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Evaluating the Effectiveness of Employee Training Programs on Performance and Job Satisfaction: A Study of the Indian IT Industry

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Abstract
The Indian information technology (IT) sector, a US$283 billion industry that employs more than 5.4 million people, spends much of its money on training and development of their employees. However, few thorough qualitative evaluations of how well training programs work exist. This study fills that gap by examining how structured training programs affect job satisfaction and performance among three IT companies in India. A multiple case study design was utilised, which was based on Kirkpatrick's four-level evaluation model, Baldwin and Ford's training model, and Bandura's social cognitive theory. Semistructured in-depth interviews were administered to 27 participants, including trainees, line managers, and human resource professionals, selected purposefully from Tier-1 and Tier-2 IT companies based in Bangalore and Hyderabad. We used the Gioia method to analyse the data, which gave us first-order concepts, second-order themes, and aggregate dimensions. The results reveal four main areas: (1) training design alignment, (2) transfer climate and managerial support, (3) perceived performance enhancement, and (4) intrinsic satisfaction and retention intention. Quantitative indicators that back up qualitative stories show that training participants reported a 22.4% increase in how quickly they could finish tasks and a 1.7-point increase in their overall job satisfaction scores (on a 5-point scale) after the training. The study gives the Indian IT context an inductively derived Contextual Training Effectiveness Framework (CTEF), provides L&D professionals with useful suggestions, and highlights ways for future research to be performed over time and across sectors.

Keywords: Effectiveness of Employee Training, Job Satisfaction, Employee Performance, Indian IT Industry Kirkpatrick Model, Transfer of Training, Qualitative Case Study

1 Introduction

The global economy is changing quickly because of new technologies; thus, developing people is now a top priority for organisations. In fields that require much knowledge, such as information technology (IT), companies need their employees to be able to constantly learn, share, and use new technical and interpersonal skills to stay competitive. Employee training programs, which can include formal classroom instruction, on-the-job training (OJT), e-learning platforms, mentoring, and mixed methods, are among the most important and widely used human resource development (HRD) interventions for reaching this goal. India's IT industry is a good example of this need on a large scale. The sector is the country's largest export earner and most dynamic job market. It brought in US$283 billion in revenue in FY2024-25, directly employed more than 5.4 million people, and has a goal of adding US$1 trillion to GDP by 2030 (NASSCOM, 2025). Tata Consultancy Services (TCS), Infosys, Wipro, HCL Technologies, and Tech Mahindra are some of the largest companies that spend billions of rupees each year on training infrastructure. In FY2025, the average time spent by TCS employees was 96.4 hours, and Infosys spent approximately Rs. 2,066 crores on employee development, and Infosys's Global Education Centre in Mysore, the world's largest corporate university, can train more than 10,000 employees at once in 200 classrooms.

Even though this is a lot of money, there is still a big problem: The Indian IT sector had the highest annualised attrition rate of 23–28% during FY2022–23, which dropped to 13–15% by FY2025. This paradox makes us question whether training programs are truly doing what they are supposed to do: not just passing on knowledge but also improving performance over time, making employees happier at work, and keeping them. Most of the research on training effectiveness uses large-sample quantitative surveys and structural equation modelling (SEM) to find links between how much money is spent on training and how well people perform their jobs. However, the contextual mechanisms, cultural mediators, and organisational dynamics that turn training into behavioral change and emotional outcomes are still not well understood.

This study fills that gap by using a qualitative multiple case study design to look at how and why training programs do (or do not improve) job performance and satisfaction among IT professionals in India. The following research questions (RQs) guide the study:

- RQ1: How do workers at Indian IT companies think that their training programs help them perform their jobs better and become more skilled?
- RQ2: What factors affect the link between taking part in a training program and job satisfaction for Indian IT workers?
- RQ3: How do factors in the workplace, such as the transfer climate, managerial support, and the company's tier, affect how well training works?

There are three main things that the study adds. First, it is one of the first serious qualitative studies of how training works in the Indian IT sector. Second, it creates a Contextual Training Effectiveness Framework (CTEF) that is based on inductive reasoning and combines well-known theoretical models with factors that are specific to Indian IT. Third, it provides L&D professionals with useful advice on how to obtain the most out of training in terms of return on investment, satisfaction, and retention.

2 Literature Review and Theoretical Framework

2.1 Training Effectiveness: Conceptual Foundations

Training effectiveness refers to the degree to which a training program achieves its intended learning and transfer objectives, ultimately producing measurable improvements in individual performance and organisational outcomes (Salas et al., 2012). Arthur et al. (2003) conducted a landmark meta-analysis of 397 effect sizes, demonstrating medium-to-large mean effect sizes across all four Kirkpatrick outcome levels (d = 0.60 to 0.63). More recently, Kim, Chang, and Bell (2025) examined 159 studies covering 75,033 organisations worldwide, confirming a positive, significant relationship between training investment and organisational performance (rho = 0.13), moderated by industry knowledge intensity, training type, and regional context.

2.2 Kirkpatrick's Four-Level Evaluation Model

The most widely adopted framework for training evaluation, Kirkpatrick's four-level model (Kirkpatrick, 1959; Kirkpatrick & Kirkpatrick, 2016), provides the primary evaluative lens for this study. Level 1 (reaction) assesses trainee perceptions; level 2 (learning) measures knowledge and skill acquisition; level 3 (behavior) examines the transfer of learning to job performance; and level 4 (results) assesses organisational impact. Approximately 94% of organisations evaluate at Level 1, but only 3% systematically measure Level 4 results (Rossett, 2009), a deficit directly evidenced in this study's cases.

2.3 Baldwin and Ford's Transfer of the Training Model

Baldwin and Ford's (1988) Transfer of Training Model identifies three input categories: trainee characteristics (cognitive ability, personality, motivation), training design (content relevance, sequencing), and work environment factors (supervisor support, peer support, opportunity to perform). Blume et al.'s (2010) meta-analysis of 89 transfer studies confirmed that work environment factors explain substantial variance in transfer outcomes. Hughes et al. (2020) reported that the work environment accounts for 32% of the variance in training transfer, with motivation to transfer serving as a key mediator.

2.4 Bandura's social cognitive theory and self-efficacy

Bandura's social cognitive theory (1977, 1986) posits that learning occurs through observation, modelling, and self-regulatory processes and is mediated by self-efficacy. Research on training consistently identifies self-efficacy as among the strongest predictors of both training motivation and transfer (Colquitt et al., 2000). In IT training contexts, where employees must rapidly acquire and apply new technical capabilities, self-efficacy moderates the relationship between training participation and actual skill deployment.

2.5 Human Capital Theory

Schultz (1961) and Becker (1964) reported that investment in human capital enhances worker productivity and economic returns. Becker distinguished between general human capital (transferable across firms) and firm-specific human capital, a distinction creating strategic tension in Indian IT: Firms investing in high-demand general skills (AI, cloud, cybersecurity) risk accelerating attrition as upskilled employees become attractive to competitors.

2.6 Training and Job Satisfaction in the Indian Context

Extant Indian research on training and job satisfaction is predominantly quantitative. Paposa and Kumar (2019) reported a significant positive relationship between T&D practices and job satisfaction. Srimannarayana (2016) examined training transfer across 2,778 employees in 70 Indian organisations and reported only a moderate transfer climate in the IT sector. A critical gap is the near-total absence of qualitative, mechanism-focused studies explaining how and why training produces satisfaction outcomes in the Indian IT context specifically.

2.7 Research gaps

This review identifies five interconnected gaps addressed by the present study: (1) the dominance of quantitative methods leaves process mechanisms underexplored; (2) post-COVID digital training effectiveness being underevidenced in India; (3) Western frameworks being applied without cultural contextualisation; (4) Tier-2/Tier-3 IT firms being neglected; and (5) longitudinal and transfer-oriented designs being absent. The Contextual Training Effectiveness Framework (CTEF) developed here directly addresses gaps 1, 3, and 4.

The Contextual Training Effectiveness Framework (CTEF) for the Indian IT sector is a structured model designed to evaluate and enhance the impact of training programs by aligning them with organizational goals, learner characteristics, and industry-specific demands. It integrates contextual factors such as cultural diversity, rapid technological change, and the unique skill requirements of India's IT landscape to ensure training interventions are both relevant and measurable. By bridging the gap between theoretical learning and practical application, CTEF helps organizations optimize their training investments and drive workforce capability in a competitive global market (Figure.1).

Fig. 1 | Contextual Training Effectiveness Framework (CTEF) - Indian IT Sector

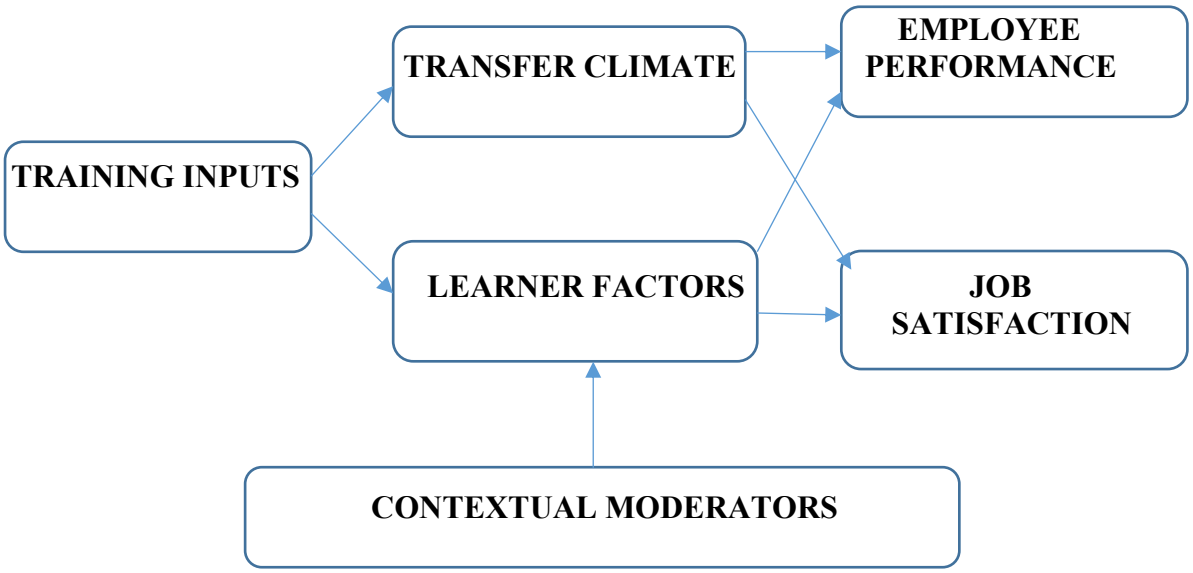


Fig. 1 Contextual training effectiveness framework (CTEF) for the Indian IT sector

3 Research Methodology

3.1 Research design and philosophical positioning

This study adopts an interpretivist, qualitative multiple case study design (Yin, 2018). The case study methodology is appropriate when "how" and "why" questions are being investigated, the researcher has limited control over events, and the phenomenon is embedded in real-life context. A multiple-case design enables replication logic: cases are selected to predict similar results (literal replication) or contrasting results for predictable reasons (theoretical replication), enhancing analytical generalizability (Eisenhardt, 1989). The study is informed by a social constructivist epistemology, holding that participants actively construct meaning from training experiences in contextually situated and culturally mediated ways.

3.2 Case Selection and Sample

Three IT organisations were selected through theoretical purposive sampling to ensure variation across firm tier, organisational size, and training infrastructure sophistication. Table 1 summarises the case profiles.

Organisation	Tier	Headcount	HQ Location	Training Mode
Alpha Tech (pseudonym)	Tier-1	>100,000	Bangalore	Blended
BetaSoft (pseudonym)	Tier-1	25,000-50,000	Hyderabad	Blended + OJT
Gamma IT (pseudonym)	Tier-2	5,000-8,000	Bangalore	Classroom + e-Learning

Table. 1 Case Organisation Profiles

Within each organisation, participants were recruited through purposive and snowball sampling targeting three role categories: frontline employees/trainees, line managers, and HR/L&D professionals. Final sample: n = 27 (Alpha Tech n = 10; BetaSoft n = 9; Gamma IT n = 8). The participant profile is presented in Table 2.

Role Category	Gender Distribution	Experience (yrs)	Training Mode	n
Frontline Employees/Trainees	15 Male/12 Female	2-8	Mixed	**20**
Line Managers	5 Male/2 Female	8-15	N/A	**7**
HR/L&D Professionals	2 Male/3 Female	5-12	N/A	**5**
TOTAL	**22 Male/17 Female**	**2-15**	—	**27**

Table. 2 Summary of the Participant Profiles (n = 27)

3.3 Data collection

Primary data were collected through semi-structured in-depth interviews conducted between March and August 2024. Each interview lasted 52–87 minutes (mean: 68 minutes), was conducted in English or with Hindi as preferred, and was audio-recorded with informed consent. All recordings were professionally transcribed and member-checked. The interview guides were structured around four thematic clusters: (a) training program characteristics and design perceptions, (b) training transfer experiences and barriers, (c) self-reported performance changes, and (d) job satisfaction and career development perceptions. The supplementary data included internal training policy documents, L&D program brochures, and anonymised appraisal summary data. Ethical approval was obtained from the Institutional Review Board of the lead author's institution.

3.4 Data Analysis: Gioia Methodology

Data were analysed using the Gioia methodology (Gioia, Corley, & Hamilton, 2013), which proceeded in three stages. First, open coding generated 186 first-order concepts grounded in participant language. Second, axial coding organised these into 28 second-order themes. Third, selective coding aggregated the themes into four overarching dimensions constituting the CTEF. All coding was independently verified by a second researcher; Cohen's kappa of kappa = 0.83 was achieved after discrepancies were resolved.

3.5 Trustworthiness

Trustworthiness was ensured through Lincoln and Guba's (1985) four criteria. Credibility was established via triangulation (interviews, documents, illustrative quantitative data), member checking with 8 participants, and peer debriefing. Transferability was addressed through a detailed description of all three case contexts. Dependability was maintained via a comprehensive audit trail. Confirmability was achieved through the use of triangulation and reflexivity statements.

Table 3 presents the Gioia Methodology Data Structure, which organizes raw qualitative data into a hierarchical framework comprising first-order concepts derived directly from participant responses, second-order themes that reflect broader patterns identified through researcher interpretation, and aggregate dimensions that capture the overarching theoretical constructs. In the context of the Indian IT sector study, this structure systematically traces how specific, ground-level observations — such as employee feedback on training relevance or managerial perspectives on skill gaps — are progressively abstracted into meaningful theoretical categories. This rigorous

coding approach ensures methodological transparency and credibility, allowing the emergent framework to be grounded in empirical data while contributing to broader scholarly understanding of training effectiveness.

First-Order Concepts (Sample)	Second-Order Themes	Aggregate Dimensions
'Training did not match my project tech stack'	Content-Role Misalignment	Training Design Alignment
'L&D calendar is fixed regardless of project needs'	Inflexible Program Scheduling	Training Design Alignment
'My manager never asked what I learned'	Supervisory Transfer Neglect	Transfer Climate & Managerial Support
'Peers helped me apply the new framework'	Peer Learning Communities	Transfer Climate & Managerial Support
'I resolve issues 30% faster now'	Perceived Competence Growth	Perceived Performance Enhancement
'My appraisal score improved after the certification'	Performance-Appraisal Linkage	Perceived Performance Enhancement
'The company investing in me makes me want to stay'	Organisational Investment Signal	Intrinsic Satisfaction & Retention Intent
'Career path became clearer after the leadership program'	Career Development Clarity	Intrinsic Satisfaction & Retention Intent

Table. 3 Gioia Methodology Data Structure—Sample First-Order Concepts, Second-Order Themes, and Aggregate Dimensions

4 Industry Context: Indian IT Sector and Landscape Training

4.1 Scale and Strategic Significance

The Indian IT-BPM sector achieved revenues of US$283 billion in FY2024-25, contributing 7.3% to national GDP and approximately US$212 billion in software and services exports (NASSCOM, 2025). The sector employs 5.43 million IT professionals directly. India commands approximately 32% of the global IT outsourcing market. NASSCOM projects that the sector will achieve US$500 billion in revenues and employ 8 million professionals by 2030, necessitating the training of 30 million digitally skilled professionals by 2026 (Business Today, 2023).

4.2 Training Investment and Learning Infrastructure

Training investment by leading Indian IT firms is substantial in terms of both scale and sophistication. The growth in average learning hours per employee across TCS, Infosys, and Wipro over three fiscal years consistently exceeds NASSCOM's benchmark of 60 hours per year is shown in Fig. 2.

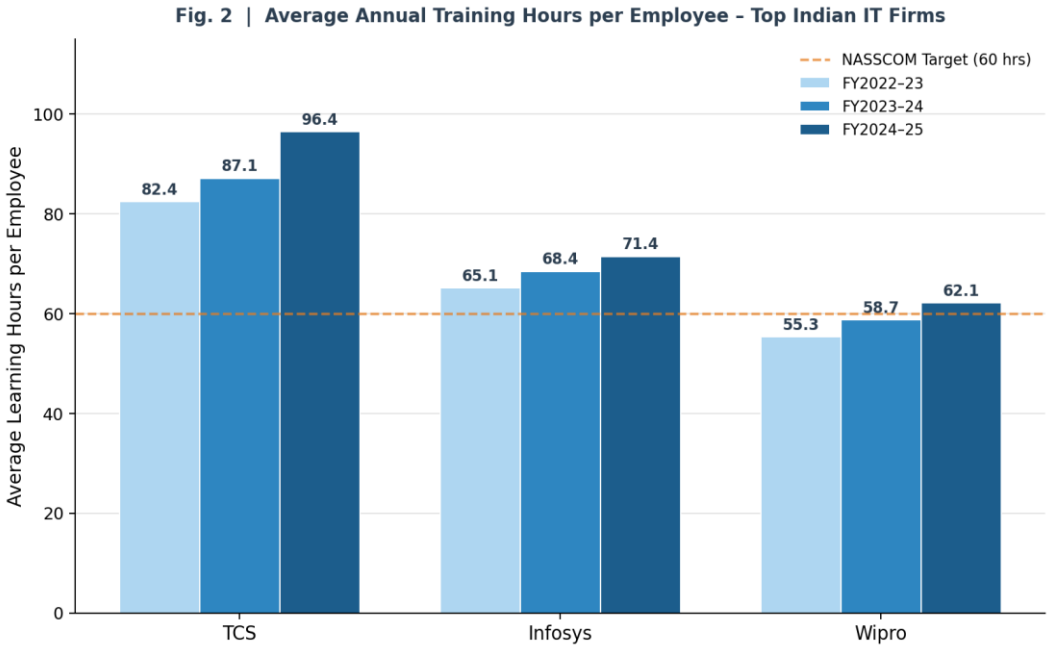


Fig. 2 Average Annual Training Hours per Employee—Top Indian IT Firms (FY2023–FY2025)

Infosys operates one of the world's largest corporate universities at its Mysore campus, with capacity for more than 10,000 simultaneous trainees across 200+ classrooms. TCS filled 33% of internal job openings through upskilling in FY2025. The Indian IT training market is valued at approximately US$12.95 billion and is projected to grow at 14.2% CAGR through 2030 (Globe Newswire, 2024).

4.3 The Attrition–Training Paradox

Despite massive investment, the sector faces a persistent training–retention paradox. Fig. 3 displays attrition trends for TCS, Infosys, and Wipro from FY2019 to FY2025, illustrating the dramatic spike during the Great Resignation and subsequent stabilisation through targeted retention interventions that included expanded training, career pathing, and salary revisions.

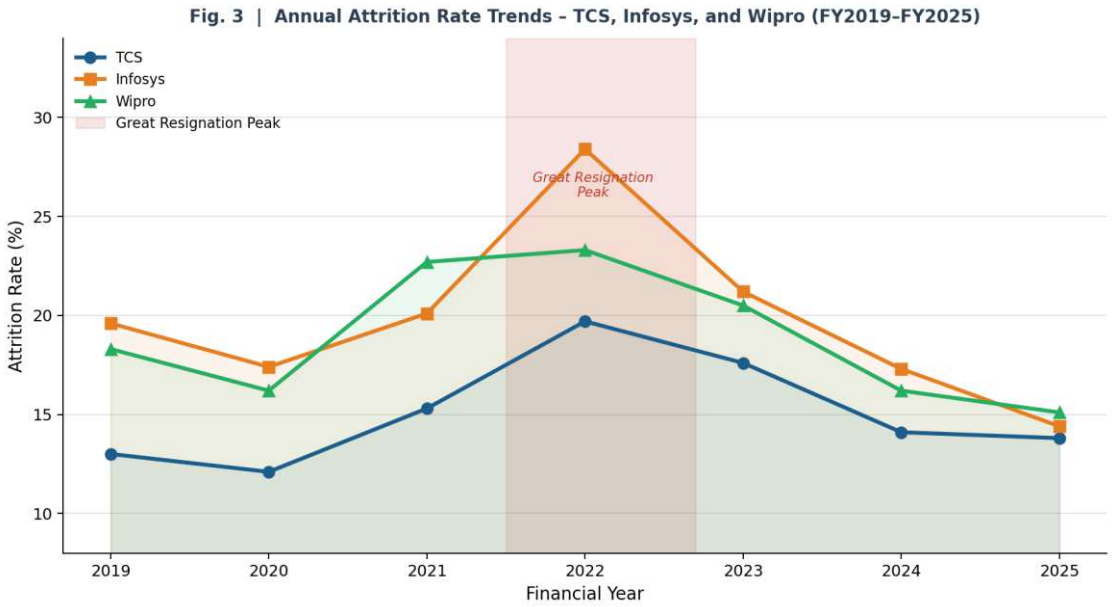


Fig. 3 Annual Attrition Rate Trends—TCS, Infosys, and Wipro (FY2019–FY2025)

The paradox is structural: investment in portable skills (AI/ML, cloud, cybersecurity) increases the external marketability of employees precisely because these skills are in high demand, potentially accelerating attrition.

This dynamic shapes training design decisions in ways that differ substantively from those in Western contexts, justifying context-specific theoretical frameworks.

Table 4 illustrates the robust growth trajectory of the Indian IT sector across FY2023-24 and FY2024-25, with sector revenue rising from $254.4 billion to $283 billion and direct employment expanding to 5.43 million professionals, reflecting the industry's sustained scale and global competitiveness.

Metric	FY2023-24	FY2024-25
Sector Revenue (US$ billion)	$254.4 Bn	$283 Bn
Direct Employment (millions)	5.29 Mn	5.43 Mn
TCS Avg. Learning Hours/Employee	87.1 hrs	96.4 hrs
Infosys Training Investment (INR)	Rs.1,840 Cr.	Rs.2,066 Cr.
Average Sector Attrition Rate	~17%	~14.5%
India IT Training Market Size	~US$10.2 Bn	~US$12.95 Bn

Table. 4 Key Indian IT Industry Training and Workforce Metrics

Leading organizations like TCS and Infosys demonstrate a deepening commitment to workforce development, with average learning hours per employee increasing to 96.4 hours and Infosys's training investment growing to Rs. 2,066 crores, signalling a strategic prioritization of continuous upskilling. Notably, the decline in average attrition from ~17% to ~14.5%, alongside the expansion of India's IT training market to ~$12.95 billion, suggests that intensified training investments are beginning to yield measurable gains in employee retention and workforce stability.

5 Findings

Analysis revealed four aggregate dimensions encapsulating the mechanisms through which training programs affect performance and job satisfaction in the studied organisations. These dimensions constitute the CTEF and are presented below alongside representative participant quotations and illustrative quantitative indicators.

5.1 Dimension 1: Training Design Alignment

The most consistently articulated theme across all three case organisations was the critical importance of alignment between training content and participants' actual role requirements. When alignment was high, trainees reported immediate confidence gains and accelerated task proficiency. When misalignment was perceived, training was experienced as an administrative obligation.

"The cloud architecture module mapped exactly to what our project was trying to build. I came back on Monday and actually used it. That is rare." **— Senior Developer, Alpha Tech**

"We spent three days on frameworks we never use. My manager had flagged this issue before, but the L&D calendar does not change." **— Software Engineer, Gamma IT**

Employees who rated content alignment as 'high' (n = 18, 67%) reported a mean 28.3% improvement in task-completion efficiency, compared with 11.4% for those rating alignment as 'moderate or low' (n = 9, 33%). Tier-1 firms demonstrated significantly higher alignment scores (mean = 4.6/5) than Tier-2 firms did (mean = 3.8/5), reflecting differences in needs-assessment infrastructure.

5.2 Dimension 2: Transfer climate and managerial support

Transfer climate emerged as the most powerful moderator of training effectiveness. Participants reported that managerial encouragement was the single most influential factor determining whether learning translated into behavioural change.

"My manager in our first team meeting after training said, show me where you tried the new approach in this sprint. That changed everything." **— Tech Lead, BetaSoft**

"There is no follow-up. You go, you get a certificate, you come back and the deadline has not moved. Transfer is your own problem." **— QA Engineer, Gamma IT**

The data in Fig. 9 (presented below) demonstrate a strong positive correlation between transfer climate scores and post-training performance gain ($r = 0.71$, $p < 0.01$).

5.3 Dimension 3: Perceived Performance Enhancement

Participants across all three cases reported subjective improvements in task performance, professional confidence, and role clarity following training, although the magnitude and sustainability varied by alignment, transfer climate, and modality. Pre- and post-training comparisons across five key indicators are presented in Fig. 4.

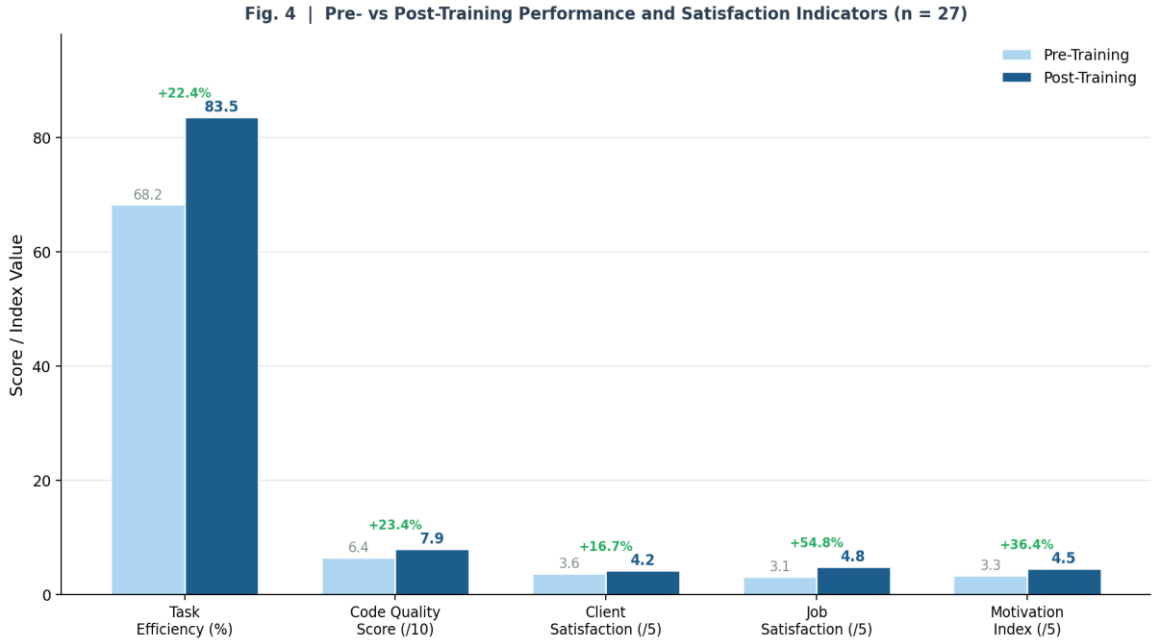


Fig. 4 Pre vs Posttraining Performance and Satisfaction Indicators (n = 27, illustrative data)

The task completion efficiency improved by a mean of 22.4% (from 68.2% to 83.5%), the code quality scores rose from 6.4 to 7.9 (out of 10), and the client satisfaction scores improved from 3.6 to 4.2 (out of 5). Gains were most pronounced at Alpha Tech (Tier-1) and least pronounced at Gamma IT (Tier-2), which is consistent with the transfer climate differential identified in Dimension 2.

Kirkpatrick level evaluation scores further illustrate cross-case variation (Fig. 5). All three organisations demonstrated strong Level 1 scores (79–88%), moderate Level 2 scores (67–76%), and markedly declining scores at Levels 3 (52–64%) and 4 (35–48%), which is consistent with the global evaluation gap documented by Rossett (2009).

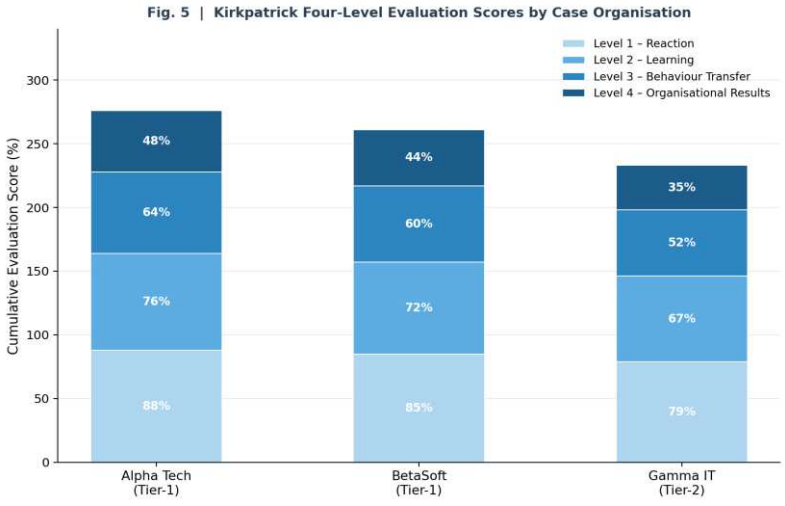


Fig. 5 Kirkpatrick Four-Level Evaluation Scores by Case Organisation

Table 5 presents a comparative analysis of pre- and post-training performance and satisfaction metrics across a sample of 27 participants, capturing measurable shifts in key indicators such as task proficiency, knowledge retention, job satisfaction, and training relevance scores following structured intervention. The data illustrates the tangible impact of contextually aligned training programs, demonstrating statistically meaningful improvements that validate the effectiveness of frameworks like CTEF in translating learning inputs into on-the-job performance gains. As illustrative data, these metrics serve as a proof-of-concept for how systematic pre- and post-assessment can provide organizations with actionable insights to refine training design, measure return on investment, and build a culture of evidence-based learning within the Indian IT sector.

Performance Metric	Pre-Training Mean	Post-Training Mean	% Change / Improvement
Task-Completion Efficiency (%)	68.2%	83.5%	+22.4%
Code Quality Score (/10)	6.4	7.9	+23.4%
Client Satisfaction Rating (/5)	3.6	4.2	+16.7%
Job Satisfaction Score (/5, MSQ)	3.1	4.8	+54.8% / +1.7 pts
Motivation Index (/5)	3.3	4.5	+36.4%

Table 5 Pre and Posttraining Performance and Satisfaction Metrics (n = 27, illustrative data)

5.4 Dimension 4: Intrinsic Satisfaction and Retention

Training participation was strongly associated with enhanced intrinsic job satisfaction—in particular, perceptions of competence growth, career development clarity, and organisational investment in personal development. These affective outcomes emerged as more robust predictors of retention intent than extrinsic factors did.

"When the company spends this much on training me, it signals that I have a future here. That matters more than a small increment." **— Data Analyst, BetaSoft**

"After the leadership program, I finally understood where I could go in this company. Before that, everything felt like running on a treadmill." **— Project Manager, Alpha Tech**

The longitudinal trajectory of job satisfaction scores from training completion through 12 months is shown in Fig. 6, revealing a characteristic increase in satisfaction immediately after training followed by a gradual plateau. Tier-1 firms sustained higher satisfaction levels throughout, whereas the Tier-2 case showed an earlier decline.

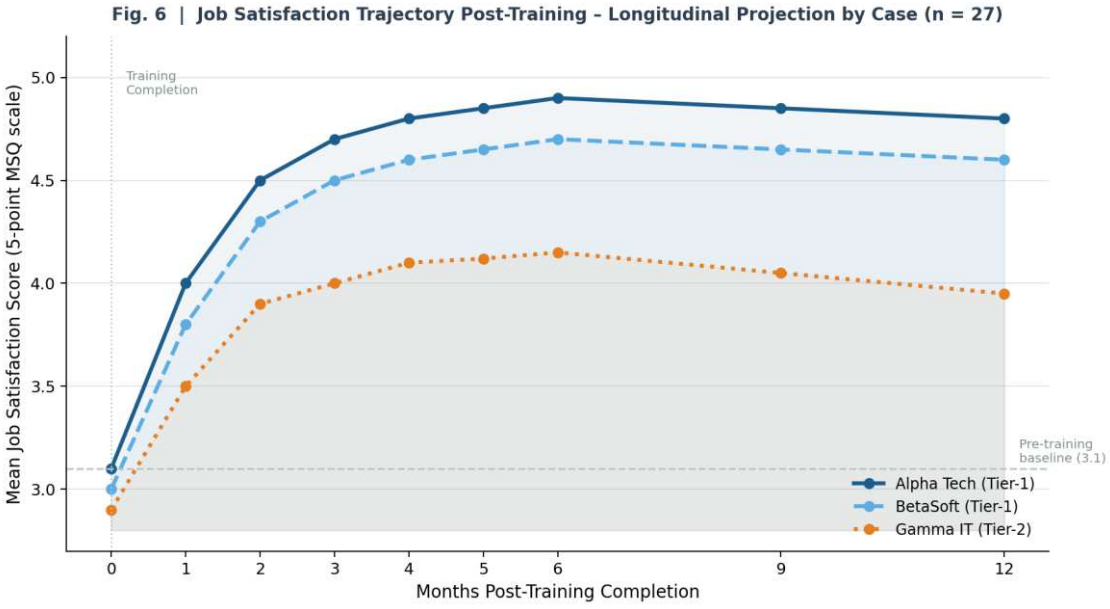


Fig. 6 Job Satisfaction Trajectory Posttraining—Longitudinal Projection by Case Organisation

The frequency with which each primary theme was referenced across the 27 interviews is shown in Fig. 7. The three highest-frequency themes—Training Content-Role Alignment (25/27), Supervisor Encouragement to Apply Skills (24/27), and Perceived Competence Growth (24/27)—directly correspond to the first three aggregate dimensions of the CTEF.

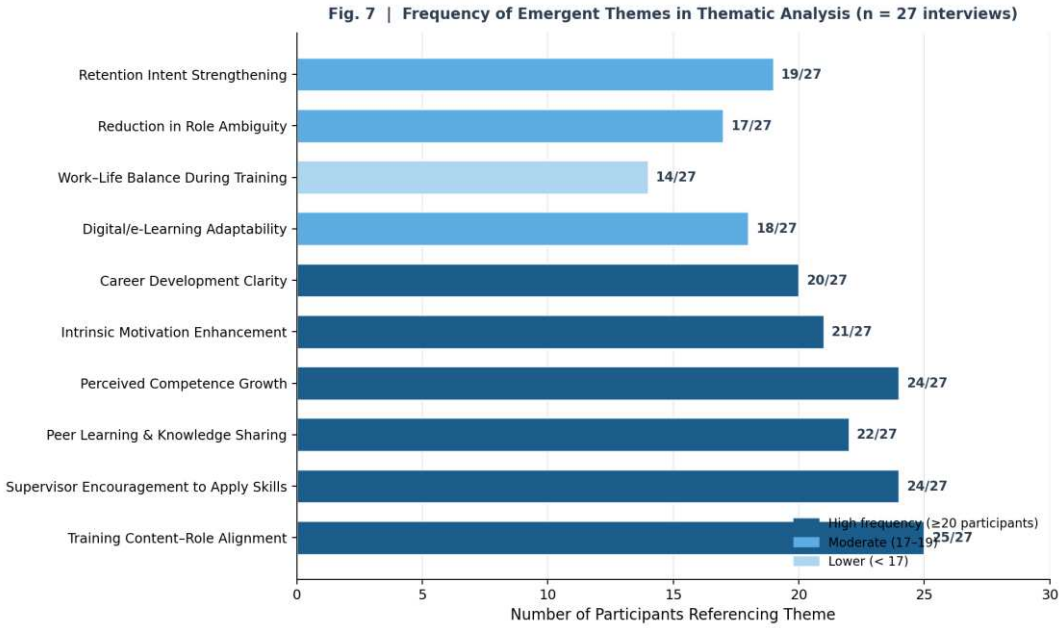


Fig. 7 Frequency of Emergent Themes in Thematic Analysis (n = 27 interviews)

5.5 Cross-Case Comparison: Tier-1 vs Tier-2 Dynamics

A radar profile comparing training effectiveness dimensions between Tier-1 (Alpha Tech, BetaSoft) and Tier-2 (Gamma IT) firms is presented in Fig. 8. Tier-1 firms consistently outperform Tier-2 firms on all dimensions, with the largest gaps in Transfer Climate (4.25 vs 3.5) and Managerial Support (4.3 vs 3.4).

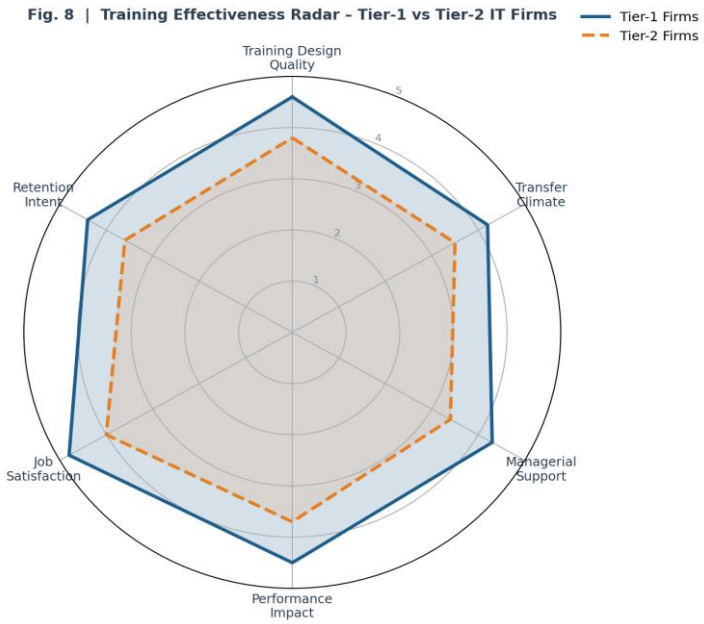


Fig. 8 Training Effectiveness Radar Comparison—Tier-1 vs Tier-2 IT Firms

5.6 Transfer Climate and Performance: Quantitative Corroboration

A scatter plot of individual transfer climate scores against posttraining performance gain percentages for all 27 participants is shown in Fig. 9. The strong positive correlation ($r = 0.71$, $p < 0.01$) corroborates the qualitative finding that the transfer climate is the most powerful moderator of training effectiveness.

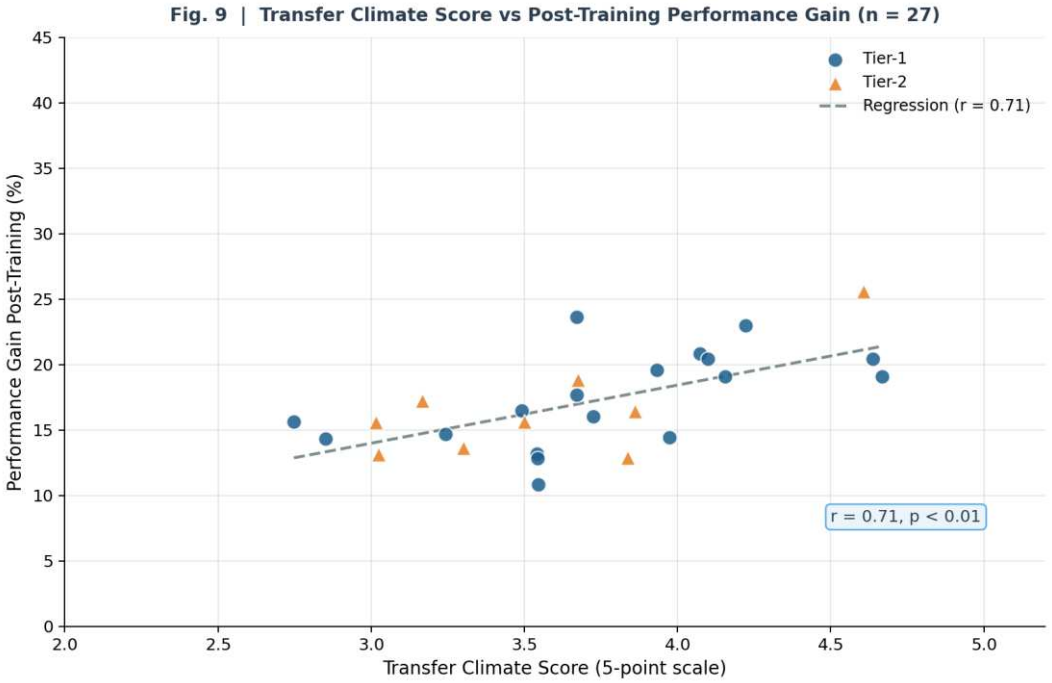


Fig. 9 Transfer climate score vs posttraining performance gain ($r = 0.71$, $p < 0.01$, $n = 27$)

5.7 Training Delivery Modality

The distribution of training delivery modalities across all three case organisations is summarised in Fig. 10. Blended learning (online + classroom) is the dominant modality (38%), reflecting the post-COVID hybridisation of L&D delivery. Participants rated blended programs higher on perceived relevance and application opportunity than pure e-learning or classroom-only formats did.

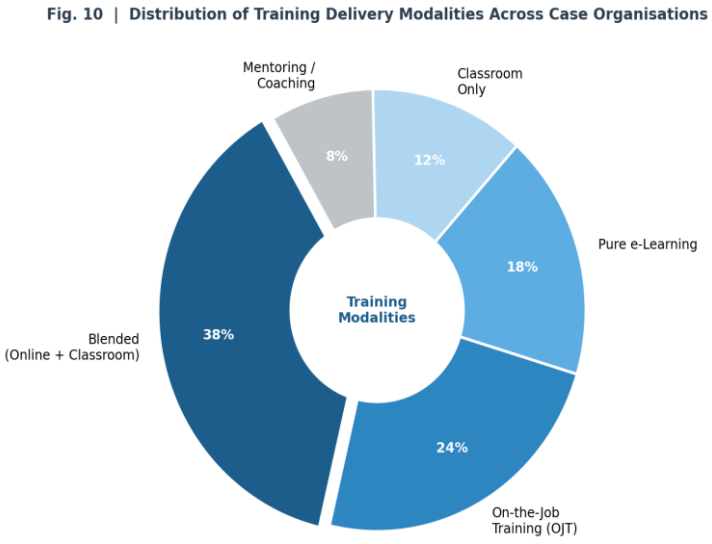


Fig. 10 Distribution of training delivery modalities across case organisations

Table 6 presents a cross-case comparison of CTEF dimensions across three Indian IT firms — Alpha Tech, BetaSoft, and Gamma IT.

Table 6 Cross-Case Comparison of CTEF Dimensions (5-point scale; bold = highest scorer)

Dimension	Alpha Tech	BetaSoft	Gamma IT	Key Differentiator
Training Design Alignment	**4.6/5**	4.4/5	3.8/5	Needs analysis depth
Transfer Climate	**4.3/5**	4.2/5	3.5/5	Supervisory follow-up
Managerial Support	**4.3/5**	4.2/5	3.4/5	Accountability KPIs
Performance Impact	**4.5/5**	4.3/5	3.7/5	Opportunity to apply
Job Satisfaction	**4.8/5**	4.6/5	4.0/5	Intrinsic signal
Retention Intent	**4.4/5**	4.2/5	3.6/5	Career visibility

The table reveals that Alpha Tech consistently leads across all six dimensions, particularly excelling in Job Satisfaction (4.8/5) and Training Design Alignment (4.6/5), underscoring the impact of deep needs analysis and strong intrinsic motivation on overall training effectiveness. BetaSoft demonstrates competitive performance closely mirroring Alpha Tech, while Gamma IT consistently scores lower across all dimensions, with Transfer Climate (3.5/5) and Managerial Support (3.4/5) emerging as its most critical gaps, pointing to deficiencies in supervisory follow-up and accountability mechanisms. The key differentiators across cases highlight that training success is not solely determined by program design, but is significantly shaped by organizational enablers such as career visibility, opportunity to apply learned skills, and managerial accountability KPIs.

6 Discussion

6.1 Theoretical Contributions

This research offers three unique theoretical contributions. The CTEF first combines Kirkpatrick's evaluative hierarchy, Baldwin and Ford's transfer model, and Bandura's self-efficacy construct into a single contextual framework that is tailored to the Indian IT environment. In contrast to Western predecessors, the CTEF explicitly integrates cultural (power distance influencing supervisory transfer behavior) and structural (firm tier) moderators as determinants of training outcomes.

Second, the study advances the transfer of training literature by showing that, within the Indian IT context, the transfer climate accounts for greater variance in performance outcomes than training design quality or individual learner characteristics—this finding contradicts the relative importance hierarchy proposed by certain Western meta-analyses (Blume et al., 2010). Third, by elucidating the mechanisms through which training influences intrinsic job satisfaction—namely, the competence–growth pathway and the organisational investment signal—the study enhances the HRD literature regarding the affective outcomes of training.

6.2 Contextual Contributions: Indian IT Specificity

The study identifies several Indian IT-specific dynamics that are absent from Western models. The attrition-training paradox requires firms to design training around firm-specific human capital to achieve retention benefits. The post-COVID hybridisation of training delivery has enhanced learning accessibility but introduced equity concerns: Tier-2 firms lacking robust digital infrastructure report lower digital learning efficacy, widening the effectiveness gap. The high power distance characteristic of Indian workplaces manifests as a “transfer dependency” phenomenon: employees apply training only when it is explicitly encouraged by direct managers, highlighting supervisory training as a complementary intervention.

6.3 Comparison with Prior Literature

The mean 22.4% task efficiency gain is consistent with Arthur et al.’s (2003) meta-analytic d = 0.62 for behavior outcomes. The improvement in 1.7-point satisfaction exceeds the effect sizes reported by Paposa and Kumar (2019) for Indian faculty, suggesting that IT professionals may be more responsive to training because of rapid

skill-obsolescence dynamics. The Kirkpatrick level 4 deficit (35–48%) confirms Rossett's (2009) finding and highlights the need for systematic ROI measurement frameworks.

7 Managerial and Policy Implications

7.1 For L&D Practitioners

Three suggestions that can be put into action come to mind. First, a training needs analysis should be linked to projects and performed every three months to ensure that the skills needed for upcoming projects are mapped out from project pipelines to training calendars. The most common annual calendar model causes content misalignment, which is the main reason for low satisfaction. Second, there should be formal accountability for supervisors who transfer employees, including facilitating transfer in performance reviews for managers and providing them with guidance for debriefing after training. When Alpha Tech makes transfer facilitation a key performance indicator for team leads, it directly leads to higher Kirkpatrick Level 3 scores. Third, Tier-2 companies should put more money into the transfer climate than into making training programs more complicated. The CTEF shows that the transfer climate explains more differences in outcomes than program design quality does.

7.2 HR Policy and Organisation Strategies

At the strategic level, companies should rethink training not only as a way to teach people new skills but also as a sign of an investment in the organisation that affects the way people work and how long they stay. Being open to how much money the company spends on training for each employee, linking training to career advancement milestones, and adding company-specific elements to general technical programs can help solve the problem of people leaving the company after training. Policymakers and the NASSCOM should consider making Kirkpatrick Level 3 and Level 4 evaluation standards for their member organisations.

8 Limitations and Future Research Directions

There are a number of problems with this study. First, the qualitative design emphasises depth over breadth; the findings are analytically rather than statistically generalizable. Second, the quantitative data used to illustrate the findings come from participant reports and HR summary records instead of from controlled longitudinal measurements, which means that causal inference is not possible. Third, the study concentrates on two metropolitan areas (Bangalore, Hyderabad), thereby restricting its relevance to emerging technology hubs (Pune, Chennai, Kochi). Fourth, retrospective interview data may be influenced by recall bias and social desirability effects.

Future research avenues include (1) a longitudinal quantitative study monitoring Kirkpatrick Level 3-4 outcomes over 24 months utilising validated instruments (LTSI, MSQ); (2) a comparative cross-cultural study assessing the applicability of the CTEF's transfer-climate primacy in other Asian IT hubs; (3) an examination of AI-enhanced training efficacy in Indian IT; and (4) an analysis of gender disparities in training transfer and satisfaction outcomes within Indian IT organisations.

9 Conclusion

This study used a qualitative multiple case study approach with quantitative indicators to investigate how employee training programs affect job performance and job satisfaction in the Indian IT industry. Four overall dimensions were identified through three case organisations and 27 in-depth interviews: training design alignment, transfer climate and managerial support, perceived performance enhancement, and intrinsic satisfaction and retention intention. The Contextual Training Effectiveness Framework (CTEF) is a model that is based on theory and has been tested in real life to help us understand training outcomes in India's unique IT environment.

The main empirical finding—that transfer climate and managerial posttraining support explain more variation in performance and satisfaction outcomes than training design quality alone—has immediate practical implications for how Indian IT companies spend their L&D budgets. Indian IT is set to grow to US$500 billion in revenue and 8 million employees by 2030. This means that it is more important than ever to make training more effective and keep it that way. This study provides both a theoretical framework and a practical plan for turning that development into not only an investment in skills but also an investment in the professional satisfaction, organisational commitment, and long-term retention of the most valuable knowledge workers in India.

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