and analyze learning needs more efficiently, helping organizations identify skill gaps more precisely.

Respondent 3

The initial perception of AI in L&D is positive, with an expectation that it will streamline learning pathways and make the learning process more seamless. However, concerns regarding data security, particularly in industries dealing with sensitive customer information, remain a key barrier to AI adoption. Ensuring regulatory compliance and protecting customer data will be critical in successfully integrating AI into corporate learning frameworks.

Awareness of AI applications in L&D is moderate. Familiarity exists with AI tools such as ChatGPT, Deepseek, and Gemini AI, but there is limited direct experience in applying AI within L&D frameworks. The current understanding of AI is more theoretical than practical. There is a lack of enthusiasm regarding AI's role in the organization's L&D practices, primarily due to the absence of direct experience. This skepticism may stem from an unclear value proposition or insufficient exposure to AI-driven L&D solutions.

Respondent 4

There is a lack of enthusiasm regarding AI's role in the organization's L&D practices, primarily due to the absence of direct experience. This skepticism may stem from an unclear value proposition or insufficient exposure to AI-driven L&D solutions.

The organization demonstrates a strong awareness of AI in L&D and has already integrated AI tools such as ChatGPT to create knowledge repositories. These repositories store technical and tacit knowledge while ensuring data security. Generative AI is actively used to enhance operational efficiency and information-sharing across multiple plants, particularly in production and troubleshooting processes.

Respondent 5

A notable application of AI is in data analysis, particularly in sales and marketing, where AI helps in identifying product trends across different geographies. Insights derived from AI-powered data analytics also play a crucial role in functional training, making the training content more relevant and evidence-based.

While the organization is open to AI adoption, the primary concern remains data security. Since AI-driven solutions often rely on extensive data collection and processing, safeguarding sensitive information is a priority for the organization. However, aside from security concerns, the company has embraced AI significantly, particularly in operational domains.

Awareness of AI in L&D is high, but the practical execution and full-scale implementation remain a work in progress.

Respondent 6

Employees are continuously learning and adapting AI-based applications in various L&D initiatives. Currently, AI adoption in L&D is rated at 2-3 on a scale of 10, but it is expected to rise to 6-7 in the next two to three years. The organization acknowledges AI's potential in enhancing efficiency and effectiveness in training programs.

The organization exhibits curiosity about AI's capabilities within HR and L&D. AI is recognized as a powerful tool that can read, interpret, and analyze vast amounts of performance data, enabling it to derive meaningful insights beyond the limitations of standard dropdown lists. AI's ability to assess specific learning needs and provide a broader level of understanding at a macro level (e.g., 50,000 ft view) is acknowledged.

Respondent 7

There is a strong belief that integrating AI into L&D practices will make learning more aligned, visible, and impactful. AI has the potential to elevate L&D's role in the organization by enhancing its visibility among employees, people managers, and senior leadership. AI is seen as an enabler rather than a disruptor, capable of refining and amplifying existing L&D functions.

Respondent 8 While the respondent is aware of AI applications in L&D through industry colleagues, there has been no direct implementation within the organization. However, there is an awareness of AI-driven tools being used elsewhere in the HR and L&D sectors. Given the organization's small size (approximately 123+ employees), L&D efforts are currently limited. However, AI integration could enhance objectivity in measuring learning outcomes and performance improvements, making the impact of training more visible and data-driven.

Respondent 9 AI is widely recognized as a transformative force in L&D, and its role is expected to become significantly more pronounced in the next three to four years. Organizations that fail to integrate AI into their learning strategies may struggle to adapt to changing technological landscapes.

Despite this awareness, AI adoption faces resistance due to concerns about IT security threats and data protection. While AI is already being used in specific applications such as report generation, video creation, and language transcription, full-scale implementation in L&D remains limited due to organizational hesitancy.

Respondent 10 There is growing awareness of AI applications in L&D, particularly in leveraging data analytics to predict learning needs. The increasing emphasis on data-driven decision-making has led some professionals to explore AI tools such as ChatGPT, Gemini, Copilot, and DeepSeek for automation and analytics. AI's ability to analyze variables influencing learning outcomes can enhance training impact and efficiency.

Table 9 -Challenges and barriers to adoption of AI in corporations and SMEs

Respondent 1 One of the critical challenges lies in ensuring data security and managing the sensitivity of the information involved. Given that we are dealing with customer and employee data—both of which are classified as sensitive and subject to regulatory compliance—there is an inherent need to uphold stringent standards of confidentiality, integrity, and ethical handling. Navigating these concerns is essential to maintain trust, comply with legal frameworks, and safeguard organizational reputation.

Despite this enthusiasm, IT division is concerned about data protection, particularly regarding storage and accessibility. Ensuring compliance with security protocols and aligning AI tools with the organization's IT architecture will be critical in overcoming these concerns.

Respondent 2

However, concerns regarding data security, particularly in industries dealing with sensitive customer information, remain a key barrier to AI adoption. Ensuring regulatory compliance and protecting customer data will be critical in successfully integrating AI into corporate learning frameworks.

Respondent 3

From an organizational standpoint, there are no declared barriers to adopting AI in L&D. The company already claims to use AI in various operational aspects, such as product modelling and claims prediction. However, there is a disconnect between corporate claims and individual perspectives, highlighting a potential gap in AI awareness and its perceived effectiveness in the L&D domain.

Respondent 4

Respondent 5

While the organization is open to AI adoption, the primary concern remains data security. Since AI-driven solutions often rely on extensive data collection and processing, safeguarding sensitive information is a priority for the organization. However, aside from security concerns, the company has embraced AI significantly, particularly in operational domains.

Respondent 6

There are no major barriers identified in AI adoption, apart from the need for content validation. As AI applications continue to evolve, ensuring content accuracy and relevance will be a crucial consideration.

Respondent 7

There are concerns regarding AI's implementation maturity. The level of AI adoption in an organization depends on its business priorities, and if AI does not contribute directly to core operations, its adoption in L&D may be deprioritized. Data security and reliability also remain concerns, as AI lacks an extensive past record to validate its decision-making accuracy.

Respondent 8

There are no immediate concerns or barriers anticipated in adopting AI-driven learning solutions. The organization is open to integrating AI within the next couple of years as part of its evolving L&D strategy.

Respondent 9

Despite this awareness, AI adoption faces resistance due to concerns about IT security threats and data protection. While AI is already being used in specific applications such as report generation, video creation, and language transcription, full-scale implementation in L&D remains limited due to organizational hesitancy.

Respondent 10

AI's potential is yet to be widely recognized by senior management, necessitating leadership training to build a foundational understanding of AI's benefits.

Participants readiness to accept and embrace AI as part of the learning and development journey

Table 10 - Strategic plan, readiness to embrace AI and timelines for adoption

Respondent 1

While the organization is ready for AI implementation, practical execution will take time. AI adoption requires rigorous vetting and a structured proof-of-concept process. Unlike sales initiatives that demonstrate ROI within three months, AI adoption requires a longer period—typically two to three years—to generate measurable impact and mature within the organization. Although AI is a widely discussed topic, there is a gap between conceptual acceptance and practical implementation. Corporates demand quick, tangible outcomes, whereas AI-driven transformations require time. While excitement around AI is evident, actual deployment remains a work in progress

The organization has no fixed deadline for AI adoption but plans to implement it within the next six to eight months. AI will be integrated into content management, talent acquisition, behavioral competency frameworks, and assessment processes. One of the anticipated benefits is increasing objectivity in training need assessments, which are currently subjective. AI-driven analysis will provide data-backed insights to determine specific areas of focus for individual employees. As a technology-driven organization, there is openness to AI adoption. With SAP Fiori serving as the primary interface, integration with AI tools is expected to be straightforward. AI initiatives will be driven through a top-down approach, ensuring alignment with organizational goals and leadership buy-in.

Respondent 2

Organizations are increasingly prioritizing AI adoption, with some actively recruiting AI specialists to explore its applications in L&D. The objective is to identify core areas where AI can enhance efficiency, particularly in learning engagement and skill gap analysis. Some organizations aim to be AI-ready within a year, indicating a strong commitment to technological transformation.

Respondent 3

Human Resources (HR) departments are expected to play a significant role in AI-driven learning initiatives. However, while there is enthusiasm about AI adoption, organizations recognize that transitioning from traditional methods to AI-powered learning solutions will require careful planning, phased implementation, and a shift in organizational mindset.

Currently, there is no formal strategy or timeline for implementing AI in L&D. There is no visibility into any immediate plans for integration. While there is no definitive strategy, there is an expectation that AI implementation may begin in the fiscal year 2025-26. However, this decision remains contingent upon management priorities and approvals.

Respondent 4

Respondent 5

The organization has already begun implementing AI-driven technologies across various functions, demonstrating its readiness to adopt AI for employee development. For instance, drone surveys are utilized for limestone mine assessments, showcasing the organization's willingness to leverage AI for process optimization. Given this proactive approach, it is highly likely that AI-driven L&D tools will be integrated into employee development strategies in the near future.

Respondent 6

There is no fixed strategy or timeline for AI adoption in L&D; instead, AI tools are integrated as per business requirements. Currently, 70-80% of content creation processes involve AI for collation, design, and verification. The organization has a high level of readiness for AI adoption, driven by strong leadership support, including from the chairman. AI is viewed as an important technological advancement that aligns with business needs.

Currently, the organization does not have a defined strategy or timeline for AI adoption in L&D. However, there is an expectation that within the next two to three years, a structured AI adoption strategy will emerge.

Respondent 7

Despite the absence of a formalized approach, the readiness to embrace AI is high due to significant organizational needs and promising potential applications. There is a strong inclination toward AI adoption, indicating that once strategic direction and implementation frameworks are established, AI integration could accelerate.

At present, there is no formal strategy or timeline for adopting AI in L&D. The organization is focused on process improvements through CRM systems. However, within the next two years, AI adoption in L&D is expected to become a strategic priority.

Respondent 8

Currently, the organization is not fully prepared for AI implementation in L&D, as the focus remains on foundational process improvements. However, there is an overall recognition of AI's potential benefits, indicating a future readiness to explore AI-driven tools.

Respondent 9

Currently, most organizations lack a clear strategy or timeline for AI adoption in L&D. However, there is a strong personal inclination among L&D leaders to explore AI's potential. The availability of extensive data, training materials, and video content presents an opportunity for AI to enhance accessibility, improve efficiency, and reduce time spent searching for information.

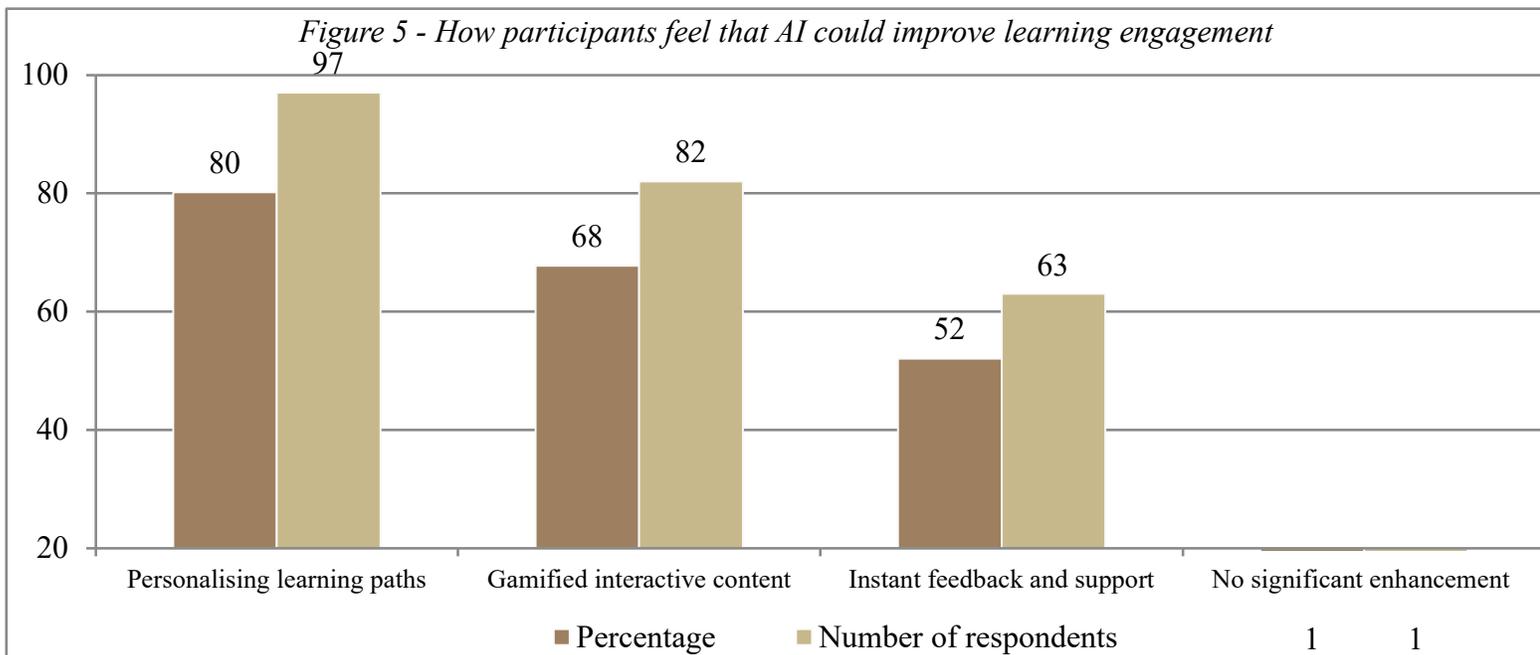
The motivation to embrace AI is high, but institutional support and strategic alignment are necessary for widespread adoption. Organizations must establish a structured roadmap for AI implementation to realize its full potential.

Respondent 10

While there is no formal strategy or timeline for AI adoption in L&D, there is optimism regarding its future implementation. Organizational readiness is dependent on securing executive buy-in and fostering a culture receptive to AI-driven transformation. Leadership awareness and commitment to AI adoption will be crucial in driving its integration into employee development processes.

4.3 How the learning triangle of corporate clients, their learners and service providers perceive the future of learning and development keeping AI as a key driver

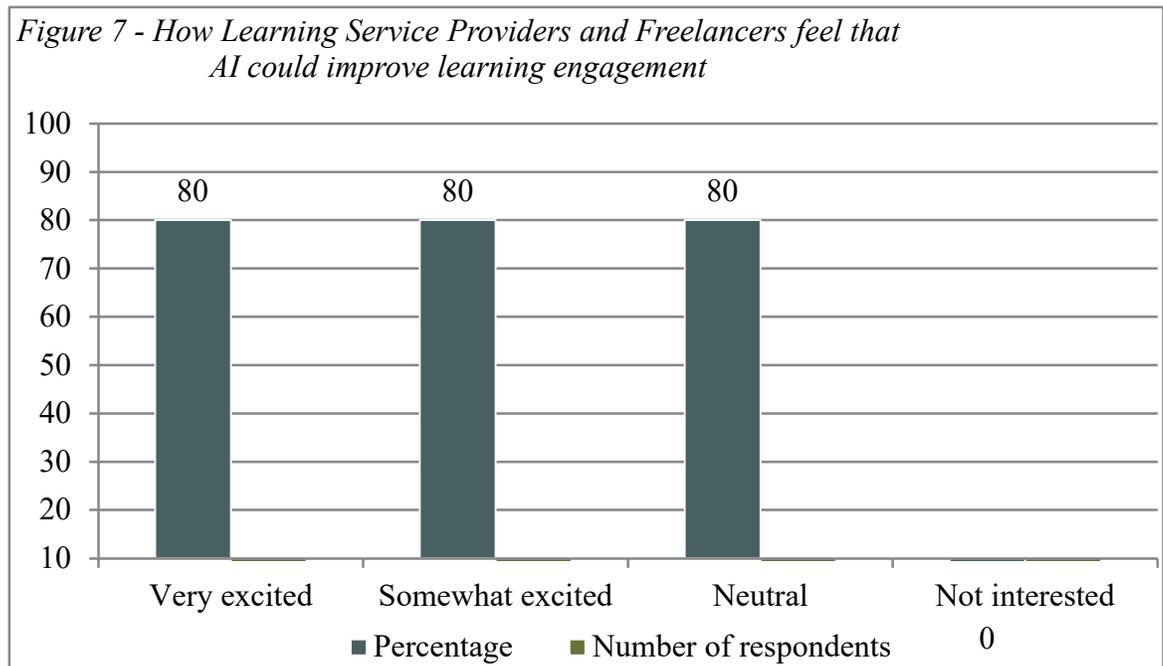
This section consolidates findings from survey questionnaires and in-depth interviews conducted with corporate learners, learning service providers, and key organizational stakeholders. The insights reveal how the learning triangle—comprising corporate clients, their learners, and service providers—collectively perceives the future of learning and development, with artificial intelligence (AI) emerging as a central enabler. Participants expressed growing interest, optimism, and a readiness to explore AI-driven solutions, viewing them as instrumental in enhancing learning effectiveness, personalization, and scalability across the corporate training landscape.}



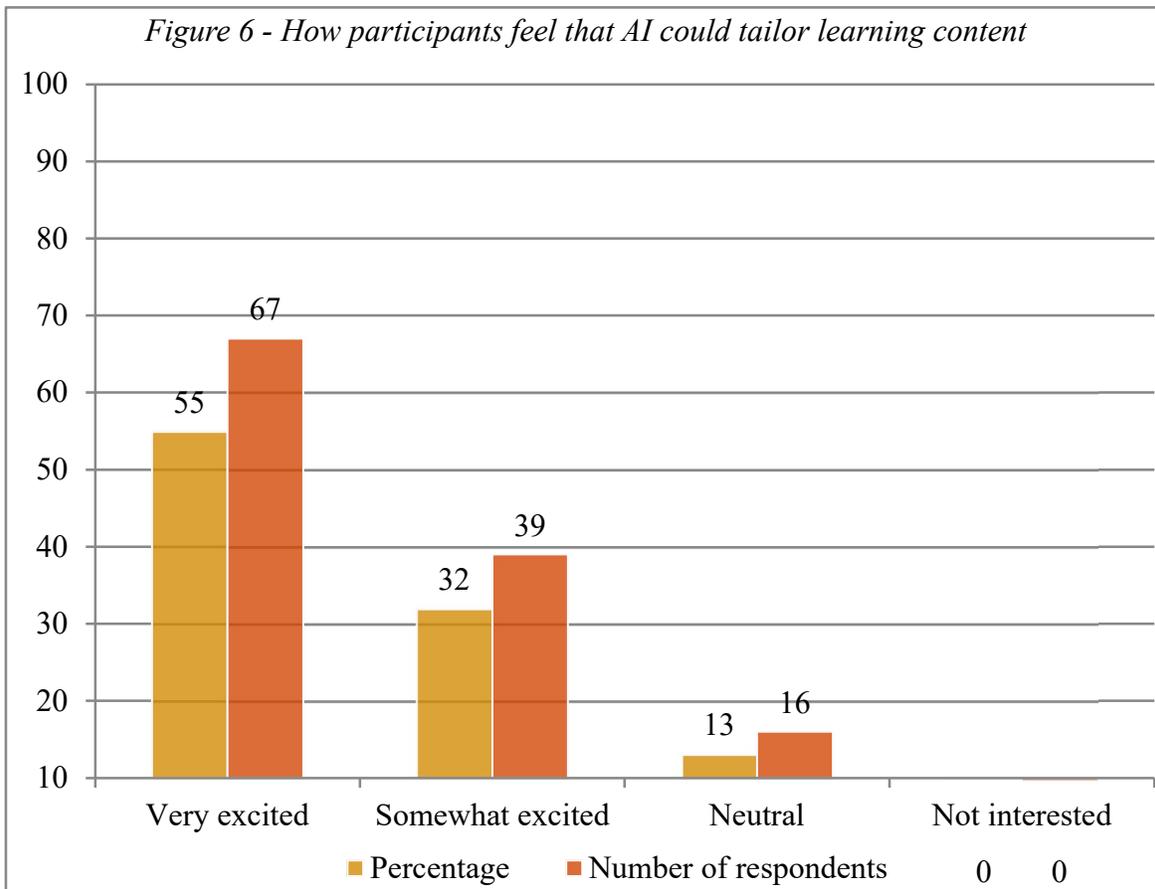
The above figure 5, clearly shows that 97 out of 121 respondents, representing 80%, believe that AI can enhance their learning engagement through personalised learning paths.

Additionally, 82 respondents which is 68% indicated that AI could deliver gamified and interactive content, while 63 respondents, accounting for 52%, felt that incorporating AI into the learning journey could offer instant feedback and support.

The above figure 6, indicates that 67 out of 122 respondents, representing 55%, are very excited about the potential of AI to curate content tailored to their learning needs, while 39 respondents, or 32%, expressed that they are somewhat interested in exploring this capability. Notably, none of the 122 respondents reported being uninterested in this aspect of AI-driven learning.



In figure 7, we could see that 80% of the learning service providers and freelancers surveyed stated that AI can assist in automating administrative tasks. Additionally, 80% also believed that AI can enhance content interactivity, and an equal 80% indicated that AI



can help personalize learning experiences.

Further to the findings mentioned above from corporate and SME learners and Learning service providers and freelancers, we can see the inputs received during personal in-depth interviews conducted with heads of learning and development, HR heads and Managing Directors of corporates and small and medium enterprises.

Section 4: Table 11 - Enhancing learning engagement with AI

Respondent 1

AI has the potential to act as a consistent learning companion, adapting to individual learning patterns and preferences. By internalizing user behavior, AI can personalize learning journeys, making training more engaging and effective. Traditionally, training modules are designed for teams or functions rather than individuals. AI can shift this paradigm by understanding learners' preferred learning styles and skill gaps. AI-driven systems can map current competency levels and recommend tailored learning paths. Additionally, AI can prevent redundancy by filtering out content that learners are already proficient in, ensuring a focused and efficient learning experience.

By allowing learners to progress at their own pace, AI enhances engagement and improves retention. Pre-AI learning environments offered limited flexibility, but AI now enables tailored content delivery, fostering a more interactive learning experience.

Respondent 2

Machine learning algorithms further refine training methodologies by analyzing learner behavior and customizing learning paths accordingly. This ensures that employees receive content relevant to their needs, thereby increasing overall training effectiveness.

AI is perceived as a game-changer in learner engagement. By analyzing learner behavior, AI can personalize training modules, focusing on micro-learning, interactive formats, and tailored content delivery. The ability of AI to adapt to different learning styles and competency levels is particularly valuable, as it can help standardize knowledge transfer across teams while addressing individual learning preferences.

Respondent 3

Organizations have historically struggled with aligning learners of varying competency levels within the same job roles. AI can address this challenge by identifying individual learning needs, providing customized content, and ensuring each learner progresses at an optimal pace. This personalization can enhance overall learner engagement and ensure better knowledge retention.

AI presents opportunities to enhance participant engagement in training programs. In trainer-led models, effectiveness is often dependent on the trainer's teaching style, which may not cater to all learners. AI can personalize content delivery, ensuring that training is adapted to different learning styles. This customization could significantly improve retention and engagement.

Respondent 4

AI is expected to be highly effective in customizing learning experiences. Through adaptive learning algorithms and machine learning capabilities, AI can modify training modules to fit individual needs, something that traditional methods struggle to achieve.

AI presents a significant opportunity to enhance learner engagement in corporate training programs. One of the key advancements in this regard is the shift towards digital documentation, eliminating the need for physical training materials. Additionally, AI-powered attendance monitoring and exceptional reporting enable organizations to track and analyze an employee's learning journey effectively.

Respondent 5

While AI has the potential to tailor learning experiences to individual needs, there is limited visibility on how this can be achieved practically. However, in assessment centers and development programs, AI-driven tools can objectively evaluate competencies and identify proficiency levels, thus improving training personalization and effectiveness.

AI's impact on learner engagement varies by training type. It is expected to be highly effective in functional and technical training, where automation and interactive tools enhance the learning experience. However, for behavioral training, AI adoption is projected to take longer to generate substantial impact, as face-to-face interactions are considered more effective.

Respondent 6

AI has significant potential in identifying individual learning needs but may be less effective in delivering customized learning experiences at this stage. While AI-driven assessments can analyze competency gaps, its ability to personalize training programs remains an area of further exploration.

AI is expected to enhance learner engagement by making training more interactive and personalized. AI-driven learning methodologies can dynamically adapt based on an individual's responses, providing relevant exercises, tools, and interventions.

AI's ability to tailor learning experiences is particularly valuable in identifying learning patterns and suggesting courses that align with an individual's professional development.

Respondent 7

Traditional learning methods are checklist-driven, whereas AI can provide data-driven insights that recognize potential, retrieve relevant information, and customize learning paths.

AI also acts as a developmental assistant, ensuring that an individual's learning journey continues even when managers change. This continuity fosters a long-term, structured approach to professional development, reducing dependency on individual managers for learning guidance.

AI has the potential to significantly enhance learning experiences by providing data-driven insights, varied perspectives, and objective feedback. The vast availability of research and structured learning paths facilitated by AI can improve the effectiveness of training programs.

Respondent 8

AI can effectively tailor learning experiences by analyzing learning patterns, suggesting relevant courses, and customizing engagement strategies. It can act as a developmental assistant, ensuring continuity in an employee's learning journey, even amidst managerial transitions.

AI has the potential to revolutionize learner engagement through personalized and adaptive learning experiences. By tailoring content to an individual's experience, comprehension level, and preferred learning duration, AI can facilitate more efficient and effective learning. Features such as microlearning modules and flexible content selection based on user prompts can significantly enhance engagement and retention.

Respondent 9

AI also offers benefits in terms of flexibility, adaptability, and cost-effectiveness, enabling organizations to deliver customized learning experiences at scale.

AI holds significant promise in enhancing learner engagement by offering personalized, interactive training experiences. Unlike traditional face-to-face learning, AI can deliver microlearning modules tailored to individual learning styles, improving retention and focus. AI's ability to customize content, adapt to learner needs, and facilitate self-paced learning can lead to more effective training outcomes.

Respondent 10

By leveraging AI's machine learning capabilities, organizations can design adaptive learning pathways that cater to varied competency levels. AI can bridge knowledge gaps by identifying individual learning needs and curating customized content. This level of personalization is beyond human capability and can significantly improve learning efficiency.

Section 5: Table 12 - AI in content creation and curation

Respondent 1 AI can significantly enhance content creation by automating storage, organization, and retrieval. In new business areas, AI can assimilate stakeholder inputs and generate up to 90% of required content, improving efficiency. This allows L&D teams to focus on higher-value tasks while reducing manual effort.

Respondent 2 The organization actively uses Generative AI (Gen AI) for content development. AI tools streamline content creation by providing industry-specific terminology, data visualization, and multimedia resources. Specific tools used include ChatGPT for text-based content Wolfram Alpha for data visualization, InVideo for video creation, Gamma for presentations, DALL·E for AI-generated images

AI significantly reduces the time and effort required to develop comprehensive training materials. It enhances user experience by optimizing visualization, interface design, and interactivity.

One of the most significant challenges in corporate training is content management. Many organizations have vast repositories of training materials stored across multiple systems, making content retrieval and organization a cumbersome task. The current approach to content curation involves a combination of online searches, research materials, and compliance manuals, which can be time-consuming and inefficient.

Respondent 3

AI can revolutionize content management by automating content retrieval, categorization, and organization. By building an internal knowledge library, AI can streamline the process of developing training modules, workshops, and course structures. Additionally, AI-powered systems can interact with learners, allowing them to customize their learning methodologies, duration, and content format based on their individual needs.

Content for training programs is developed using multiple sources, including Google searches, books, regulatory guidelines (e.g., SEBI and IRDA), prior workshops, and subject matter expertise. The process is largely manual, relying on human intelligence and validation.

Respondent 4

AI has the potential to streamline and standardize content creation, eliminating trial and error. By integrating AI into the organization, content curation can become more efficient, with AI serving as a central knowledge repository. AI can extract, synthesize, and present relevant training material from diverse global sources, reducing the effort required for manual validation. The TEEM (Time, Effort, Efficiency, and Management) benefits of AI could transform how training content is designed and delivered.

Respondent 5 AI is already being leveraged for content creation, particularly in the development of graphics and multimedia for training programs. The role of AI in streamlining content customization is vast, but its full potential remains largely unexplored. AI's ability to curate and personalize content based on learner needs is a futuristic concept that could redefine corporate training methodologies. The limitless possibilities of AI in content creation indicate that as technology matures, its adoption in L&D will expand significantly.

Respondent 6 AI is already being used for approximately 60% of content development, including instructional design, case study materials, and other training resources.

The organization sees AI as a tool to enhance efficiency, improve productivity, reduce time spent on content development, lower costs, and increase accuracy. AI-driven content solutions are expected to further optimize training material design and delivery.

Currently, content creation relies on a mix of manuals, books, Google searches, and learning forums to source and develop training materials.

Respondent 7 AI is expected to streamline content creation by addressing the challenge of inaccessible organizational knowledge. A significant amount of data exists within the organization (e.g., plant operations, sales, market trends), but accessing this information is difficult due to its decentralized nature. AI can serve as a knowledge repository, efficiently retrieving and organizing relevant information, thereby saving time, effort, and resources.

By leveraging AI, organizations can ensure that content development is not only efficient but also aligned with business needs, improving customization and relevance.

Presently, training content is created using online resources such as Google and ChatGPT. There is a reliance on external information sources rather than an internally structured content development process.

Respondent 8 AI can play a significant role in streamlining content creation by aggregating and organizing information from vast digital libraries. It can reduce the time required for research and ensure that content is highly relevant to the organization's needs, thereby improving efficiency and accuracy.

Respondent 9 Currently, content creation in L&D is based on need identification, literature review, and online searches. AI can streamline this process by leveraging keywords and prompts to generate relevant, efficient, and high-quality content. This automation can save time, reduce redundancy, and ensure that learning materials remain up-to-date with industry trends and business needs.

In compliance-driven industries, training content must adhere to regulatory requirements. Organizations primarily rely on standardized modules for technical and functional training, with subject matter experts contributing content. Behavioral training materials are sourced externally or developed in-house using existing resources.

Respondent 10

AI can revolutionize content curation by automating the structuring and standardization of training materials. By analyzing existing knowledge repositories, AI can streamline content organization, reduce manual effort, and ensure consistency. This automation can save time, reduce dependency on human intervention, and improve training efficiency.

Section 6: Table 13 - Identifying learning needs and measuring success

Training needs are primarily identified through an annual Training Needs Identification (TNI) process. This involves discussions with senior leaders, middle managers, and junior employees through structured conversations, group discussions, and focused groups. Additionally, emerging learning needs are addressed throughout the year.

Respondent 1

Currently, training needs assessments rely on manual processes and memory-based inputs, leading to gaps in capturing comprehensive data. AI can bridge this gap by providing granular insights into individual learning requirements and predicting evolving skill needs based on data analysis.

AI can significantly improve the measurement of training impact. Unlike traditional methods that struggle to attribute business growth directly to training, AI can identify patterns and correlations between training interventions and business performance. AI-driven analytics can provide deeper insights into individual learning curves, market trends, and seasonal impacts, offering sharper and more meaningful data for decision-making.

The organization identifies training needs primarily through Performance Management Systems (PMS) and discussions between employees and their supervisors. Training gaps are assessed by evaluating competency levels against predefined benchmarks. Additional insights are gathered through HOD discussions, which inform training priorities at the department and role levels.

Respondent 2

AI has the potential to enhance predictive analysis by examining employee data trends. By analyzing daily data consumption, AI can forecast learning requirements, prioritize urgent training needs, and suggest individualized development plans.

Measuring training impact has historically been challenging, especially in soft skills programs. AI can bridge this gap by tracking pre- and post-training performance metrics. For instance, in sales training, AI can analyze changes in customer acquisition rates, revenue growth, and market penetration. AI-driven analytics will enable organizations to map individual performance improvements, customer engagement metrics, and business outcomes more accurately.

Traditional methods of identifying learning needs rely on conversations with department heads, performance appraisals, and subjective supervisor assessments. These methods often lack accuracy, as they depend on human perception and memory. AI can address this issue by leveraging machine learning to analyze employee performance data and predict learning needs based on real-time task execution.

Respondent 3 By assessing individual learning speeds, attention spans, competency gaps, and role requirements, AI can offer precise learning recommendations tailored to each employee's development needs. This predictive capability allows for proactive skill development rather than reactive training interventions.

Measuring the success of training interventions has also been a challenge in traditional corporate learning environments. AI can significantly enhance this process by tracking learners' progress, conducting assessments, and analyzing behavioral changes post-training. AI can also integrate real-world application metrics, such as problem-solving capabilities, retention levels, and project completion efficiency, to determine the actual impact of a learning program.

Currently, learning needs are identified through an annual consultation with departmental leaders. Training goals are aligned with broader organizational objectives, while regulatory changes and new product introductions also drive ad hoc training requirements.

Respondent 4

While AI's potential in identifying learning needs is acknowledged, there is limited clarity on how it could be effectively implemented. AI could facilitate a more customized learning approach by processing large volumes of organizational data. Unlike traditional methods, where new employees have limited access to organizational insights, AI-driven solutions could provide instant access to relevant data, aiding in quicker decision-making and more effective training interventions.

There is currently no clear understanding of how AI could measure the impact of training interventions. However, AI could potentially revolutionize training measurement by analyzing learner responses, conducting real-time assessments, triggering actions, and tracking behavioral changes post-training. AI-driven solutions could provide more granular insights into learning effectiveness, going beyond conventional metrics like course completion rates.

The organization employs multiple approaches to identify learning needs across teams and roles. These include stakeholder consultations and appraisal-based analyses to determine skill gaps and training requirements. AI can significantly enhance this process by analyzing managerial conversations and extracting insights that can be used to address training needs in real time.

Respondent 5

Furthermore, AI-driven analytics can be leveraged to measure the impact and success of learning interventions. While traditional impact measurement relies on job performance over an extended period, AI can provide real-time assessments, track progress, and identify areas for improvement more efficiently. This data-driven approach ensures that learning interventions are continuously optimized for better outcomes.

The organization uses three primary sources to determine learning requirements: performance management system (PMS) during appraisals, business review discussions where L&D representatives identify emerging needs, and assessment/development centers for skill evaluations.

Respondent 6 Rather than predicting learning needs, AI can play a crucial role in timely identification of performance gaps, minimizing delays in addressing training requirements. Predictive analytics in AI can support this process, although practical implementation remains at an early stage.

AI has the potential to enhance measurement accuracy by providing predictive and post-mortem analysis of training interventions. AI-driven data analytics can deliver quicker and more precise evaluations, helping organizations refine and optimize their L&D strategies.

Learning needs are currently identified based on standard managerial inputs, performance feedback, and discussions with employees. The effectiveness of this approach largely depends on a manager's ability to accurately identify skill gaps and training needs, which introduces subjectivity and inconsistencies.

AI offers a more objective and data-driven alternative by analyzing employee profiles, manager feedback, and performance trends. AI can extract insights from an individual's past experiences, CV, and work performance to suggest tailored learning interventions. Additionally, AI-driven assessments can provide unbiased competency evaluations, eliminating fears of judgment that may arise in human-led feedback discussions.

Respondent 7

In terms of measuring learning impact, AI is particularly useful for large-scale interventions. AI can analyze manager feedback across multiple locations, condensing qualitative insights into digestible summaries. This capability enables HR leaders and senior management to evaluate L&D effectiveness without being constrained by time-consuming manual data analysis.

The organization primarily identifies learning needs through:

Internal performance assessments, One-on-one dialogues and open-house discussions , Performance management systems (PMS), where KRAs and IDPs are reviewed

AI can significantly enhance the identification of learning needs by analyzing employee profiles, manager feedback, and past performance records. By automating this process, AI can minimize the manual effort required and provide timely, data-driven insights. However, human intervention (about 20%) would still be necessary to validate and fine-tune AI-generated recommendations.

Respondent 8

AI-driven tools can enhance the measurement of learning interventions by:

Analyzing large-scale training programs across multiple locations, condensing qualitative feedback from managers into structured, data-driven reports, providing real-time insights into learning progress and effectiveness, offering predictive analytics to forecast future learning requirements. By leveraging AI, the organization can transition from subjective assessment methods to objective, data-backed decision-making, ultimately leading to more strategic and effective L&D interventions.

Learning needs are predominantly identified through performance assessments, skill matrix evaluations, and managerial feedback.

While AI's ability to predict learning needs remains uncertain, its potential to analyze large datasets and detect patterns can enhance the accuracy of need identification.

Respondent 9

Measuring the success of learning interventions is another area where AI can add value. By assessing content relevance, engagement levels, delivery efficiency, and learning continuity, AI can provide real-time insights into training effectiveness.

Additionally, AI-driven analytics can facilitate course corrections, optimize learning pathways, and ensure continuous development and engagement.

Currently, learning needs are identified through traditional methods such as performance appraisals, feedback from business heads, and ad-hoc requests. AI can enhance this process by leveraging machine learning to analyze performance trends, predict training requirements, and personalize learning paths. By identifying skill gaps based on employee performance data, AI can ensure targeted and relevant learning interventions.

Respondent 10 AI can also play a critical role in measuring the impact of training programs. Unlike conventional assessment methods, AI-driven analytics can track learning progression in real-time, conduct automated quizzes, assign practical projects, and provide personalized feedback. AI can monitor learner engagement, retention, and application of knowledge in the workplace, ensuring a continuous and measurable improvement process.

4.4 Summary of Findings

This chapter presents a comprehensive summary of the key findings from the research conducted on the adoption and readiness for Artificial Intelligence (AI) in Learning and Development (L&D) across the Indian subcontinent. The study employed a mixed-methods approach, combining quantitative data collected through structured survey questionnaires from individual learners within Corporations and SMEs, Learning Service

Providers, and Freelancers, with qualitative insights gathered through in-depth interviews with key stakeholders from a cross-section of Corporates and SMEs.

The objective of this chapter is to distill the most critical insights across the various dimensions explored in the study. It brings to light the existing challenges, current practices, and future readiness of each stakeholder group, offering a holistic view of the AI adoption landscape in L&D.

The key areas summarized in this chapter include:

- Challenges faced by Corporate and SME learners, particularly in accessing relevant, personalized, and engaging learning experiences in their current environments.
- Challenges encountered by Learning Service Providers and Freelancers, especially in aligning offerings with evolving client expectations and technological shifts.

A summary of current L&D practices within Corporations and SMEs, highlighting areas of strength and those requiring transformation.

An assessment of the readiness and openness to embrace AI across:

- Corporate and SME learners
- Learning Service Providers and Freelancers
- Corporations and SMEs as institutions

Through this synthesis, the chapter aims to capture both the operational realities and the aspirational directions of the Indian L&D ecosystem, setting the stage for deeper discussion on how AI can serve as a transformative enabler in the years to come.

4.4.1 Summary of key challenges from Corporate and SME Learners'

perspective

The research highlights two critical challenges faced by corporate and SME learners in the current learning and development (L&D) ecosystem. The foremost issue, cited by 62% of respondents (76 individuals), is time constraints, reflecting the difficulty of accommodating learning within demanding work schedules. The second major challenge, identified by 34% of respondents (42 individuals), is the lack of engaging content, indicating a gap in delivering learning experiences that are interactive, relevant, and impactful. Together, these findings emphasize the need for organizations to rethink the design, format, and delivery of L&D programs, shifting toward more flexible, engaging, and learner-centric approaches to enhance both participation and outcomes.

4.4.2 Summary of key challenges from Learning Service Providers and

Freelancers' perspective

The research findings from five surveyed learning service providers highlight several operational and strategic challenges within the current corporate learning landscape. A significant 60% of respondents identified adapting to client-specific needs as a primary challenge, emphasizing the increasing demand for highly customized training solutions. Additionally, 40% pointed to limited access to resources and tools as a barrier to delivering impactful and scalable learning programs. An equal 40% also reported challenges in measuring training effectiveness, indicating the need for more robust evaluation frameworks. These insights reveal a pressing need for better alignment between client expectations, delivery capabilities, and outcome measurements to enhance the overall effectiveness of learning interventions.

4.4.3 Summary of Current Learning and Development Practices:

Perspectives from Key Stakeholders in Indian Corporations and SMEs

The insights gathered from senior stakeholders across Indian corporations and SMEs reveal that Learning and Development (L&D) practices are evolving, with a strong preference for a blended approach combining online and offline learning methods. A majority of organizations conduct 80% or more of their training online using Learning Management Systems (LMS) and virtual platforms such as Microsoft Teams. However, in-person training remains critical for modules requiring hands-on engagement, such as induction programs, technical training, and behavioral sessions.

L&D strategies are typically structured around two broad modes of intervention: in-house training and outsourced programs. In-house efforts are commonly led by certified internal trainers, focusing on technical, functional, and soft skill development. External trainers are brought in for specialized topics such as leadership coaching, ISO compliance, and cost management. Leadership training is often tiered based on the management level—mid, senior, and top leadership.

Organizations are increasingly adopting role-based and journey-based L&D frameworks to align learning with career progression and business needs. The insurance sector, for instance, integrates L&D closely with sales and distribution functions, using internal content teams and subject matter experts to design targeted training.

Despite advancements, challenges persist, including limited financial resources, inconsistent perceptions of L&D value, and a lack of continuity in learning initiatives. Some organizations have yet to adopt blended or digital learning models, relying primarily

on face-to-face methods with minimal emphasis on soft skills. Furthermore, training needs identification often relies on stakeholder input, which can be subjective and vary across departments, highlighting a need for more standardized needs assessment processes.

Overall, while many Indian corporations and SMEs are embracing modern L&D practices, variability in implementation, resource allocation, and strategic alignment indicates that there is still significant room for improvement in creating cohesive, scalable, and effective learning ecosystems.

4.4.4 Key Challenges in Learning and Development Practices: Perspectives from Indian Corporations and SMEs

The implementation of Learning and Development (L&D) initiatives within Indian corporations and SMEs is fraught with a diverse set of challenges, stemming from operational, cultural, financial, and technological constraints. A primary concern across organizations is learner acceptability and engagement. Many employees remain skeptical about the value of training programs, particularly when it comes to soft skills or behavioral development, leading to low participation and inconsistent attendance, especially in long-term or multi-session programs.

Time constraints remain a significant barrier, especially in production-driven and sales-intensive environments. Employees often struggle to allocate time for learning amidst their daily responsibilities, and management frequently prioritizes short-term business goals over long-term capability development. In sectors like insurance and startups, freelance models and high attrition rates make consistent training delivery even more difficult.

Another widespread issue is the lack of leadership visibility and commitment to L&D, which translates into limited strategic focus and reduced budgets for learning interventions. For many organizations, especially startups and SMEs, financial constraints significantly limit access to quality trainers, content, and advanced digital infrastructure.

There is also a technical and cultural resistance to adopting digital learning platforms, particularly among non-tech-savvy employees and in manufacturing environments. Organizations face difficulties integrating Learning Management Systems (LMS) and other technologies due to varying levels of digital readiness across departments.

Moreover, measuring the impact of L&D initiatives remains an unresolved challenge. While some organizations rely on business outcomes or financial performance as indirect indicators, few have implemented robust evaluation frameworks to assess the effectiveness of training—especially in the context of soft skills and leadership development, where outcomes are less tangible.

Finally, the subjectivity in training needs identification poses a problem. Most organizations rely on stakeholder-driven approaches, where inconsistent interpretations lead to a lack of standardization in planning and executing L&D initiatives. This calls for more structured diagnostics and validation processes to ensure training relevance and effectiveness.

Overall, the findings underscore the need for greater strategic alignment, improved leadership buy-in, smarter use of technology, and more rigorous evaluation methods to overcome existing challenges and unlock the full potential of L&D in Indian organizations.

4.4.5 Assess the readiness to accept and embrace AI as part of the learning and development journey

The findings from the survey clearly indicate a strong readiness among corporate and SME learners in India to embrace artificial intelligence (AI) in their learning and development (L&D) journeys (Alexander, L., 2025.). Based on responses from 123 participants across Tier 1 and Tier 2 cities, 61% expressed a high level of openness to integrating AI, while 26% reported being somewhat open to its adoption.

This demonstrates a growing awareness and positive attitude toward the role of AI in enhancing learning effectiveness. Learners are increasingly receptive to exploring AI-driven tools that offer personalized, efficient, and engaging experiences. The data highlights a significant shift in learner mindset—moving away from traditional training models and toward innovative, technology-enabled approaches—signaling a favorable environment for the future integration of AI in corporate L&D strategies.

4.4.6 Summary of Findings: Readiness to Embrace AI by Learning Service

Providers and Freelancers

The survey findings indicate a strong readiness among learning service providers and freelancers in India to integrate artificial intelligence (AI) into their learning solutions. 80% of the respondents expressed that they are very open and ready to adopt AI, while the remaining 20% reported being somewhat ready.

This readiness reflects a clear strategic orientation toward innovation and digital transformation in the L&D sector. Service providers are not only aware of AI's potential to enhance content delivery, personalization, and learner engagement but are also preparing

to align their offerings with the evolving needs of corporate clients and SMEs. These insights point to a promising future for AI-enabled learning in India, driven by proactive adoption from the provider side.

4.4.7 Summary of Findings: Readiness to Embrace AI by Corporations and SMEs in India

4.4.7.1 Familiarity with AI in L&D

Across organizations, there is a growing familiarity with AI applications in L&D, ranging from content creation to predictive modeling and performance analytics. While some companies are already leveraging AI tools like ChatGPT, Gemini, DeepSeek, and others to create knowledge repositories, refresh training materials, and design Individual Development Plans (IDPs), others are still in early stages of theoretical understanding. AI is being explored for automating repetitive tasks, analyzing learner data, and generating structured, customized learning interventions. However, a few stakeholders remain unfamiliar with practical AI applications in L&D, despite acknowledging its use in broader business functions.

4.4.7.2 Familiarity with AI in L&D Initial Thoughts on AI Integration

There is a strong sense of enthusiasm and optimism around AI integration into L&D. Stakeholders view AI as a powerful tool to enhance learner engagement, effectiveness, scalability, and personalization. Some organizations are already seeing the benefits in content automation, assessments, and data-driven insights. Others, particularly smaller firms or those early in the adoption curve, see potential but express skepticism due to limited exposure or unclear value propositions. AI is largely seen as an enabler rather than

a disruptor, with many expecting it to raise the visibility and impact of L&D within the organization

4.4.7.3 Strategic Plans and Timeline for AI Adoption

Organizations are at various stages of readiness in defining formal AI adoption strategies. While some have started implementing AI tools in phases or plan to integrate them within the next 6–12 months, others anticipate a longer lead time of 2–3 years for full-scale adoption. Some firms operate on a business-needs-driven approach, incorporating AI without a fixed timeline, while others require extensive vetting, proof-of-concept testing, and leadership buy-in before moving forward. In several cases, AI adoption in L&D is expected to follow after successful integration in core business areas.

4.4.7.4 Assessing Organizational Readiness

Readiness levels vary significantly across organizations. Technology-driven firms with strong leadership support and digital infrastructure are more proactive, while others are still building foundational capabilities. Several companies demonstrate openness to AI but lack formal plans or timelines due to competing priorities or unclear implementation pathways. Organizational readiness is often hindered by a gap between leadership enthusiasm and operational execution, with some employees unaware of ongoing AI initiatives. A few organizations cite 70–80% content creation already involving AI, whereas others are still focused on process optimization before AI integration.

4.4.7.5 Perceived Challenges and Barriers

Data security and integration with existing IT systems are the most commonly cited challenges. Concerns include compliance with privacy protocols, safeguarding sensitive

information, and alignment with legacy infrastructure. Other barriers include lack of awareness among senior leadership, high implementation costs, content validation concerns, and a need for structured data management. Some stakeholders highlight the disconnect between rapid expectations for ROI and the longer timelines AI adoption requires, particularly in L&D, which is often deprioritized compared to revenue-generating functions.

4.4.7.6 Enhancing Learning Engagement with AI

AI is recognized as a game-changer for learner engagement through personalized, adaptive, and microlearning-based content. Tools that enable dynamic content delivery based on learner behavior, comprehension, and performance can boost training efficiency, visibility, and impact. Organizations are particularly interested in AI's role in automating assessments, generating interactive content, and providing real-time analytics to track learner progress. There is strong alignment that AI can transform L&D from a support function into a strategic contributor to business outcomes, provided there is a structured roadmap and robust data governance in place.

This consolidated stakeholder view reflects a strong and growing willingness across Indian corporates and SMEs to embrace AI in their L&D strategies. While enthusiasm is widespread, the pace of adoption will depend on leadership alignment, IT preparedness, and the ability to bridge the gap between conceptual excitement and practical execution.

4.5 Conclusion

The readiness and willingness to embrace Artificial Intelligence (AI) in Learning and Development (L&D) across Indian Corporations, SMEs, Learning Service Providers, and

individual learners represent a pivotal moment in the evolution of workplace learning. The convergence of technological optimism, strategic intent, and organizational curiosity underscores an industry in transition—one that is gradually but deliberately pivoting towards data-driven, personalized, and scalable learning ecosystems.

4.5.1 Learners in Corporates and SMEs: Passive Participants Becoming Active Beneficiaries

While AI adoption strategies are still largely top-down, individual learners are increasingly becoming beneficiaries of AI-enabled personalization and efficiency. Personalized recommendations, microlearning, and performance-based feedback mechanisms are already enhancing learner engagement, especially in organizations that have integrated AI into internal systems.

That said, learner readiness is still evolving. Employees are adapting to new tools and interfaces, but full-scale behavioral change will require:

- Clear communication on AI's role in learning enhancement.
- Up-skilling initiatives to familiarize users with AI-powered platforms.
- Trust-building measures to overcome concerns around surveillance or data misuse.

As AI matures within organizational systems, it is expected that learners will move from passive recipients to active co-creators of their learning journeys, benefiting from tailored content, dynamic assessments, and intelligent feedback systems.

4.5.2 Learning Service Providers: Early Movers Driving Industry Readiness

Learning Service Providers (LSPs) appear to be leading the readiness curve. According to survey data, 80% of LSPs indicate they are very open and ready to integrate AI into their learning offerings, while the remaining 20% report they are somewhat ready. This high level of preparedness positions LSPs as key enablers of AI-driven transformation in L&D.

They are already leveraging AI for:

- Automated content creation (e.g., presentations, assessments, videos).
- Personalized learning pathways through adaptive technologies.
- Behavioral insights using chatbot-led discovery methods.

These providers are also aligning their services to meet the evolving demands of Corporates and SMEs, thereby acting as both innovators and collaborators in the AI transition journey.

Their progress ensures that external partners will play a critical role in accelerating internal AI readiness for their clients.

4.5.3 Corporations and SMEs: From Curiosity to Strategic Commitment

Across the board, large corporations and mid-sized SMEs show strong openness toward AI adoption in L&D, although the degree of readiness varies by maturity level and digital infrastructure. The findings suggest that 70–80% of content creation processes in some organizations already involve AI tools for design, collation, and verification. At the same time, a significant number of organizations are still in the early exploration or pilot stages, with full-scale implementation expected within 2–3 years.

A key insight is the growing recognition that AI will not yield immediate ROI akin to sales initiatives but rather demands a long-term commitment. AI is expected to play a strategic role in:

- Creating more objective, data-backed assessments of training needs.
- Enhancing personalization and relevance of training content.
- Improving learner engagement and operational efficiency.

However, challenges remain. Data security, system integration, leadership awareness, and the need for cultural transformation are commonly cited as barriers. Despite these, most corporates express clear intent to integrate AI into L&D processes—with some already leveraging AI in related functions such as talent acquisition, competency mapping, and performance management.

Final Analysis:

The summary of the conclusion reveals a sector in strong alignment with the future of AI-enabled learning. With 80%+ of service providers ready, a majority of corporates and SMEs planning adoption within 6 to 36 months, and increasing learner exposure to AI tools, the ecosystem is gradually maturing.

However, the gap between aspiration and execution remains. Only a small fraction of organizations currently report mature AI adoption strategies, and implementation timelines are contingent on factors such as leadership buy-in, IT infrastructure compatibility, and cultural readiness.

To truly harness AI's transformative potential in L&D, stakeholders across the board—corporates, SMEs, service providers, and learners—must align on three critical fronts:

- Strategic Vision: Establishing AI as a long-term L&D enabler, not a short-term fix.
- Operational Integration: Bridging AI tools with existing systems and workflows.
- Cultural Transformation: Building AI literacy, trust, and collaboration across the workforce.

In conclusion, the Indian L&D landscape is on the cusp of an AI-led evolution. The readiness is real, the intent is clear, and while the road ahead may be complex, it is undeniably promising.

CHAPTER V: DISCUSSION

5.1 Discussion of Results

This chapter presents an integrated discussion of the research findings derived from both quantitative surveys and qualitative interviews (Adamson et al. 2004) conducted with multiple stakeholders within the Indian subcontinent. These stakeholders include corporate and SME learners, Learning Service Providers (LSPs), freelancers, and organizational leaders who shape L&D strategies. The results provide a rich, contextualized understanding of the current L&D practices, key challenges, and the readiness to adopt Artificial Intelligence (AI) across learning ecosystems in India.

Alignment with Research Objectives and Literature

The findings are consistent with the theoretical foundations and literature reviewed earlier in this study. They confirm the evolving recognition of AI as a strategic tool in the domain of Learning and Development (Saputra et al., 2024). While this research does not incorporate a global survey or international comparisons, the trends identified within the Indian subcontinent reflect a regional appetite for digital transformation in L&D. The results are aligned with existing Indian literature and practitioner insights that increasingly position AI as a critical enabler of scalable, efficient, and personalized learning solutions (Rehan, H., 2023).

5.1.1 Key Challenges Faced by Corporate and SME Learners

Corporate and SME learners reported several persistent challenges:

- Limited time for learning due to workload and business demands.
- Inadequate personalization in learning modules that do not align with individual skill levels or roles.

- Difficulty in tracking learning impact or connecting it to performance metrics.
- Technology fatigue arising from multiple platforms and fragmented experiences.

Learners expressed a strong desire for more intuitive, AI-enabled systems that can provide tailored recommendations, track progress meaningfully, and integrate seamlessly with their work environments.

5.1.2 Key Challenges Faced by Learning Service Providers and Freelancers

From the perspective of LSPs and freelancers:

- There is a lack of standardization in AI-enabled L&D tools, leading to inconsistent client expectations.
- Adoption of AI varies widely across client organizations, making it challenging to create scalable offerings.
- Limited access to organizational data often hinders training personalization and analytics.
- There is an ongoing need for continuous upskilling among service providers themselves to stay relevant in an AI-enhanced learning environment.

Despite these barriers, a large proportion of LSPs and freelancers indicated a proactive approach to AI adoption, positioning themselves to meet the emerging needs of corporate clients.

5.1.3 Key Challenges Faced by Corporates and SMEs

Corporations and SMEs face a unique set of challenges in executing their L&D strategies effectively:

A significant number of SME respondents indicated that learning investments are often made on an ad-hoc basis rather than being guided by a formal, structured L&D strategy. This reactive approach to learning and development highlights the need for more strategic alignment between business objectives and capability-building efforts within smaller enterprises.

In both SMEs and some corporates, L&D is still viewed as a support function rather than a business driver, limiting its strategic integration.

Traditional in-person training models do not scale efficiently, especially for organizations with decentralized or field-based teams. SMEs hesitate to invest in employee development fearing attrition, leading to a “wait-and-watch” approach to upskilling.

While operational staff may show openness, leadership in both sectors often lacks confidence in AI-driven systems, fearing loss of control or misalignment with organizational culture. SMEs, in particular, face infrastructure issues—ranging from unreliable to lack of LMS platforms—which impede digital learning delivery.

These challenges create a disconnect between learning intentions and outcomes, which AI could potentially bridge if strategically integrated.

5.1.4 Summary of Current Learning and Development Practices

The study finds that most Indian organizations, both large and small, continue to rely on blended learning approaches. These include classroom training, e-learning modules, coaching, and experiential learning. However, the incorporation of AI in L&D remains nascent and fragmented, with usage typically limited to:

- Content recommendation engines,

- Assessment automation,
- Basic learner analytics dashboards.

Very few organizations have yet developed enterprise-wide AI strategies for L&D. The lack of skilled implementation partners, legacy systems, and cybersecurity concerns further slow down AI deployment.

5.1.5 Readiness to Embrace AI by Corporate and SME Learners

Survey results revealed that 87% of corporate and SME learners are open to adopting AI in their learning journeys:

- 61% are “very open”
- 26% are “somewhat open”

This indicates a strong conceptual readiness, especially among mid-career professionals in urban and semi-urban settings. These learners perceive AI as a potential facilitator of real-time learning, career growth, and relevance in a rapidly evolving job market.

However, actual exposure to AI-enabled platforms among learners is still limited, and many rely on self-directed learning via YouTube, MOOCs (Massive Open Online Courses) (Deng et al.,2019) and employer-provided content libraries rather than truly adaptive, AI-powered environments.

5.1.5 Readiness to Embrace AI by Learning Service Providers and Freelancers

Among LSPs and freelancers:

- 80% reported being “very ready”
- 20% stated they are “somewhat ready”

This high level of readiness is driven by a strong understanding of client needs, competitive pressure to innovate, and greater familiarity with tools such as AI-based authoring tools, analytics platforms, and chatbots.

Several freelancers and boutique firms are already experimenting with AI to:

- Generate content faster,
- Automate learner engagement through chatbots,
- Track learner behavior and performance.

They remain highly optimistic about AI's ability to enhance client value and create more scalable learning solutions.

5.1.6 Readiness to Embrace AI by Corporations and SMEs

Organizations themselves show a mixed but evolving readiness to embrace AI:

- Larger corporates, especially those in IT, BFSI, and manufacturing, demonstrate stronger digital readiness.
- SMEs, on the other hand, show interest but are constrained by budgets, awareness gaps, and competing priorities.

Common barriers cited include:

- Cost of implementation and maintenance,
- Lack of internal AI expertise,
- Concerns about data governance and integration with existing HR systems.

Nevertheless, there is a growing realization that AI can bridge skill gaps faster, reduce training costs, and align learning with performance, making it an area of future investment.

5.1.7 Emerging Opportunities and Strategic Insights

Across all stakeholder groups, AI is viewed as a transformative force that can:

- Create personalized, just-in-time learning experiences,
- Reduce administrative and instructional burden through automation,
- Enhance learning engagement through adaptive assessments, gamification interfaces
- Enable data-driven decision-making in L&D strategy.

The strategic implication is clear: organizations that can align their learning goals with AI-enabled capabilities are better positioned to future-proof their workforce.

5.1.8 The Broader Implication and Way Forward

While this study is rooted in the Indian subcontinent, the insights have relevance for broader regional contexts. Given India's diverse workforce, industry composition, and emerging tech landscape, it provides a microcosm for observing early AI adoption in L&D. However, a clear recommendation is to extend this research to other parts of Asia—such as Southeast Asia, the Middle East, and East Asia—to develop comparative insights. Such expansion will help in:

- Identifying region-specific best practices,
- Understanding cultural readiness for AI in L&D,
- Building collaborative frameworks for regional upskilling using AI.

5.1.9 Conclusion of the Discussion

In summary, this research confirms that AI in L&D is at an inflection point in India. There is strong stakeholder enthusiasm and increasing strategic intent, but adoption remains uneven due to structural, technological, and cultural barriers. Corporate and SME learners

are open to change, service providers are preparing for transformation, and organizations are evaluating long-term benefits (Bhatt, P. and Muduli, A., 2023).

With the right blend of policy support, leadership vision, and industry-academic collaboration, AI can play a defining role in shaping India's L&D future (Nirubarani, J. and Aithal, P.S., 2024). The learnings from this research also serve as a foundation for future cross-country comparisons, helping define AI's role in learning across varied developmental contexts.

5.2 Discussion of Assessing the current practices in corporate L&D functions and their key challenges in terms of time, cost, retention of learning (based on sample size)

One of the most recurring themes across corporate learners is the significant challenge of time management. With 62% of respondents highlighting time constraints, it's evident that aligning learning with high-pressure work schedules continues to be a primary impediment. This indicates an urgent need to reimagine delivery formats to accommodate the work-life balance of modern professionals—perhaps through shorter microlearning modules or on-demand content (Díaz Redondo et al., 2021) that allows flexibility.

The lack of engaging content was flagged by 34% of the survey respondents, showing that merely providing learning opportunities is not enough. There is a clear disconnect between learner expectations and the material delivered. This creates an opportunity for L&D teams to rethink content formats—infusing gamification (Saunders, M.E., 2017), simulations, interactive case studies, and storytelling to improve cognitive and emotional engagement. Although 80% of training is now delivered online using Learning Management Systems (LMS) or virtual platforms, traditional face-to-face methods still retain their relevance—

especially in induction, technical training, and leadership development. This hybrid model highlights a transitional phase where digital learning is prevalent but not yet a complete replacement.

Organizations are striking a balance between internal training and outsourced interventions. While in-house trainers are typically assigned soft skill and functional sessions, external partners are brought in for high-impact programs like leadership coaching. This reflects a strategic prioritization where specialized expertise is outsourced, and core developmental programs are retained internally for alignment. Training needs identification often relies on direct input from business heads. While this ensures relevance, it introduces subjectivity that can distort actual needs. A more data-driven approach could bring consistency and standardization to the training planning process.

Financial prudence emerged as a recurring limitation. Many SMEs and even some larger corporates show reluctance in investing heavily in training. Budget freezes, especially at quarter ends, restrict program execution, particularly for long-term initiatives. Cost optimization and ROI tracking must be built into L&D strategies (Bennington, K. and Laffoley, T., 2012) for better organizational buy-in.

Another prominent challenge is the skepticism among employees regarding the relevance and usefulness of L&D programs. Without clear alignment to personal career goals and demonstrable value, learner motivation remains low. Creating personalized learning journeys (Facler, M., 2023) and mapping them to growth pathways can help bridge this gap.

Among the five learning service providers surveyed, 60% cited client-specific customization as a major challenge. Organizations demand hyper-tailored programs, but the lack of scalable frameworks and limited resources places considerable strain on vendors. This calls for modular design capabilities and deeper discovery processes at the pre-engagement stage.

There's a palpable vacuum when it comes to measuring the impact of L&D programs. Nearly 40% of providers and several corporate respondents acknowledged the lack of robust assessment tools, especially for behavioral and soft skills training. Developing consistent success metrics remains a frontier in professional training.

Beyond logistics and budget, cultural attitudes towards L&D remain a barrier (Brown, T.C. and McCracken, M., 2009). In some organizations, L&D is still seen as an auxiliary function rather than a strategic enabler. Sales managers resisting structured training, startups facing frequent business disruptions, and the general undervaluation of training programs all reflect this resistance. This indicates that any successful L&D intervention must begin with internal advocacy and cultural alignment.

While digital learning tools are being used, their adoption is inconsistent—particularly among non-digital native employees. From blue-collar workers to middle managers, comfort with LMS platforms and e-learning tools varies significantly. Upskilling programs in digital fluency could serve as an important enabler here.

Service providers often operate with lean teams and limited tools, making it hard to meet the expanding and diverse needs of corporate clients. This points to a need for investment

in internal capacity-building among providers themselves—through partnerships, tech integration, and consultant training.

The discussion reveals that L&D functions are at a critical crossroads. While there is a visible shift towards digital and blended models, the real transformation depends on tackling human, financial, and systemic challenges. The way forward lies in aligning L&D to organizational goals (Panda et al.,2014), personalizing learner experiences, and fostering a culture that celebrates continuous learning—backed by tools and frameworks that measure, justify, and scale impact effectively.

5.3 Discussion of Assessing the readiness to accept and embrace AI as part of the learning and development journey

1. High Openness, Mixed Readiness

- An overwhelming 61% of respondents expressed being very open to integrating AI into their L&D journeys, with another 26% somewhat open, showing a strong appetite for innovation.
- However, while openness is high, the actual readiness for adoption varies significantly. Many organizations remain in the planning or proof-of-concept stage, reflecting a cautious optimism.

Insight: Curiosity and enthusiasm don't automatically translate into implementation. Strategic hesitations, especially around ROI timelines and infrastructure compatibility, continue to temper rapid adoption.

2. Learning Providers Lead the Charge

- Among learning service providers, a remarkable 80% are very ready to integrate AI into their offerings. This indicates that the supply side of the L&D ecosystem is charging ahead, creating momentum for AI integration.
- Their efforts span AI-driven content creation, assessments, learner personalization, and performance analytics (Singh, B. and Pathania, A.K., 2024) suggesting that the tools and expertise are already market-ready.

Implication: The pressure now lies on corporate clients to catch up and match this readiness with demand-side investments.

3. From Awareness to Application

A consistent trend across organizations is the evolution from AI awareness to exploratory application. Many have begun using tools like ChatGPT, Gemini, and DeepSeek for:

- Content development (PPTs, videos, case studies)
- Learning assessments
- Behavioral competency mapping
- Some are also experimenting with predictive modeling for personalized development plans and chatbot-led learning discovery.

Shift in mindset: The transformation from “what AI can do” to “how AI can help us today” is clearly underway.

4. AI as a Strategic Lever – But Not Yet a Priority

- While organizations acknowledge AI’s long-term value, short-term business priorities often overshadow L&D transformation.

- Unlike sales functions that show ROI within a quarter, AI in L&D may take 2–3 years to prove its impact.
- Some organizations have ambitious goals to be AI-ready in 6–12 months, while others are waiting until FY 2025–26 to decide.

Reality check: AI in L&D is still a long game—requiring time, patience, and internal championing to reach maturity.

5. Security, Infrastructure, and Leadership: The Big Three Barriers

- Data security consistently emerged as a top concern (Dilmaghani et al., 2019) particularly in industries handling sensitive customer data.
- Integration challenges with legacy IT systems are another stumbling block, highlighting the need for robust tech architecture.
- Leadership awareness and buy-in remain patchy; in some cases, the C-suite hasn't fully grasped AI's transformative power in L&D.

Critical need: Building trust through secure, compliant, and aligned AI solutions is as important as building capability.

6. AI's Role in Learning Personalization & Engagement

Many organizations foresee AI elevating learning from static, generic content to adaptive, personalized learning journeys.

AI is already being used to:

- Track learner engagement through leaderboards and quizzes
- Automate creation of IDPs and SWOT-based training plans
- Enable microlearning and modular content delivery based on user preferences

Advantage: Personalization isn't a luxury anymore—it's emerging as a baseline expectation in modern corporate learning.

7. Early Wins and Visible Impact

A few organizations already report successful use of AI for:

- Sales data analysis
- Mining operations (e.g., drone surveys)
- Troubleshooting in manufacturing plants

These applications build internal confidence and may create spillover benefits into AI-driven employee development in the near future.

Momentum-building: Proven success in non-L&D domains can accelerate organizational readiness for AI in learning.

8. The Role of HR in Driving Change

- HR departments are expected to be at the helm of AI transformation in L&D.
- From building AI literacy to overseeing implementation strategy, HR is seen as a bridge between vision and execution.
- Some organizations are already recruiting AI specialists within L&D teams—an encouraging step toward institutionalizing this shift.

Action point: Upskilling HR leaders in AI strategy will be pivotal in steering sustainable transformation.

9. Optimism Tempered by Reality

While motivation and curiosity are high, actual deployment is slow due to:

- Budget limitations

- Lack of dedicated AI champions
- Unclear ROI frameworks

Most organizations agree AI will play a major role in L&D—but how and when remains a work in progress.

Verdict: The AI-in-L&D journey is underway, but progress is uneven. Champions, clarity, and change management will define success in the coming years.

5.4 Discussion of How the learning triangle of corporate clients, their learners and service providers perceive the future of learning and development keeping AI as a key driver

AI for learners in corporations and SMEs:

An overwhelming 61% of respondents have expressed strong enthusiasm about using AI tools in their learning and development (L&D) journey. This is not merely a reflection of curiosity but a clear signal of readiness to embrace intelligent systems that can elevate learning effectiveness (Alam, A. and Mohanty, A., 2023). When an additional 21% indicated that they are “somewhat open” to AI adoption, it confirmed that learners are no longer passive observers of digital change—they’re prepared to be active participants in it. A striking 81% of participants believe AI can enhance their learning journeys by offering personalized learning paths. This finding underlines a growing expectation for learning experiences that adapt in real time—much like how Netflix curates content. Learners today want relevance (Alexander, P.A., 2018), not redundancy. They crave contextual learning journeys that align with their pace, role, and career aspirations.

68% of learners acknowledged that AI could deliver gamified and interactive content—signaling a shift from traditional e-learning modules to more immersive, game-based learning formats. This enthusiasm illustrates a deep hunger for motivation-driven learning mechanisms where knowledge is not just consumed but experienced (Boud, D., 1993).

Over half of the respondents (52%) see the value of AI in providing instant feedback and support. In today's high-speed corporate environment, learning cannot wait. This feedback-on-demand capability is critical in reinforcing learning, correcting misconceptions early, and enhancing overall retention.

55% of respondents are “very excited” about AI's ability to curate content aligned with their specific needs (Veluru, C.S., 2024), and another 32% are “somewhat interested.” This indicates growing trust in AI not just as a delivery mechanism but as a learning architect—an intelligent curator capable of filtering noise and delivering only what matters.

In a striking departure from the usual resistance to new technologies, none of the respondents reported disinterest in AI's ability to curate personalized content. This speaks volumes—there is minimal psychological resistance among learners when the value proposition is clear, relevant, and immediately applicable.

AI for Learning Providers:

Among learning service providers and freelancers, a powerful 80% consensus emerged on three fronts:

1. **Administrative Automation:** AI is seen as a productivity tool that can eliminate repetitive backend tasks, enabling professionals to focus on creative and strategic learning design.
2. **Enhanced Interactivity:** There's a strong belief that AI can transform static content into interactive, engaging learning journeys.
3. **Personalization Power:** Providers see AI as a tool that can dynamically adapt content delivery to individual learning needs—turning “one-size-fits-all” into “one-size-fits-one.”

AI as the Learning Companion of the Future

Across responses, a common thread emerges: AI is no longer seen as a futuristic concept but as a present-day learning companion—one that continuously adapts to learner behavior. By recognizing individual learning styles and preferences through models like VAK (Visual, Auditory, Kinesthetic), AI is beginning to deliver a “one-size-fits-one” experience, enabling learners to engage at their own pace, with relevant content, and in formats that suit their cognitive patterns.

AI's ability to support micro-learning and interactive formats was repeatedly noted, especially in scenarios where learners operate at different competency levels but within the same job roles. This flexibility is crucial in standardizing outcomes while individualizing the journey—something conventional L&D struggled to balance.

From Manual to Intelligent Content Curation

Traditional content creation processes rely heavily on manual effort, often drawing from disparate sources such as compliance documents, Google searches, and internal

knowledge. With AI stepping in, there's a shift toward intelligent content ecosystems where AI automates not just creation but also retrieval, categorization, and visualization of training materials.

The integration of tools like ChatGPT, InVideo, Gamma, DALL·E, and Wolfram Alpha is already revolutionizing content production. These tools enhance user experience, design interactivity, and significantly reduce development time. Moreover, by acting as a central knowledge repository (Sabol, D.A., 2025), AI helps eliminate redundancies, ensures content freshness, and supports regulatory alignment—all with a fraction of the manual effort.

A New Paradigm in Identifying Learning Needs

L&D teams traditionally depend on annual TNI (Training Needs Identification), PMS (Performance Management Systems), and leader consultations to pinpoint skill gaps. However, these processes are inherently retrospective and perception-driven, making them prone to oversight.

AI presents a dramatic improvement in this regard—offering the ability to analyze real-time behavioral and performance data (Li et al., 2023), scan managerial conversations, and identify evolving needs dynamically. This shift from memory-based assessments to data-informed predictions enables organizations to move from reactive to proactive learning strategies, reducing training lags and improving skill readiness across roles.

AI as a Performance Barometer for L&D

Measuring the impact of training (Brøndsted, J.K. and Boston, N.E., 2015), especially in behavioral and soft skills, has historically been a grey area. AI opens new dimensions in tracking effectiveness by linking pre- and post-training performance metrics with business outcomes. In domains like sales, AI can analyze variables such as revenue growth, customer acquisition, and market expansion—offering concrete evidence of training ROI. Moreover, AI doesn't just track performance—it understands it (Varma et al., 2024). By analyzing task execution speed, attention spans, problem-solving skills, and behavioral changes, AI provides granular, real-time insights into how learning interventions are translating into capability development.

Shifting from Trainer-Driven to Learner-Driven Models

Another important insight is the reduced dependence on trainer effectiveness. In traditional learning environments, engagement often hinges on a facilitator's delivery style. AI shifts this dynamic by democratizing content access and customizing delivery, irrespective of who delivers the training. This promotes a self-paced, always-on learning model, enhancing inclusivity and accessibility.

Digital Efficiency and the TEEM Advantage

AI's value in content curation goes beyond learning—it delivers tangible returns in Time, Effort, Efficiency, and Management (TEEM). From managing attendance digitally to centralizing knowledge systems and enabling instant performance tracking, AI acts as an L&D operations optimizer (Preechasin, T., 2024), reducing friction points and boosting delivery speed without compromising quality.

Barriers: The Gap Between Vision and Implementation

While the enthusiasm for AI is evident, a recurring theme is the uncertainty around operationalizing AI. Some respondents expressed excitement about AI's capabilities but lacked clarity on "how" these would translate into everyday workflows. This indicates a need for change management strategies and AI-readiness frameworks (Holmström, J., 2022), ensuring teams are trained not just to consume AI-powered tools but to integrate them meaningfully into their L&D architecture.

The Divergent Impact of AI Across Training Types

AI's effectiveness is not one-size-fits-all. Respondents revealed a clear pattern: AI is proving to be a powerhouse in functional and technical training, thanks to automation, interactivity, and adaptive content. However, behavioral training remains a frontier where face-to-face human interaction still reigns supreme. The human element in developing soft skills cannot yet be matched by algorithms (Dolev, N. and Itzkovich, Y., 2020) —an area that signals both a limitation and a future opportunity for AI.

Personalization: Promise vs. Practicality

There's a compelling belief in AI's ability to identify individual learning needs, yet a gap persists in its execution of fully personalized learning journeys. While AI-driven platforms can pinpoint learning patterns and competency gaps, several respondents emphasized that AI's actual ability to tailor training content still needs refinement (Admane et al., 2024). One respondent rightly highlighted that only about 20% human intervention is now needed to validate AI-generated recommendations—a testament to growing trust, but also to the system's current limitations.

Engagement Gets a Makeover with AI

AI is reimagining learner engagement. Respondents spotlighted the shift from checklist-based training to dynamic, responsive, and self-paced learning. Features like microlearning, modular content delivery, and adaptive tools were frequently cited as key enablers of higher engagement and retention. More interestingly, AI is emerging as a ‘developmental assistant’—ensuring continuity in learning even amid managerial changes. This shift reduces dependency on managers and creates a learner-centric, resilient development ecosystem.

AI-Powered Content: From Bottlenecks to Breakthroughs

Approximately 60% of content creation is now AI-assisted, pointing to a strong shift in instructional design and case material development. But what truly stands out is AI’s ability to unlock and organize internal organizational knowledge (Jarrahi et al., 2023) — especially in industries where critical data is scattered across departments. Respondents cited AI’s ability to act as a knowledge repository, retrieving and curating content in real time, drastically reducing time-to-content and enhancing alignment with evolving business needs.

From Data Swamps to Insight Engines

One of the most game-changing insights from this round of responses is AI’s emerging role as a filter and interpreter of qualitative data at scale. For instance, HR leaders can now analyze managerial feedback (Tong et al., 2021) across geographies, and convert it into digestible summaries—something previously unthinkable without days of manual effort.

This efficiency not only accelerates decision-making but enables continuous feedback loops for real-time L&D strategy optimization.

Reimagining Learning Needs Identification

Traditional identification methods—performance reviews, manager inputs, and skill matrices—still persist. However, organizations are now leaning into AI to identify performance gaps (Eijkenboom et al. 2024) in near real-time. Rather than predicting future needs (which remains nascent), AI excels at timely and objective identification of current gaps—a critical enabler for agile organizations. There is growing confidence in AI’s ability to combine data points from CVs, work performance, and assessment centers to recommend tailored interventions.

Objectivity as the New Standard

Respondents raised a crucial insight: AI can reduce the subjectivity often associated with managerial feedback. By standardizing skill gap analyses and learning assessments, AI not only eliminates judgment (Jarrahi, M.H., 2018) and bias but creates a psychologically safer environment for learners. This is especially relevant in high-stakes environments where candid feedback is difficult to offer or receive.

Measuring Success: From Lag to Lead Indicators

While traditional L&D evaluation was retrospective, AI is enabling real-time, predictive measurement of training effectiveness. Features like automated quizzes, learning behavior tracking, and progress analytics are helping L&D teams move beyond completion rates to measure what truly matters: engagement, application, and improvement. This shift from

lagging to leading indicators is reshaping how organizations define and pursue training ROI.

5.5 Discussion Conclusion

AI in Corporate Learning: Balancing Disruption with Direction

The findings paint a vivid picture of AI as both a catalyst and a work-in-progress within the corporate L&D landscape. Across industries, AI is reshaping the learning experience (Zootzky, G. and Pfeiffer, A., 2024), but its impact is not uniform—it varies by training type, maturity of adoption, and the human-AI collaboration balance.

AI's greatest strength lies in functional and technical training, where its ability to deliver modular, automated, and interactive learning significantly boosts engagement and efficiency. In contrast, behavioral training remains anchored in human interaction, signaling an ongoing need for blended models.

A standout theme across organizations is AI's emerging role as a learning strategist (Ejjami, R., 2024) capable of mapping individual patterns, identifying competency gaps, and even recommending personalized paths. However, true personalization remains aspirational, with human oversight still necessary to ensure relevance and nuance.

Learner engagement has taken a transformative leap forward. AI now drives adaptive microlearning, self-paced journeys, and developmental continuity even in the face of managerial turnover. It is no longer just a tool but a digital learning partner (Bhatnagar et al., 2021) ensuring engagement is both consistent and contextually relevant.

In content creation, AI is alleviating long-standing bottlenecks. With around 60% of training content now AI-assisted, instructional design is faster, sharper, and more aligned

with business needs. A critical value-add is AI's ability to tap into internal, often fragmented organizational knowledge, and convert it into usable, structured learning content.

When it comes to identifying learning needs, AI is moving organizations from reactive to real-time. It's not yet predicting future needs at scale, but it excels in flagging current skill gaps through data synthesis across PMS, performance feedback, and assessments—making L&D more agile and responsive.

One of AI's most promising contributions lies in its objectivity (Bernhardt, M., 2023). By minimizing human bias in feedback and evaluation, AI creates psychological safety in learning environments and encourages deeper participation, especially in large-scale programs.

Finally, the measurement of learning effectiveness has undergone a paradigm shift. AI enables real-time progress tracking, predictive analytics, and outcome-based evaluation, allowing L&D leaders to move beyond completion metrics to evidence-based, continuous improvement models.

In essence, AI in L&D is no longer a futuristic concept—it is a present-day enabler. But the journey is nuanced: while it amplifies speed, scale, and precision, it still thrives best when paired with human intuition, emotional intelligence, and contextual judgment. The future of learning is not AI alone, it is AI augmented by people, for people.

CHAPTER VI:
SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

Learners from Corporations and SMEs:

Readiness & Adoption

Learners across corporates and SMEs are increasingly open to AI-driven learning (Walton, M. and Hamilton, J., 2024), particularly in functional, technical, and compliance areas where the benefits of personalization and flexibility are more evident. While many are engaging with AI-enabled platforms, a significant number remain passive users, often unaware of the underlying capabilities driving their learning experiences. This highlights a gap in awareness that, if addressed, could further enhance learner confidence and engagement with AI tools.

Advantages & Benefits

Learners value the convenience brought by microlearning, anytime-access, and personalized content, which allow for greater flexibility in their learning journeys. They particularly appreciate AI features that recommend relevant courses, track their progress, and provide tailored feedback (D Goudar, et al., 2024). Additionally, interactive elements like quizzes, simulations, and intelligent nudges significantly enhance motivation and engagement levels.

Needs

Learners seek greater transparency in how AI makes decisions and recommends learning pathways, aiming to build trust in the system. There is also a growing demand for AI

support to extend beyond technical training into behavioral and leadership development, delivered through more intuitive, human-like platforms.

Threats & Concerns

Learners remain cautious about the ethical use of personal information, with data privacy emerging as a key concern in AI-enabled learning platforms. Ensuring responsible data practices is essential to build trust and encourage adoption.

Learning Service Providers & Freelancers: Innovating, Yet Navigating Change

Readiness & Adoption

Many freelancers and service providers are actively leveraging AI for content creation, assessments, and enhancing learner engagement. There is a noticeable shift in their mindset, with a growing emphasis on offering AI-enabled L&D solutions to stay relevant and competitive in the evolving learning ecosystem.

Advantages & Benefits

AI enhances content development by enabling faster turnaround times and greater customization. It also offers deeper learner insights, helping providers refine learning outcomes. Embracing AI further allows scalable solutions without sacrificing personalization or relevance.

Needs

Freelancers and Learning service providers emphasize the need for access to affordable AI tools and targeted upskilling. They also seek stronger collaboration models with organizations to seamlessly integrate AI-driven learning solutions.

Threats & Concerns

Freelancers and Learning service providers express concerns that AI-generated content could overshadow creative human inputs and lead to increased competition with larger vendors who have access to advanced systems. There is also a growing fear of being replaced or undervalued as automation becomes more prevalent.

Corporations and SMEs

Readiness & Adoption

Several corporates and SMEs have already embedded AI tools into their L&D functions, especially in areas like content creation, performance analysis, and learner engagement. Others are still in exploratory phases, running pilot initiatives or applying AI selectively in domains such as compliance and functional training. This reflects a gradual but steady shift toward AI adoption across the L&D spectrum (Dixit, A.S. and Jatav, S., 2024).

Advantages & Benefits

AI is significantly reducing turnaround time in content development and assessments while enabling quicker identification of performance gaps and personalized learning needs. Adaptive learning paths and microlearning modules are enhancing learner engagement and retention. Additionally, AI functions as a developmental assistant, ensuring learning continuity even amidst managerial changes

Needs

Organizations are seeking stronger AI integration into behavioral training and tools that can centralize scattered organizational knowledge. There is also a growing need for clear

ROI metrics and effectiveness measures to validate the long-term impact of AI-driven L&D initiatives.

Threats & Concerns

Over-reliance on AI raises concerns about diminishing human judgment in nuanced areas like soft skills. Additionally, issues around data privacy, bias in AI models, and a shortage of skilled professionals to manage AI-enabled L&D systems (Nyathani, R., 2023) remain key challenges.

6.2 Implications

This research presents a comprehensive 270-degree perspective on the evolving role of Artificial Intelligence (AI) in shaping the learning architecture within corporates and small and medium enterprises (SMEs) across the Indian subcontinent. By focusing on three key stakeholder groups—corporate and SME employers, end-user learners, and learning service providers/freelancers—the study offers a well-rounded understanding of AI adoption, readiness, and perceived value across the learning and development (L&D) value chain.

A key implication emerging from the study is the varying levels of AI maturity across these stakeholder groups. While a number of corporates and learning providers have already integrated AI tools—particularly in content development, learning engagement, and performance diagnostics—others remain in early stages of exploration, limited to pilot projects or specific domains like compliance or technical training. This disparity suggests that AI adoption is influenced not just by awareness but also by organizational agility, leadership vision, and sector-specific needs (Valle-Cruz et al., 2024).

For organizations, (Rane, N et al., 2023) AI offers compelling advantages such as reduced content development time, real-time gap identification, and increased learner engagement through adaptive learning pathways. However, concerns around data privacy, over-dependence on algorithms for nuanced learning areas (like soft skills), and the need for skilled AI-literate professionals point to a cautious optimism that must be addressed through policy, upskilling, and ethical AI governance frameworks.

Learners, particularly in corporate environments, display a growing receptivity to AI-powered learning experiences—especially when they offer personalization, interactivity, and continuous progress tracking (Mahmoud, C.F. and Sørensen, J.T., 2024). However, the study highlights a gap in understanding of AI's backend processes, indicating a need for more transparent platform design and learner education to build trust and maximize engagement.

Learning service providers and freelancers are also rapidly realigning their strategies to stay competitive in an AI-driven L&D market. Many are already employing AI tools for content creation, learner assessments, and engagement design. However, challenges such as cost barriers, pressure from large tech-enabled vendors, and concerns about creative redundancy and automation-driven role displacement highlight the complexities they face in future-proofing their practices.

Unlike much of the existing literature, which is often focused on governmental initiatives or narrowly defined sectors, this research spans multiple industries—including IT, banking, construction, telecom, education, medical and entertainment to list a few—and is

geographically distributed across both tier-1 and tier-2 cities in India. This lends broader applicability and relevance to the findings.

In conclusion, the study underscores that AI is not merely a tool but a transformative force reshaping the learning landscape (Roy, S. and Paul, S.K., 2023) in India. The findings advocate for deliberate, strategic integration of AI across the L&D ecosystem—guided by ethical considerations, human-AI collaboration, and continuous capability-building. Stakeholders must shift from reactive to proactive engagement with AI, not just to remain relevant, but to unlock the full potential of learning in a digital-first future.

6.3 Recommendations for Future Research

Building on the findings of this study, future research should delve deeper into the differentiated role AI can play in addressing the learning needs of employees at various organizational levels—senior, middle, and junior. Understanding how AI can customize learning pathways, content formats, and engagement strategies (Diwan, C., et al., 2023) based on hierarchical roles will enable the design of more relevant and impactful learning experiences.

Additionally, expanding the geographic scope of research to include other countries across the Asian continent—and further into Europe and the Americas—will offer valuable comparative insights. This cross-regional analysis can uncover cultural, structural, and technological variances in learning practices and architectures among corporates and SMEs. It would also shed light on how learners and learning service providers, including freelancers, perceive and adapt to AI in different socio-economic and industry contexts.

Such comparative research can help validate patterns observed in this study, identify global best practices, and reveal both consistencies and divergences in how AI is seen—as either an enabler or a challenge—in building future-ready learning ecosystems. Moreover, it can contribute to the development of more nuanced, globally relevant frameworks and interventions that align AI integration with organizational goals, workforce capabilities, and ethical considerations (Tenakwah, E.S. and Watson, C., 2025).

6.4 Conclusion

This study set out to explore the role of Artificial Intelligence (AI) in shaping the learning architecture within corporates and Small and Medium Enterprises (SMEs) across the Indian subcontinent. The findings indicate that AI is not just an emerging technological tool but a strategic enabler that is redefining how organizations approach Learning and Development (L&D). From automating content creation to personalizing learning journeys and enabling real-time performance insights, AI is steadily transforming traditional L&D practices into more agile, data-informed, and learner-centric systems.

Across corporates and SMEs, AI-powered platforms are being increasingly adopted to deliver adaptive learning pathways that align with business objectives and individual development needs. These systems enhance engagement, support knowledge retention, and enable ongoing skills development by tailoring experiences based on behavioral data and performance analytics. In doing so, AI elevates the effectiveness and efficiency of learning programs, especially in large, diverse workforces typical of the Indian business landscape. However, successful integration requires more than just access to technology. Organizations must invest in upskilling L&D teams, ensuring ethical and transparent use

of learner data, and addressing skepticism around AI's role in replacing human mentorship (Adepoju, O.D et al..2024). Rather than being seen as a threat, AI should be positioned as a partner to learning professionals—enhancing human judgment rather than replacing it.

This research highlights a significant readiness among corporates and SMEs in India to experiment with and adopt AI in their learning ecosystems, with some already embedding AI-driven tools to support compliance, technical, and behavioral learning domains. At the same time, a considerable number are in the early stages—piloting use cases or exploring AI's potential through service providers and freelancers.

Overall, AI offers a powerful opportunity to create more inclusive, scalable, and intelligent learning architectures (Yadav, U. and Shrawankar, U., 2025). If guided by strategic intent, supported by the right capabilities, and aligned with organizational goals, AI can serve as a cornerstone for building future-ready workforces across the Indian subcontinent.

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APPENDIX A

SURVEY COVER LETTER

The surveys were conducted with a well-known group of participants with whom the researcher has built strong professional relationships over the past decade. These individuals are current or former students from various organizations and are directly connected to the researcher through ongoing learning and development engagements.

Given this established rapport and trust, there was no requirement for a separate survey cover letter or formal introduction. The researcher personally shared the Zoho Survey links with the participants, who willingly participated and submitted their responses directly. The informal yet credible nature of this communication ensured high response quality and relevance, as the participants clearly understood the context and purpose of the research.

This personalized approach not only streamlined the data collection process but also reinforced the authenticity and depth of insights, as the learners felt comfortable and motivated to provide honest and informed feedback.

APPENDIX B

SURVEY INTERVIEW QUESTIONS

Survey Questions for Learners in Corporations and Small and Medium Enterprises(SMEs):
Role of Artificial Intelligence (AI) in shaping the learning architecture within
corporations and small and medium enterprises (SMES) across the Indian sub
continent

Section 1: Current Practices and Challenges

1. How effective do you find your organization's current learning and development
(L&D) programs?

A. Very effective

B. Somewhat effective

C. Neutral

D. Ineffective

2. What is the biggest challenge you face in participating in your organization's L&D
initiatives?

A. Lack of engaging content

B. Limited access to learning resources

C. Time constraints

D. Unclear relevance of training

Section 2: Awareness and Openness to AI

3. How familiar are you with AI-based learning tools?

A. Very familiar

B. Somewhat familiar

C. Heard about it but unsure

D. Not familiar

4. How open are you to using AI tools in your learning and development?

A. Very open

B. Somewhat open

C. Neutral

D. Not open

Section 3: Enhancing Engagement and Content Curation

5. How do you think AI could improve learning engagement?

A. Personalizing learning paths

B. Gamified, interactive content

C. Instant feedback and support

D. No significant enhancement

6. How would you feel about AI curating content tailored to your learning needs?

A. Very excited

B. Somewhat interested

C. Neutral

D. Not interested

Section 4: Identifying Needs and Measuring Success

7. How are your learning needs currently identified?

- A. Performance reviews
- B. Managerial input
- C. Feedback surveys
- D. No structured process

8. How do you think AI can better measure training success?

- A. Tracking learning progress
- B. Detailed analytics and reporting
- C. Work performance improvements
- D. AI cannot help

Section 5: General Perception

9. How willing are you to embrace AI tools for your professional growth?

- A. Very willing
- B. Somewhat willing
- C. Neutral
- D. Not willing

10. What impact do you think AI will have on corporate learning?

- A. Transformative and effective
- B. Helpful with limitations
- C. No significant changes
- D. Negative impact

APPENDIX C

INTERVIEW GUIDE

The interviews were conducted with CHROs, Managing Directors, Heads of Human Resources, Learning Heads, and Learning Leads from various organizations. The researcher has maintained long-standing professional relationships with these individuals over the past decade, having collaborated with them in various learning and development capacities. As a result, there was no need to issue a formal interview guide or written consent letter.

All interviews were conducted via telephonic conversations, with prior verbal consent obtained from each participant. Consent was sought either through a direct phone call or via WhatsApp messages, where the purpose of the interview was clearly explained before finalizing the appointment. This informal yet respectful approach was deemed appropriate, given the mutual trust and familiarity between the researcher and the interviewees.

Each interview lasted between 45 to 90 minutes, depending on the depth of the discussion. The researcher also requested and received verbal permission to note key points verbatim during the conversation and, where necessary, to audio record the session. These recordings and notes were used solely for research documentation and analysis, ensuring confidentiality and ethical handling of data.

This approach facilitated open and candid conversations, enabling the collection of rich, qualitative insights that are central to the study's objectives. The personalized communication style, based on mutual trust, enhanced the authenticity and depth of the information shared.

APPENDIX D
INTERVIEW QUESTIONS

Personal Interview Questions (for CHROs, Head of Human Resources, Managing Directors, Learning Heads and Learning Leads): Role of Artificial Intelligence (AI) in shaping the learning architecture within corporations and small and medium enterprises (SMES) across the Indian sub continent

Section 1: Current Learning and Development Practices

1. Can you describe the current learning and development (L&D) practices in your organization?
2. What are the primary challenges your organization faces in implementing effective L&D initiatives?
3. How do you currently measure the success of your L&D programs?

Section 2: Awareness and Openness to AI in L&D

1. How familiar are you with the use of AI in learning and development?
2. What are your initial thoughts about integrating AI into your organization's L&D practices?
3. Are there any concerns or barriers your organization might face in adopting AI-driven learning solutions?

Section 3: Readiness to Embrace AI

1. Does your organization have a strategy or timeline for adopting advanced technologies like AI for L&D?

2. How do you assess your organization's readiness to embrace AI tools for employee development?

Section 4: Enhancing Learning Engagement with AI

1. How do you think AI can improve learner engagement in training programs?
2. In your opinion, how effective could AI be in tailoring learning experiences to individual needs?

Section 5: AI in Content Creation and Curation

1. How do you currently create and curate content for training programs?
2. What role do you think AI can play in streamlining content creation and customization for L&D initiatives?

Section 6: Identifying Learning Needs and Measuring Success

1. How does your organization identify learning needs across different teams and roles?
2. Do you see AI as a tool to better understand and predict learning needs? If so, how?
3. How can AI be leveraged to measure the impact and success of a learning intervention more effectively?