

Effectiveness of Online Training and E-Learning Platforms in Enhancing Employee Skill Development and Job Performance

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Introduction

The rapid advancement of digital technologies has transformed organizational learning and development practices across industries. Online training and e-learning platforms have emerged as flexible, cost-effective, and scalable solutions for enhancing employee competencies in dynamic business environments. In this context, organizations are increasingly adopting digital learning systems to improve skill development, knowledge retention, and overall job performance.

The research identified the effectiveness of online training programs and e-learning platforms as well as it also studied the role of online training in enhancing employee skills and job performance. The research was conducted in the Hyderabad city of Telangana State. As the city is the home of so many industries so the four prominent industries were selected i.e. IT, Banking and Finance, Retail and Education. By using the purposive sampling method a sample of 328 professionals was selected. The data was collected by using Google docs form and same was analyzed by using SPSS 25.0. The data analysis revealed that majority of companies were using external platforms like Coursera/ Udemy/LinkedIn Learning for online learning and the main focus of these programs was technical or functional training. The industries use to conduct such programs on weekends. It was seen that majority of respondents were having positive perception towards online training and these training programs have significant positive impact on skill development and job performance.

Key Words: Online Training, E-learning platform, Skill Development, Job Performance

Introduction:

The increased pace of development in digital technology and the growing trend of globalization have resulted in a major shift in the way learning and development activities are conducted in organizations. Conventional training sessions that involve physical interactions between trainers and trainees are slowly being replaced by online training solutions and e-learning platforms that are more flexible and

scalable. Organizations are now operating in a highly competitive and dynamic environment where continuous learning has become the need of the hour in order to maintain productivity and stay ahead in the competition.

E-learning platforms give employees the flexibility to access training content at any time and from any location, allowing for self-paced learning. E-learning platforms use multimedia, simulations, and assessment tools that make learning more engaging and effective. Online learning solutions are also more cost-effective and time-saving compared to conventional training solutions that require traveling and disrupt the normal working schedule.

The increasing use of digital learning solutions has also been driven by the trend of remote working and the need for continuous upskilling in the wake of technological innovation. Organizations are increasingly turning to online training programs to enable their employees with technical as well as soft skills, to ensure they are competent and agile. Training is not only beneficial for improving individual performance but also helps in improving overall organizational productivity and efficiency.

Against this backdrop, it is highly relevant to investigate the effectiveness of online training and e-learning solutions in improving employee skill development and performance. It is important to understand the impact of digital learning solutions on competency development and workplace outcomes to enable organizations to develop more effective training programs and derive maximum returns on their learning investments.

Review of Literature:

Ahmed (2025) looked at modern e-learning techniques intended to improve workforce development and training in the digital age. To increase training effectiveness, the study highlighted the strategic integration of learner-centered instructional design, adaptive content delivery, and digital learning technologies. Ahmed emphasized that companies that implement structured e-learning frameworks see increases in employee engagement, knowledge retention, and skill acquisition. In order to maximize the return on investment in training programs, the study also emphasized the significance of matching e-learning initiatives with

organizational goals and performance metrics.

Digital learning platforms greatly increase accessibility, flexibility, and cost-efficiency when compared to traditional training methods, according to Choudhary's (2025) investigation into the efficacy of e-learning in employee training. According to the study, workers view e-learning as a useful instrument for ongoing skill development, especially in industries that rely heavily on technology. It did, however, also point out that technological preparedness and learner motivation are important factors in determining training results, indicating the necessity of supportive organizational infrastructure.

The effect of e-training and development on workers' in-role performance in UAE service sector organizations was evaluated by Bangur and Faiz (2024). Their results showed that e-training programs and employee performance outcomes were positively and statistically significantly correlated. The study showed that effective digital training programs improve service quality, efficiency, and job competencies. To maintain performance gains, the authors suggested routinely assessing the efficacy of e-training and customizing it according to industry-specific needs.

Zhang et al. (2023) investigated how incorporating educational technology into workplace learning through online employee training aids in organizational growth. The study, which was published in *Industrial and Commercial Training*, demonstrated how technology-enabled learning systems enhance organizational competitiveness, employee adaptability, and innovation capability. The authors discovered that collaborative learning tools, analytics-based feedback, and interactive platforms greatly increase the impact of training, which promotes long-term organizational development.

Altwijri and Aldosemani (2022) investigated the perceptions of employees on the effectiveness of e-training in addressing performance evaluation needs. The findings of the study showed that employees view e-training as an effective means of achieving performance goals. The study also highlighted the importance of perceived usefulness, ease of use, and support in training effectiveness. The authors recommended the integration of e-training with performance appraisal to enhance employee motivation.

Janna, Wolor, and Suhud (2021) investigated the significance of e-training, career development, and employee resilience in improving productivity in Indonesian state-owned enterprises. The findings of the study showed that e-training has a positive impact on employee productivity. The study also highlighted the importance of integrating digital training programs with human resource development to enhance productivity.

Kaizer et al. (2020) carried out a thorough review on instructional planning in the corporate e-learning context, published in the *European Journal of Training and Development*. The review highlighted essential instructional design elements such as needs analysis, learner analysis, content organization, and evaluation processes as vital to the successful implementation of e-learning in the corporate world. The review concluded that planning and data-driven instructional approaches are vital to the accomplishment of training objectives in the corporate world.

Mohamad et al. (2020) examined the importance of online training content in improving employee job motivation. The review highlighted that relevant, organized, and engaging training content has a significant impact on employee motivation. The review underscored the importance of content quality and relevance to employees' job roles in determining training satisfaction and motivation. The authors suggested frequent content updates to keep up with changing industry demands.

Lin, Huang, and Zhang (2019) examined the correlation between e-learning and employee job satisfaction, emphasizing the mediating effect of organizational learning culture. The research paper, published in the *International Journal of Human-Computer Interaction*, found that e-learning programs have a significant positive effect on job satisfaction when a strong learning culture is present. The study indicated that organizations promoting knowledge sharing and learning cultures can maximize the benefits of digital learning programs.

Kulkarni (2019), in a doctoral research study at the National College of Ireland, analyzed the effectiveness of classroom training and e-learning methods in the Indian IT industry. The study concluded that classroom training allows for

direct interaction and instant removal of doubts, but e-learning is more flexible and scalable. The research study found that a blended learning strategy, incorporating both classroom training and e-learning, is the most effective way to achieve optimal results in employee performance and training.

Liu et al. (2018), in the edited volume *E-learning, e-education, and online training* published by Springer International Publishing, presented a thorough analysis of the theoretical bases, technological developments, and application aspects of e-learning in educational and corporate settings. The edited volume presented interdisciplinary studies on research issues related to instructional design, adaptive systems, learning analytics, and new digital platforms. It underscored the increasing importance of online training in corporate settings and the importance of combining pedagogy with technological innovation to improve learner engagement and performance outcomes.

Wong and Sixl-Daniell (2017), in the *International Journal of Advanced Corporate Learning*, analyzed the effectiveness of corporate e-learning in the context of global talent management. The authors concluded that corporate e-learning is an important strategy for building global competencies, leadership qualities, and cross-cultural skills. The authors concluded that well-designed corporate e-learning systems are an important factor in talent retention and competitiveness in the workforce, especially in multinational corporations operating in geographically dispersed environments.

Kamal, Aghbari, and Atteia (2016) carried out a case study on the Ministry of Education in the Kingdom of Bahrain to examine the relationship between e-training and employee performance. The results showed that the positive effects of e-training initiatives had a significant influence on employees' knowledge improvement, skill building, and overall work efficiency. The authors stressed the need for management support, technological capabilities, and regular evaluation to ensure the success of digital training programs in the public sector.

Chang (2016), in *The International Journal of Information Management*, examined the adoption and effectiveness of

e-learning in both educational and business settings. The author discussed the importance of technological readiness, cost-effectiveness, and scalability in the successful implementation of e-learning. Chang also mentioned the limitations of resistance to change, lack of digital literacy, and poor instructional design, while stressing the need for strategic planning and stakeholder engagement to ensure the maximum benefits of online learning systems.

Zareie and Navimipour (2016), in *The International Journal of Management Education*, examined the relationship between electronic learning systems and employee commitment. The authors concluded that well-designed e-learning systems have a positive influence on organizational commitment, as they improve job satisfaction, perceived organizational support, and opportunities for professional growth. The authors suggested that user-friendly platforms, relevant content, and supportive organizational culture are critical in strengthening employees' emotional attachment and loyalty to the organization.

Navimipour and Zareie (2015), in the journal *Computers in Human Behavior*, also developed a model for evaluating the effects of e-learning systems on employee satisfaction. The results of their empirical study clearly showed that system quality, information quality, service quality, and perceived usefulness are all significant factors influencing learner satisfaction. The study offered a structured approach to evaluating the effectiveness of e-learning systems and emphasized the mediating role of satisfaction in improving individual and organizational performance.

Lim, Lee, and Nam (2007), in the *International Journal of Information Management*, also confirmed the importance of various factors in e-learning that influence training effectiveness. The study clearly showed that variables such as system quality, instructor characteristics, relevance of content, and learner self-efficacy are all significant predictors of training success. The study concluded that both technological and human aspects need to be properly balanced to improve the effectiveness of corporate e-learning initiatives.

Collins, Buhalis, and Peters (2003), in *Education+ Training*, analyzed the role of small and medium-sized

tourism enterprises (SMTEs) in improving business performance using the Internet and e-learning platforms. The analysis showed that the use of online learning tools enhances management abilities, innovation, and competitiveness in small businesses. The authors highlighted that e-learning platforms provide effective training solutions for small businesses, hence promoting sustainable business growth.

Research Gap:

Although existing literature extensively has either concentrated on sector-specific contexts, conceptual models, or isolated outcome variables like performance or satisfaction, despite the fact that the literature currently in publication covers the design, technological frameworks, and overall efficacy of e-learning systems in improving employee performance, satisfaction, commitment, and organizational growth. Few empirical studies offer a thorough analysis that concurrently evaluates the extent of online training platform use, employees' opinions of quality and accessibility, their effect on the development of technical and soft skills, and the ensuing impact on job performance and overall satisfaction within a single framework. Furthermore, differences between industries and employee profiles are still not fully understood. Therefore, to provide a more thorough understanding of the efficacy of online training and e-learning platforms, an integrated empirical study that holistically evaluates usage patterns, perception, skill enhancement, job performance outcomes, and satisfaction is required.

Objectives

1. To study the extent of usage of online training and e-learning platforms among employees.
2. To analyze employees' perceptions regarding the quality and accessibility of online training programs.
3. To assess the impact of online training on employees' technical and soft skill development.
4. To assess the impact of online training on employees' job performance.
5. To evaluate employee satisfaction with online training and e-learning platforms.

Hypotheses

1. Employees' perceptions regarding the quality and accessibility of online training programs is indifferent with respect to their job level and work experience
2. There is no significant impact of online training on employees' technical and soft skill development.
3. There is no significant impact of online training on employees' job performance.
4. Employees' satisfaction with online training and e-learning platforms is indifferent across the industries.
5. There is no significant impact of employees' perception towards online training program on their satisfaction with online training program

Research Methodology

- **Research Design:** Descriptive research design was used to serve the objectives of research
- **Sampling:** The population of the study consists of all the professionals working in the different industries of Hyderabad, Telangana. Four prominent industries were selected i.e. IT, Banking and Finance, Retail and Education. By using the purposive sampling method a sample of 328 professionals was selected.
- **Data Collection Tool:** Data was collected by using the Google docs form. The questionnaire was divided into following sub-sections:-
 - Job profile of respondents
 - Extent and Usage of Online Training Program
 - Employees' Perceptions of Quality and Accessibility of Online Training Programs
 - Impact of online training on employees' technical

and soft skill development

- Impact of online training on employees' job performance
- Employees' Satisfaction with online training program
- **Data Analysis Tool:** The data has been analyzed in SPSS 25.0. For interpretation percentage analysis, mean, one sample t-test, ANOVA and chi-square test has been used.

Analysis of Data

• Job Profile of Respondents

The job profile of selected sample respondents is shown in table 1

- ❖ **Industry of Respondents:** The research has considered four prominent industries of Hyderabad. In the sample majority of respondents were from IT industry (45.12%) followed by education (21.65%), retail (17.99%) and banking & finance (15.24%).
- ❖ **Job level of Respondents:** In the sample 21.65% respondents were working at entry level, 39.33% employees were working at middle level, 27.13% respondents were working at senior level and 11.89% respondents were working at top management level.
- ❖ **Work Experience of Respondents:** As per results 26.52% respondents were having the work experience of less than 1 year, 21.34% respondents were having the job experience of 1 to 5 years, 34.15% respondents were having the experience of 6 to 10 years and 17.99% respondents were having the job experience of more than 10 years.

Table 1: Job Profile of Respondents

Industry	N	Percentage
IT	148	45.12
Banking and Finance	50	15.24
Retail	59	17.99
Education	71	21.65
Total	328	100

Job Level	N	Percentage
Entry	71	21.65
Middle	129	39.33
Senior	89	27.13
Top Management	39	11.89
Total	328	100
Work Experience	N	Percentage
Less than 1 Year	87	26.52
1 to 5 Years	70	21.34
6 to 10 Years	112	34.15
More than 10 Years	59	17.99
Total	328	100

• Extent and Usage of Online training programs

Table 2 is depicting the extent and usage of online training program by respondents.

- **Frequency of organizing online training program:** More than half of the professionals (53.05%) indicated that their organizations occasionally organize online training programs while 22.87% respondents said that their companies organize only those online training programs which are mandatory to organize.
- **Frequency of participation in online training program:** It was found that majority of respondents (36.89%) attend online training programs 2-3 times in year while 28.66% respondents quarterly attend such programs.
- **Type of online programs conducted:** It can be seen that majorly companies organize technical/functional skill trainings (66.77%) and compliance and policy related trainings (54.57%).
- **Platform used for online training program:** It can be observed that most popular platforms for the online training programs are external platforms

(65.24%) like Coursera/Udemy/LinkedIn Learning. A significant number of companies also use mobile based corporate learning apps (46.34%) and video conferencing tools (42.38%) like MS Teams, Zoom, Google Meet. 35.67% respondents indicated that their companies use organization's internal Learning Management System (LMS) for online training

- **Timings of online training program:** It was found that majority of companies (35.67%) organize online training programs during weekends so that routine jobs of companies can run smoothly. 1/4th of the respondents (25.91%) indicated the organization of such programs during work hours and 22.56% respondents said that these programs are conducted after working hours (22.56%)
- **Respondents' participation level in online training programs:** Majority of respondents (45.43%) said that they remain moderately active in online training programs while 26.83% respondents said that they rarely participate in such programs.

Table 2: Extent and Usage of Online training programs

How frequently organization provide online training or e-learning programs for employees?		
Response	N	Percentage
Yes, regularly	38	11.59
Yes, occasionally	174	53.05
Yes, only mandatory programs	75	22.87
Rarely	41	12.50
Total	328	100

How frequently do you participate in online training programs organized by your employer?		
Response	N	Percentage
Monthly	61	18.60
Quarterly	94	28.66
2-3 times in a year	121	36.89
Rarely	52	15.85
Total	328	100
What type of online training program(s) are mainly organized by your organization?		
Response	N	Percentage
Technical/functional skill training	219	66.77
Soft skill and behavioral training	124	37.80
Compliance and policy-related training	179	54.57
Leadership and managerial development programs	101	30.79
Health, safety, and well-being training	79	24.09
Which platform(s) are used by your organization to deliver online training programs?		
Response	N	Percentage
Organization's internal Learning Management System (LMS)	117	35.67
External platforms provided by the employer (Coursera/Udemy/LinkedIn Learning)	214	65.24
Video conferencing tools (MS Teams, Zoom, Google Meet)	139	42.38
Mobile-based corporate learning apps	152	46.34
When are employer-organized online training programs usually conducted?		
Response	N	Percentage
During working hours	85	25.91
After working hours	74	22.56
Weekends	117	35.67
Flexible / Self-paced modules	52	15.85
Total	328	100
How would you describe your overall participation in employer-organized online training programs?		
Response	N	Percentage
Very active	32	9.76
Moderately active	149	45.43
Rarely participate	88	26.83
Never participate	59	17.99
Total	328	100

Employees' Perception of Quality and Accessibility of Online Training Programs

Table 3 is showing the employees' perception regarding quality and accessibility of online training programs. According to respondents the contents of the online training programs are relevant to job role and responsibilities (Mean=4.12), the duration and pace of online training programs are appropriate for effective learning (Mean=4.02), the online training provided by organizations

were of high overall quality (Mean=3.74) and the trainers effectively delivered content through online platforms (Mean=3.69). Employees indicated that learning materials were well structured and easy to understand (Mean=3.55), online training platforms were used friendly (Mean=3.51), training programs provided adequate opportunities for interaction and clarification of doubts (Mean=3.42) and they were easily able to access online training programs anytime and from any location (Mean=3.41).

Table 3: Employees' Perception of Quality and Accessibility of Online Training Programs

Employees' Perception of Quality and Accessibility of Online Training Programs	Mean	S.D.	C.V.	Agreement Level
The online training programs provided by my organization are of high overall quality.	3.74	0.98	0.26	Agree
The learning materials (videos, readings, assessments) are well -structured and easy to understand.	3.55	1.05	0.30	Agree
The content of the online training programs is relevant to my job role and responsibilities.	4.12	1.19	0.29	Agree
I can easily access online training programs anytime and from any location.	3.41	0.87	0.26	Agree
The duration and pace of online training programs are appropriate for effective learning.	4.02	0.74	0.18	Agree
The trainers or facilitators effectively deliver content through online platforms.	3.69	1.11	0.30	Agree
The online training platform used by my organization is user -friendly and easy to navigate.	3.51	0.65	0.19	Agree
The online training programs provide adequate opportunities for interaction and clarification of doubts.	3.42	0.82	0.24	Agree

Overall it was observed that 82.62% employees have positive perception about quality and accessibility of online training programs.

Table 4: Employees' Overall Perception of Quality and Accessibility of Online Training Programs

Overall Perception	N	Percentage
Negative	57	17.38
Positive	271	82.62
Total	328	100

To check the difference in employees' perception with respect to their job level and work experience following hypothesis has been taken:-

H₀1: Employees' perceptions regarding the quality and accessibility of online training programs is indifferent with respect to their job level and work experience.

H_a1: Employees' perceptions regarding the quality and accessibility of online training programs is significantly

different with respect to their job level and work experience.

To test this hypothesis ANOVA test was performed and results are depicted in table 5 and 6. Both the values of F-ratio are significant which leads to the rejection of hypothesis so it can be concluded that employees' perceptions regarding the quality and accessibility of online training programs is significantly different with respect to their job level and work experience.

Table 5: ANOVA result to measure difference in employees' perception regarding online training program with respect to their job level

Source of Variation	Sum of Squares	Degree of Freedom	Mean Sum of Squares	F-Ratio	p-value	Result
Between Samples	8145.29	3	2715.097	9.192	0.000	Significant
Within Samples	95698.36	324	295.365			
Total	103843.65	327				

Level of Significance=5%

Table 6: ANOVA result to measure difference in employees' perception regarding online training program with respect to their work experience

Source of Variation	Sum of Squares	Degree of Freedom	Mean Sum of Squares	F-Ratio	p-value	Result
Between Samples	6512.98	3	2170.993	7.934	0.000	Significant
Within Samples	88659.63	324	273.641			
Total	95172.61	327				

Level of Significance=5%

Impact of online training on employees' technical and soft skill development

Table 7 is highlighting the respondents' agreement with the statements related to impact of online training on employees' technical and soft skill development. Employees said that online training programs and e-learning platforms have enhanced their technical skills

(Mean=4.05) and problem solving / analytical skills (Mean=3.87) as per the industry requirement (Mean=4.19). Further it was observed that online training has contributed to the development of employees' soft skills (Mean=3.71) and interactive elements have improved their learning experience (Mean=3.62).

Table 7: Impact of online training on employees' technical and soft skill development

Impact of online training on employees' technical and soft skill development	Mean	S.D.	C.V.	Agreement Level
Online training programs have helped me enhance my technical skills.	4.05	1.05	0.26	Agree
Interactive elements (videos, quizzes, simulations) improve my learning experience.	3.62	0.92	0.25	Agree
E-learning platforms have improved my problem-solving and analytical abilities.	3.87	1.07	0.28	Agree
Online training helps me keep my skills updated with industry requirements.	4.19	0.89	0.21	Agree
Online training has contributed to the development of my soft skills (communication, teamwork, leadership).	3.71	0.71	0.19	Agree

More than 90% of the respondents (91.46%) indicated the positive impact of online training on employees' technical and soft skill development.

Table 8: Overall Impact of online training on employees' technical and soft skill development

Overall Impact	N	Percentage
Low	28	8.54
High	300	91.46
Total	328	100

To check the significance of impact of online training on employees' technical and soft skill development following hypothesis has been taken:-

H02: There is no significant impact of online training on employees' technical and soft skill development.

Ha2: There is a significant impact of online training on employees' technical and soft skill development.

To test this hypothesis one sample t-test was applied and results are shown in table 9. At 5% level of significance the value of t-statistic is significant, and calculated mean (19.15) is more than the tabulated mean (15) so it can be inferred that there is a significant impact of online training on employees' technical and soft skill development.

Table 9: One sample t-test result to measure Impact of online training on employees' technical and soft skill development

Variable	Observed Mean	Test Value = 15			Result
		t-value	degree of freedom	p-value	
Impact of online training on employees' technical and soft skill development	19.15	16.19	327	0.000	Significant

Level of Significance=5%

Impact of online training on employees' job performance

Table 12 is depicting the respondents' opinion about impact of online training on employees' job performance. Respondents indicated that online training programs have improved their ability to meet job targets (Mean=3.98),

work productivity (Mean=3.82) and overall job performance (Mean=3.75). Further they said that e-learning programs have enhanced the quality of work output (Mean=3.62) and they were able to apply the knowledge gained from e-learning to their daily work tasks (Mean=3.51).

Table 10: Impact of online training on employees' job performance

Impact of online training on employees' job performance	Mean	S.D.	C.V.	Agreement Level
Online training has improved my overall job performance.	3.75	1.04	0.28	Agree
Online training has increased my productivity at work.	3.82	0.97	0.25	Agree
I am able to apply the knowledge gained from e-learning to my daily work tasks.	3.51	1.08	0.31	Agree
Online training has improved my ability to meet job targets and deadlines.	3.98	0.74	0.19	Agree
E-learning programs have enhanced the quality of my work output.	3.62	0.69	0.19	Agree

Overall 87.50% respondents indicated the positive impact of online training programs on their job performance.

Table 11: Overall Impact of online training on employees' job performance

Overall Impact	N	Percentage
Low	41	12.50
High	287	87.50
Total	328	100

To check the significance of impact of online training on employees' job performance following hypothesis has been taken:-

H₀3: There is no significant impact of online training on employees' job performance.

H_a3: There is a significant impact of online training on employees' job performance.

To test this hypothesis one sample t-test was applied and results are shown in table 12. At 5% level of significance the value of t-statistic is significant, and calculated value of mean (18.75) is higher than the tabulated mean (15) so it can be concluded that there is a significant impact of online training on employees' job performance.

Table 12: One sample t-test result to measure Impact of online training on employees' job performance

Variable	Observed Mean	Test Value = 15			Result
		t-value	degree of freedom	p-value	
Impact of online training on employees' job performance	18.75	15.02	327	0.000	Significant

Level of Significance=5%

Employees' satisfaction with online training and e-learning platforms

Employees' satisfaction with the various parameters of online training and e-learning platforms is depicted in table 13. According to results employees were highly satisfied with flexibility of learning (Mean=4.01, Rank=1), user friendliness of platform (Mean=3.87, Rank=2), ease of access (Mean=3.76, Rank=3) and effectiveness of trainer

(Mean=3.72, Rank=4) of online trainings. The employees indicated satisfaction with content quality (Mean=3.69, Rank=5), training material (Mean=3.62, Rank=6), and support services (Mean=3.47, Rank=7). The employees' satisfaction was comparatively low with learning pace and duration (Mean=3.42, Rank=8) and assessment and feedback mechanism (Mean=3.29, Rank=9).

Table 13: Employees' satisfaction with online training and e-learning platforms

Factors	Mean	S.D.	C.V.	Rank
Content Quality	3.69	0.74	0.20	5
User-Friendliness of Platform	3.87	0.89	0.23	2
Flexibility of Learning	4.01	1.01	0.25	1
Trainer/Instructor Effectiveness	3.72	0.94	0.25	4
Learning Pace and Duration	3.42	0.91	0.27	8
Assessment and Feedback Mechanism	3.29	0.62	0.19	9
Support Services	3.47	0.88	0.25	7
Training Material	3.62	1.05	0.29	6
Ease of Access	3.76	0.94	0.25	3

Overall 84.15% respondents indicated satisfaction with online trainings while 15.85% respondents were not satisfied with online trainings and e-learning platforms.

Table 14: Overall Employees' satisfaction with online training and e-learning platforms

Overall Satisfaction	N	Percentage
Low	52	15.85
High	276	84.15
Total	328	100

To check the significance of difference in employee satisfaction with online trainings with respect to their industry following hypothesis has been taken:-

H₀4: Employees' satisfaction with online training and e-learning platforms is indifferent across the industries.

H_a4: Employees' satisfaction with online training and e-learning platforms is significantly different across the industries.

To test this hypothesis ANOVA test was applied and result is shown in table 15. At 5% level of significance the value of F-statistic is significant, which leads to the rejection of hypothesis so it can be concluded that employees' satisfaction with online training and e-learning platforms is significantly different across the industries

Table 15: ANOVA test result to measure difference in employee satisfaction with online training and e-learning platforms with respect to industry

Source of Variation	Sum of Squares	Degree of Freedom	Mean Sum of Squares	F-Ratio	p-value	Result
Between Samples	7858.63	3	2619.543	11.362	0.000	Significant
Within Samples	74698.36	324	230.550			
Total	82556.99	327				

Level of Significance=5%

To check the significance of impact of employees' perception towards online training program on their satisfaction with online training program following hypothesis has been taken:-

H₀5: There is no significant impact of employees' perception towards online training program on their satisfaction with online training program.

H_a5: There is a significant impact of employees' perception

towards online training program on their satisfaction with online training program.

To test this hypothesis one chi-square test was applied and result is shown in table 16. At 5% level of significance the value of chi-statistic is significant, which leads to the rejection of hypothesis so it can be concluded that there is a significant impact of employees' perception towards online training program on their satisfaction with online training program.

Table 16: Chi-Square test result to measure impact of employees' perception towards online training program on their satisfaction with online training program

Employees' Perception	Employees' Satisfaction			Chi - Statistic	p-value	Result
	Low	High	Total			
Negative	41	16	57	162.62	0.000	Significant
Positive	11	260	271			
Total	52	276	328			

Level of Significance=5%

Conclusion

1. The data analysis revealed that majority of companies were using external platforms like Coursera/Udemy/LinkedIn Learning for online learning and the main focus of these programs was technical or functional training. The industries use to conduct such programs on weekends.
2. Employees used to attend 2-3 online training programs

in a year and majority of them remain moderately active during training programs.

3. According to respondents the contents of the online training programs are relevant to job role and responsibilities, the duration and pace of online training programs are appropriate for effective learning, the online training provided by organizations were of high overall quality and the trainers effectively delivered content through online platforms.

4. Overall it was observed that 82.62% employees have positive perception about quality and accessibility of online training programs, however their perception differs with respect to their job level and work experience.
5. Employees said that online training programs and e-learning platforms have enhanced their technical skills and problem solving / analytical skills as per the industry requirement. More than 90% of the respondents (91.46%) indicated the positive impact of online training on employees' technical and soft skill development.
6. Respondents indicated that online training programs have improved their ability to meet job targets, work productivity and overall job performance. Overall 87.50% respondents indicated the positive impact of online training programs on their job performance.
7. According to results employees were highly satisfied with flexibility of learning, user friendliness of platform, ease of access and effectiveness of trainer of online trainings. The employees indicated satisfaction with content quality, training material and support services. Overall 84.15% respondents indicated satisfaction with online trainings while 15.85% respondents were not satisfied with online trainings and e-learning platforms.
8. It was concluded that employees' satisfaction with online training and e-learning platforms is significantly different across the industries and there is a significant impact of employees' perception towards online training program on their satisfaction with online training program.

Implications of the study:

The results of this study have significant implications for managers in organizations that are investing in digital learning initiatives. Since most organizations are using external platforms such as Coursera, Udemy, and LinkedIn Learning to deliver training that is more technical and functional in nature, organizations should align the choice of platforms with their own competency frameworks. Since employees are moderately engaged in 2-3 programs per

year, and since the perceptions of relevance, pace, and trainer delivery are high, it can be concluded that the quality of programs is high. Organizations should therefore work on improving interactivity and engagement tools such as live sessions, assessments, and applications to improve employee engagement from moderate to high levels. Also, the differences in perceptions between job levels and work experience suggest that learning paths should be customized for managers, mid-level, and entry-level employees.

The findings also offer conclusive proof of the positive effect of online training on technical skills, problem-solving capacity, productivity, and overall performance, as over 85% of the respondents agreed to its effectiveness. This is a clear indication of the strategic use of online learning platforms as performance-enabling tools rather than just knowledge-sharing platforms. Organizations should thus align the outcomes of online training with performance management processes to reap optimal benefits from training investments. The differences in satisfaction levels among industries and the significant relationship between employee perception and satisfaction, however, indicate the need for continuous feedback processes and industry-wise customization. Organizations can thus further improve the effectiveness and inclusivity of their online training environments by improving support services, engagement, and addressing the concerns of the 15.85% dissatisfied employees.

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