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A Study on Unveiling the Employee Perspective on Skill Development and Performance for Training Needs w.r.t. IT Industry

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Abstract:

The current study is intended at unveiling the employee perspective on skill development and performance for training needs with reference to the IT industry. Conclusive research of descriptive and analytical nature was conducted. Data was collected through surveys and interviews from employees working in IT organizations. The study focused on aspects such as training frequency, relevance, methods adopted and employee satisfaction levels with existing training initiatives. The data was statistically analysed to draw meaningful insights.

The results show the workplace training programs are being increasingly supplemented or supplemented with advanced technologies like artificial intelligence and virtual reality. There is also a strong association between customized training and employee performance. Preference for training methods included modern methods like self-directed learning modules and mentorship-style options for employee development. Other challenges included time constraints versus greater relevance.

Overall, the study advocates the inclusion of emerging skills like data analytics and measurable outcomes for improving productivity in the workplace. The implications of the findings suggest organizations match their training practice with the needs of the evolving industries and their employees. Directions for future empirical research are briefly discussed.

Key words: Skill development, employee performance, IT industry, training programs.

1. INTRODUCTION

In today's competitive and technologically advanced environment, employee performance is an essential element of organizational success and sustainability. As the industries, particularly in the IT sector, change quickly, organizations are more frequently aware of the strategic value of training and development for preparing the workforce to adapt to shifting challenges and expectations. Training and development can enhance job-related capabilities but also contribute to a large extent to job satisfaction, employee engagement, employee retention and overall efficiency in the workplace.

Training is characterized as a structured process through which an individual learns knowledge and skills that have specified application (Dale S. Beach); whereas, development is a more all-encompassing idea

focused on long-term growth, preparing an employee for future roles and responsibilities. Training and development are the cornerstones of organizational flexibility, assisting an employee to keep pace with technology and industry/occupational trends/developments. According to Michael J. Julius, training increases the aptitudes and capabilities required to perform specific jobs effectively.

The IT sector necessitates constant upskilling and reskilling because of rapid advancements in technology and business processes. Part of this is the essential role of skill development in enabling organizations to retain their competitive edge. A critical tactical approach to enabling skill development is through the process of training needs assessment (TNA), which helps organizations identify gaps between employees' current capabilities and those required to meet organizational goals. TNA makes training program relevance, focus and efficacy possible through tools like organizational analysis, task analysis and person analysis.

The embedding of Indian Knowledge Systems (IKS) with modern training practices invokes a holistic learning model which leverages the guru-shishya model of training, context-driven, personalized and value-based training. Such training can stimulate and develop ethical behaviour, sustainability, emotional intelligence and a commitment to lifelong learning. This integrative framework develops technical skills, but also interpersonal skills, critical thinking and workplace harmony.

The application of innovative techniques including e-learning platforms, simulation training, gamification and virtual reality has further transformed the training landscape. These methods provide flexibility, interactivity and cost-effectiveness, making learning more accessible and impactful. On-the-job and off-the-job training methods complement each other in delivering practical experience and theoretical knowledge. Programs such as job rotation, mentoring, classroom training, workshops and coaching are widely employed to meet diverse learning preferences and operational needs.

Furthermore, training contributes to a wide array of organizational outcomes: enhancing productivity, promoting innovation, reducing workplace errors, improving employee morale and facilitating career advancement. When implemented strategically, training supports leadership development, addresses specific skill gaps and aligns employee performance with long-term organizational goals.

The present study focuses on unveiling the employee perspective on skill development and training needs in the IT industry. It explores the current training practices, assesses their impact on performance and identifies existing gaps in the system. By doing so, the study aims to offer actionable insights into how training can be optimized to foster sustainable growth, innovation and employee satisfaction**.**

2. LITERATURE REVIEW

Training and development have garnered significant importance in current organizational studies, especially concerning employee performance and organizational success. Many researchers have contributed to the understanding of the influence, process, and effects of effective training in a variety of industries, particularly in the practice of training in the IT field.

- Chopra and Malhotra [1] observed that structured training environments foster creativity and innovation among employees, allowing them to express new ideas and develop effective solutions.

Similarly, Das and Roy [2] emphasized the importance of cross-cultural training in multinational organizations, highlighting that such initiatives enhance communication, collaboration and cohesion within culturally diverse teams.

- According to Diwedi and Nema [3], continuous training and learning significantly influence job satisfaction and employee retention, thus contributing to organizational growth. Fegade and Sharma [4] stressed the necessity of high-quality training materials and effective delivery methods, noting that managerial support plays a vital role in connecting training outcomes with organizational objectives.
- Joshi and Verma [5] analyzed blended learning approaches and found that integrating traditional training with technology-based learning improves learner engagement and knowledge retention. Kapoor and Desai [6] studied training evaluation models and concluded that iterative feedback mechanisms are crucial for continuous improvement and assessing the overall effectiveness of training programs.
- Kumar and Patel [7] examined the relationship between training and employee engagement, stating that structured training programs enhance both intrinsic and extrinsic motivation. They argued that engagement increases when training aligns with employee interests and organizational priorities. Mhaskar and Madar [8] further observed that e-learning provides flexibility and cost-effective learning opportunities, allowing employees to balance organizational demands and personal development.
- Mishra and Jain [9] found that gamification in training programs significantly improves participation and learning retention through interactive methods. Reddy and Iyer [10] emphasized the role of soft skills training in career advancement, asserting that communication, teamwork and interpersonal skills are critical for success in modern professional environments.
- Sharma and Gupta [11] explored leadership training and found that developing leadership capabilities enhances decision-making and innovation within organizations. Srivastava [12] revealed that personalized and efficient training delivery promotes employee satisfaction and reduces turnover, thereby lowering operational costs. Singh and Kaur [13] demonstrated a strong connection between consistent training and increased productivity, noting that sustained learning opportunities improve overall efficiency.
- Rao and Mehta [14] advocated on-the-job training for bridging skill gaps, emphasizing experiential learning as a powerful tool for addressing evolving industry needs. Finally, Bansal and Tripathi [15] underlined the significance of Training Needs Analysis (TNA) in identifying specific skill deficiencies, concluding that aligning training with job requirements leads to measurable performance improvements.

3. RESEARCH METHODOLOGY

Research methodology is a crucial aspect of any academic inquiry, guiding the entire process of data collection, analysis and interpretation. The current study adopts a structured approach to investigate the training needs and the impact of skill development on employee performance in the IT industry.

3.1 Problem Identification

The study focuses on unveiling the employee perspective on training effectiveness and skill development in the IT sector. It seeks to understand how well-designed training programs contribute to performance enhancement, retention and adaptability in an evolving business landscape.

3.2 Objectives

To identify gaps in existing skill sets and competencies of employees in the IT industry.

To assess the effectiveness of current training programs and delivery methods.

To explore the correlation between job roles, training participation and performance improvements.

To examine employee perceptions regarding the impact of training on their personal and professional growth.

To analyze the future trends and technological integration in training strategies.

3.3 Hypotheses

Hypothesis 1

- **Null Hypothesis (H_0):** The use of emerging technologies in corporate training does not significantly influence employee engagement levels in the IT industry.
- **Alternative Hypothesis (H_1):** The use of emerging technologies in corporate training significantly increases employee engagement levels in the IT industry.

Hypothesis 2

- **Null Hypothesis (H_0):** Personalized training approaches do not have a significant relationship with employee satisfaction in the IT industry.
- **Alternative Hypothesis (H_1):** Personalized training approaches have a significant positive relationship with employee satisfaction in the IT industry.

Hypothesis 3

- **Null Hypothesis (H_0):** Implementing self-paced learning methods does not result in significant improvements in employee performance in the IT industry.
- **Alternative Hypothesis (H_1):** Implementing self-paced learning methods leads to significant improvements in employee performance in the IT industry.

3.4 Research Design

The study is conclusive in nature and follows a causal research design. It seeks to establish cause-and-effect relationships between variables such as training practices, skill enhancement and job performance.

3.5 Sampling Method

The research utilizes a multi sampling approach, combining judgmental (purposive) sampling and stratified sampling, to collect relevant and varied data. Judgement sampling ensures that only participants that are directly involved or affected by the training are selected, whereas stratified sampling will ensure that there are participants from different strata (job roles, experience and qualifications) of employees.

3.6 Sample Size

A total of 107 responses were collected from IT professionals across multiple companies. This sample size was determined based on the scope of the study and resource availability.

3.7 Sample Area

The study targeted employees working in the IT sector across organizations that actively implement training programs. The sampling area includes IT firms offering varied training models, thus representing a wide range of organizational practices and employee experiences.

3.8 Sampling Unit

The sampling unit consists of individual employees in the IT industry, specifically those who participate in or benefit from training and development initiatives.

3.9 Sampling Frame

The sampling frame includes professionals from diverse designations managers, supervisors, technical staff and team members who are involved in various training programs.

3.10 Sampling Procedure

The sampling procedure involved the following steps:

- Identifying IT organizations with active training systems.
- Categorizing respondents into strata based on designation, education and experience.
- Selecting participants purposively from within these strata to ensure alignment with research goals.

3.11 Sampling Errors

Minor sampling errors may arise due to the limited number of participating companies, regional concentration of sample selection, or potential non-response from certain employee segments.

3.12 Justification for Sampling Approach

Using both purposive sampling and stratified sampling provides relevant and representative data. Purposive sampling suits the focus of the study. Stratified sampling reflects the heterogeneity of the workforce, producing balanced insight across the demographic variables and levels within the organization.

3.13 Sources and Methods of Data Collection

Primary Data

Data was gathered using structured questionnaires administered to IT professionals. The questionnaire contained both closed-ended (Likert-scale) and open-ended questions, to obtain quantitative and qualitative data with regard to: training frequency, effectiveness, delivery methods and employee satisfaction.

Secondary Data

Sources of secondary data were published research papers, journals, online databases and industry reports related to training practices and human resource development in the IT field.

4. DATA ANALYSIS AND DESIGN

4.1 Tools and Techniques for Data Analysis

Tabular Analysis: The initial data was formatted into tables that allowed for comparative analysis of employee responses based upon their particular model, experience and exposure to training events.

Graphical Representation: Bar charts and pie charts were used to represent visually the main trends in terms of training effectiveness, levels of satisfaction and frequency of training.

Percentage Analysis: Used to show the proportions of respondents who agreed or disagreed with key questions, which simplified data interpretation and emphasized patterns across categories.

4.2 Hypothesis Testing

Hypothesis 1:

There may be a positive connection between using advanced technologies (e.g., Artificial Intelligence and Virtual Reality) in training and levels of engagement of employees.

Analysis:

Survey results supported that employees in experiences involving learning modules utilizing either AI or VR had higher engagement scores (Mean = 4.26 on a 5-point Likert scale) than employees who participated in standard classroom learning (Mean = 3.68). The t-test value ($t = 5.14$, $p < 0.05$) shows the relationship is statistically significant. Respondents mentioned that the use of interactive and immersive content increased both engagement and retention. Interpretation:

In line with the findings from People Matters' SkillScape 2024 report, where over 60% of firms in India shifted to technology-enabled learning, this study supports that digital immersion increases learner

satisfaction and engagement.

Hypothesis 2:

It is possible that there is a strong association of personalized training practices (for example, mentorship and customized assessments) with employee satisfaction.

Analysis:

A correlation coefficient (r = 0.71) was calculated between both mentorship-focused training programs and employee satisfaction scores. Employees who received customized mentorship and goal-oriented development plans for assessments reported satisfaction and improvement levels significantly higher than employees in each cohort without training.

Interpretation:

This is consistent with the 2024 LinkedIn Learning Report, which found 94% of Indian companies designated or were going to designate internal mentorship capability while recognizing the benefits of investing in their employees for limited retention skills training and evaluations. Personalized training not only increases self-efficacy but also connects personalization to performance outcomes relevant to the organization and individuals.

Hypothesis 3:

There may be a significant relationship between self-paced learning methods and improved employee performance.

Analysis:
Regression analysis revealed that flexible learning modes (including asynchronous e-learning and modular courses) accounted for **52% variance in self-reported job performance improvement** ($R^2 = 0.52$, $p < 0.01$). Employees reported self-paced learning led to better concept grasp and practical application.

Interpretation:
This concurs with reports suggesting **71% of companies** adopting work-integrated learning programs (WILPs) to increase knowledge retention and immediate application at work.

4.3. Data Analysis

Both quantitative (Likert-scale questions) and qualitative (open-ended responses) analyses were conducted.

• Demographics-107 IT workers participated, with 48% being categorized as technical, 32% as project managers and 20% as HR/learning specialists.

• Training frequency-62% attended training quarterly, while 23% said bi-yearly and 15% annually.

• Preferred training-33% of respondents prefer self-paced training, 28% prefer blended learning, 22% prefer mentoring, coaching and feedback and the remaining 17% prefer VR/AR simulations.

• Satisfaction- 71% of employees believe that existing programs enable them to be more efficient in their job, whereas 58% would prefer more content relevant to their jobs and updated according to the latest trends or needs.

• Skills focus- all respondents ranked AI literacy as the most important skill for ongoing employability (29%), followed by data analytics (25%) and soft skills (21%); aligning with the national trend of increased demand for these skills.

Qualitative responses highlighted the dual challenge of not having training time available and the content of programs not aligning with up and coming organizational project needs.

5. FINDINGS

1. Adoption of Emerging Technologies: The integration of Artificial Intelligence, Virtual Reality and Augmented Reality fosters greater in-depth engagement and understanding. Organizations using immersive technology report up to a 20% increase in engagement and 15% better performance results.
2. Personalized and Mentor-Led Learning: Personalized learning paths with mentor participation lead to improved job satisfaction and better skill retention.
3. E-learning and Flexibility: Self-paced digital learning is garnering increased favor in hybrid work models, reflected in completion rates and support work-life balance.
4. Awareness of Skills Gap: Regular skill audits are infrequently conducted, with only 20% of organizations reporting to routinely assess employee skill base, leading employees to churn out technical knowledge that becomes irrelevant.
5. Content Relevance and ROI Tracking: Employees wanted more relatable and updated content, suggesting a continual big-picture feedback loop assessment process and that tracking ROI on training initiatives is important.

6. SUGGESTIONS

1. Implement Adaptive Learning Platforms: Leverage AI-based learning management systems (LMS) that adjust the content of courses based on user performance data analytics.
2. Cultivate a Continuous Learning Culture: Support microlearning, certifications and work-integrated programs to reinforce the continuum of learning.
3. Incorporate Emerging Skill Areas: Continually revise content to be in line with the latest IT trends, e.g. AI, Data Analytics, Cybersecurity and IoT.
4. Conduct Periodic Skills Audits: Carry out a quarterly review of organizational skill sets to determine and resolve gaps in competency earlier than possible adverse effects on productivity.
5. Expand Mentorship Ecosystems: Layer digital modules with human mentorship in order to balance automation with empathy and contextual understanding.
6. Measure Impact of Training: Establish clear Key Performance Indicators (KPIs) to measure the ROI of training which may or may not include improvement in productivity, innovation and retention.

7. CONCLUSION

The research concludes that upskilling is a strategic tool for performance sustention, engagement and skills gaps within the IT workforce. The results validate that new learning technologies, especially AI and VR-based systems, facilitate learner engagement and application of knowledge. Additionally, programs that are flexible, personalized and mentor facilitated show a strong impact on satisfaction and long-term retention.

Nevertheless, there are ongoing issues with time and content remains frequently out of date. For training purposes to be sustained, organizations have to look at data and learner-centred approaches to move at the speed of transformation. Aligning training frameworks to the changing skills ecosystems will create empowered employees and provide for a future ready and resilient IT workforce.

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