

Digital Learning Practices and Their Influence on Employees' Job Performance in Manufacturing Industry at Chennai

Devanathan. D^{1*} & Dr. Raja Manickam. E²

¹Ph.D Research scholar Department of Business Administration, Annamalai University.

E-mail ID nicedevanathan@gmail.com

²Assistant Professor Research Supervisor, Department of Business Administration, Annamalai University.

E-mail ID jairaja1975@gmail.com

***Corresponding Author:** Devanathan. D

¹Ph.D Research scholar Department of Business Administration, Annamalai University. E-mail ID

nicedevanathan@gmail.com

ABSTRACT

In the rapidly evolving manufacturing industry, digital learning practices have become an essential component for enhancing employees' skills and performance. With increasing adoption of digital technologies, organizations are focusing on providing accessible and flexible learning opportunities to improve workforce efficiency. This study examines the influence of digital learning practices on employees' job performance in the manufacturing industry at Chennai. The study considers access to digital learning resources and self-paced learning ability as independent variables, and quality of work and time management as dependent variables.

Primary data were collected from 55 employees working in the manufacturing sector using a structured questionnaire based on a five-point Likert scale. Descriptive statistics, Pearson correlation analysis, and regression analysis were employed to examine employees' opinions and to analyze the relationship between digital learning practices and job performance variables. The results reveal that access to digital learning resources and self-paced learning ability have a significant positive influence on employees' quality of work and time management.

The findings indicate that employees who have better access to digital learning materials and the ability to learn at their own pace demonstrate improved work quality and effective time management. The study highlights the importance of providing adequate digital learning resources and promoting self-directed learning among employees to enhance their performance. The study provides valuable insights for manufacturing organizations to design effective digital learning strategies that improve employees' work efficiency and overall organizational performance.

Keywords: Digital Learning Practices, Self-Paced Learning, Work Quality, Time Management, Manufacturing Industry, Chennai

1. Introduction

The manufacturing industry is undergoing rapid transformation due to technological advancements and increased digitalization. In this dynamic environment, organizations are placing greater emphasis on improving employees' skills and efficiency to remain competitive. Digital learning practices have emerged as an effective approach to enhance employee development by providing flexible, accessible, and continuous learning opportunities. Unlike traditional training methods, digital learning enables employees to access learning resources anytime and anywhere, thereby improving their ability to perform work-related tasks efficiently.

Among various digital learning practices, access to digital learning resources and self-paced learning ability play a significant role in employee development. Access to digital learning resources refers to the availability and ease of obtaining online learning materials, training modules, and knowledge platforms. It enables employees to continuously update their skills and stay informed about new technologies and work processes. Self-paced learning ability allows employees to learn according to their own speed and convenience, enhancing their understanding and retention of knowledge. Employees' job performance is a critical factor that determines organizational success. In this study, job performance is measured through quality of work and time management, which are essential components of effective job performance in the manufacturing sector. Quality of work refers to the accuracy, consistency, and standard of output produced by employees, while time management reflects the ability to complete tasks efficiently within the given time frame.

Digital learning practices contribute significantly to improving employees' performance by enhancing their knowledge, skills, and efficiency. Employees who have better access to digital learning resources and possess strong self-paced learning abilities are more likely to produce high-quality work and manage their time effectively. In the manufacturing industry, where precision, efficiency, and timely completion of tasks are crucial, digital learning plays a vital role in improving overall performance. Despite the growing importance of digital learning, there is limited empirical evidence examining its direct influence on quality of work and time management among employees in the manufacturing sector.

Most studies have focused on general job performance or productivity, without specifically analyzing these dimensions. Therefore, this study aims to examine the influence of access to digital learning resources and self-paced learning ability on employees' quality of work and time management in the manufacturing industry at Chennai.

2. Review of Literature

Shang, D. (2025) highlights that digital learning engagement significantly improves employees' work outcomes, particularly in terms of quality and efficiency. The study emphasizes that self-directed learning and access to digital resources enhance employees' ability to manage tasks effectively and produce better work results.

Torres Serna, H. (2025) examined the role of digital transformation in workplace performance and found that digital learning practices improve employees' work quality and time management by enhancing their adaptability and skill development.

Wang, G. (2024) identified that access to digital learning resources has a strong positive impact on employees' performance. The study reveals that employees with better access to digital tools and resources demonstrate improved efficiency and better work quality.

Nuraini, A. (2024) found that digital learning behavior positively influences employees' time management and work efficiency. The study concludes that employees who actively engage in digital learning are more capable of managing their time and completing tasks effectively.

Adhiati Cheesya Siska (2024) states that self-paced learning enhances employees' understanding and knowledge retention, which leads to improved quality of work and better performance outcomes.

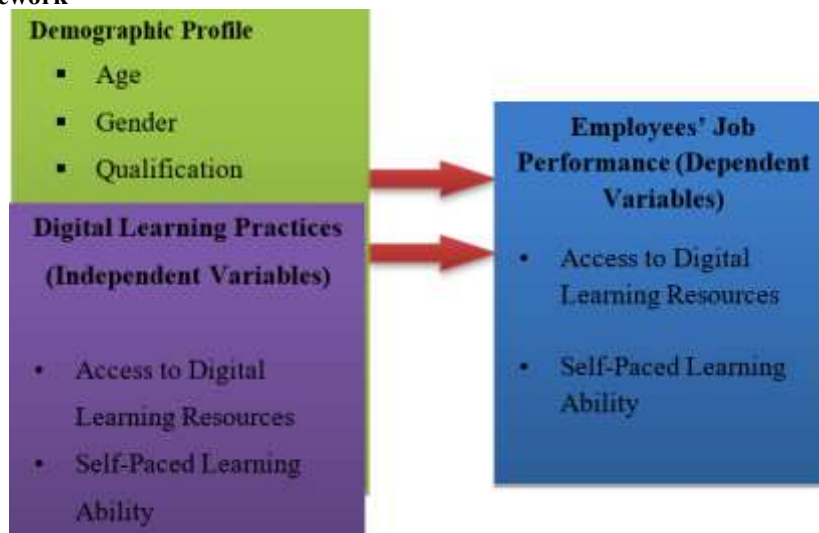
Wilson, J. (2022) explains that flexible digital learning systems improve employees' ability to manage their time effectively and perform tasks efficiently. The study highlights that self-paced learning plays a crucial role in improving productivity and work quality.

Brown, T. (2020) emphasizes that digital learning platforms improve accessibility and support continuous learning, which contributes to enhanced work quality and efficient time management among employees.

3. Background of the Study

In the modern manufacturing industry, employees are required to continuously upgrade their skills to meet technological advancements and changing work requirements. Digital learning practices have become essential tools for employee development, enabling organizations to provide flexible and accessible training solutions. Access to digital learning resources allows employees to obtain relevant knowledge, training materials, and technical information at any time. This improves their ability to perform tasks accurately and efficiently. Similarly, self-paced learning enables employees to learn according to their individual speed and understanding, which enhances knowledge retention and skill development. In the manufacturing sector, maintaining high quality of work and effective time management are critical for achieving organizational goals. Employees who have access to digital learning resources and the ability to learn independently are more likely to produce high-quality output and manage their tasks efficiently. Despite the increasing adoption of digital learning practices, limited studies have examined their influence on specific job performance dimensions such as quality of work and time management, particularly in the manufacturing industry at Chennai. Therefore, the present study focuses on analyzing the relationship between digital learning practices and employees' job performance, providing insights into improving work quality and time efficiency.

4. Conceptual framework



Framework Explanation

The model suggests that digital learning practices play a crucial role in enhancing employees' performance in the manufacturing sector. At the same time, demographic characteristics contribute to variations in employees' work quality and time management.

Thus, the framework highlights that both digital learning practices and demographic factors influence employees' job performance, providing a comprehensive understanding of performance improvement in the manufacturing industry.

5. Objectives of the Study

The present study has undertaken the following objectives:

- To assess the employees' opinion towards digital learning practices such as access to digital learning resources and self-paced learning ability in the manufacturing industry at Chennai.
- To analyze the relationship between digital learning practices (access to digital learning resources and self-paced learning ability) and employees' job performance variables such as quality of work and time management.
- To examine the influence of digital learning practices on employees' job performance in terms of improving work quality and time management.

6. Hypotheses of the Study

H₁: Employees' opinion towards digital learning practices and job performance is significantly varied among the sample in the manufacturing industry at Chennai.

H₂: There is a significant relationship between access to digital learning resources and self paced learning ability on employees' job performance in the manufacturing industry at Chennai.

H₃: There is a significant influence of digital learning resources and self paced learning ability on employees job performance in the manufacturing industry at Chennai.

7. Research Methodology

The present study adopts a systematic research methodology to examine the influence of digital learning practices on employees' job performance in the manufacturing industry at Chennai.

Research Design

The study is based on a descriptive research design, which is used to describe employees' opinions and to analyze the relationship between digital learning practices and job performance variables. This design helps in understanding the impact of independent variables on dependent variables without manipulating the study environment.

Source of Data

The study is based on both primary and secondary data:

- Primary Data: Collected directly from employees working in the manufacturing sector through a structured questionnaire.
- Secondary Data: Collected from journals, books, research articles, and online sources to support the theoretical framework and literature review.

Population of the Study

The population of the study consists of employees working in various manufacturing industries located in Chennai, representing different departments and levels within the organization.

Sample Size

A total of 55 respondents were selected for the study. The sample size is considered appropriate for conducting statistical analysis and drawing meaningful conclusions.

Sampling Technique

The study uses a convenience sampling method, which is a non-probability sampling technique. This method was chosen due to ease of access to respondents and time constraints.

Statistical Tools

- ✓ Descriptive Statistics
- ✓ Pearson Correlation Analysis
- ✓ Regression Analysis

8. Result and Discussion

Table 1: Employees’ Opinion towards Digital Learning Practices and Job Performance Variables

Study Variables	Mean	SD	t-value	p-value
Access to Digital Learning Resources	4.06	0.64	17.96	0.001
Self-Paced Learning Ability	4.11	0.59		
Quality of Work	4.08	0.61		
Time Management	4.05	0.63		

H₁: states that there is a significant variation in employees opinion towards digital learning practices and employees’ job performance.

The above table presents employees’ opinions towards digital learning practices and job performance variables in the manufacturing industry at Chennai. The mean values range from 4.05 to 4.11, indicating a high level of agreement among employees regarding the importance of digital learning practices and their influence on job performance.

Among the independent variables, self-paced learning ability (4.11) records the highest mean value, followed by access to digital learning resources (4.06). This indicates that employees prefer learning at their own pace and believe that access to digital resources supports their learning process.

With respect to job performance variables, quality of work (4.08) shows a slightly higher mean value than time management (4.05), indicating that digital learning practices contribute more towards improving the standard and accuracy of work.

The calculated t-value (17.96) is significant at the 1% level (p = 0.001), which indicates that employees’ opinions towards digital learning practices and job performance are statistically significant.

Table 2: Relationship between Digital Learning Practices and Job Performance

Digital Learning Practices	Job Performance	
	r-value	p-value
Access to Digital Learning Resources	0.668	0.001
Self-Paced Learning Ability	0.712	0.001

H₂: states that there is a significant relationship between digital learning practices and employees’ job performance.

Table 2 shows that access to digital learning resources and self-paced learning ability have a positive and significant relationship with employees’ job performance. The correlation values range from 0.668 to 0.712, and all p-values are significant at the 0.001 level.

This indicates that employees who have better access to digital learning materials and those who are capable of learning at their own pace tend to produce higher quality work and manage their time more effectively. The strong positive correlation suggests that digital learning practices play a crucial role in enhancing employees’ performance in the manufacturing industry.

Table 3: Influence of Digital Learning Practices on Job Performance

R	R Square	Adjusted R Square	F-Value	P-Value
0.80	0.64	0.62	27.96	0.000*

Regression Coefficients

Predictors	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t-value	P-value
(Constant)	2.984	0.118	–	25.28	0.000*
Access to Digital Learning Resources	0.362	0.081	0.329	4.46	0.000*
Self-Paced Learning Ability	0.418	0.075	0.372	5.57	0.000*

The above table presents the regression analysis showing the influence of digital learning practices on employees’ job performance. The value of R (0.80) indicates a strong positive relationship between digital learning practices and job performance. The R Square value (0.64) shows that 64% of the variation in employees’ job performance is explained by digital learning practices.

The F-value (27.96) is significant at the 1% level (p = 0.000), indicating that the regression model is statistically significant.

From the regression coefficients, both access to digital learning resources (β = 0.329, p = 0.000) and self-paced learning ability (β = 0.372, p = 0.000) have a positive and significant influence on employees’ job performance. Among the two variables, self-paced learning ability has a stronger influence compared to access to digital learning resources.

This indicates that employees who learn at their own pace and effectively utilize digital resources tend to produce better quality work and manage their time efficiently.

Hence, it is concluded that digital learning practices significantly influence employees' job performance, and the model is statistically valid.

9. Findings of the Study

- The descriptive analysis reveals that employees have a high level of agreement towards digital learning practices, as the mean values for access to digital learning resources and self-paced learning ability are above 4. This indicates that employees actively engage in digital learning in the manufacturing industry.
- Among the independent variables, self-paced learning ability records the highest mean value, indicating that employees prefer learning at their own pace and find it more effective for improving their skills and knowledge.
- The findings also indicate that employees demonstrate a high level of job performance, with quality of work having a slightly higher mean value compared to time management. This shows that digital learning contributes significantly to improving work standards and accuracy.
- The correlation analysis reveals that there is a strong positive relationship between digital learning practices and employees' job performance. Both access to digital learning resources and self-paced learning ability are significantly related to quality of work and time management.
- The correlation values indicate that self-paced learning ability has a stronger relationship with job performance variables compared to access to digital learning resources. This highlights the importance of independent learning in improving employee performance.
- The regression analysis confirms that digital learning practices have a significant influence on employees' job performance, indicating that digital learning is an important predictor of performance outcomes.
- The R square value indicates that a substantial proportion of variation in job performance is explained by digital learning practices, demonstrating the effectiveness of digital learning in improving employee performance.
- The regression coefficients show that both independent variables positively influence job performance, meaning that increased access to digital learning resources and improved self-learning ability lead to better work outcomes.
- Among the predictors, self-paced learning ability has a greater impact on job performance compared to access to digital learning resources, as reflected in its higher beta value. This suggests that employees' ability to learn independently plays a key role in enhancing performance.
- Overall, the study concludes that digital learning practices significantly improve quality of work and time management, thereby enhancing employees' overall job performance in the manufacturing industry.

10. Suggestions of the Study

- Organizations should ensure easy and continuous access to digital learning resources such as online materials, videos, manuals, and training platforms to support employees' learning and skill development.
- Companies should improve the availability and quality of digital learning content, ensuring that it is relevant, updated, and aligned with current industry requirements.
- Management should encourage self-paced learning among employees by providing flexible learning opportunities that allow employees to learn according to their convenience and individual learning speed.
- Organizations should develop structured digital learning systems that guide employees on how to effectively utilize learning resources and improve their knowledge.
- It is important to provide training and awareness programs to help employees understand how to use digital learning platforms efficiently.
- Companies should introduce time management training programs integrated with digital learning to help employees plan and execute their tasks more effectively.
- Organizations should promote a learning culture by motivating employees to engage in continuous learning through incentives, recognition, and career development opportunities.
- Special attention should be given to employees who have limited digital skills, by providing basic training to improve their ability to use digital learning tools.
- Employers should regularly evaluate the effectiveness of digital learning programs and collect feedback from employees to improve learning systems.
- Organizations should integrate digital learning practices with performance appraisal systems, linking learning outcomes with improvements in work quality and time management.

11. Conclusion

The present study examines the influence of digital learning practices on employees' job performance in the manufacturing industry at Chennai, with a specific focus on access to digital learning resources and self-paced learning ability. The

findings of the study clearly indicate that digital learning practices play a significant role in enhancing employees' performance, particularly in terms of quality of work and time management.

The descriptive analysis reveals that employees have a positive perception towards digital learning practices, indicating their acceptance and active involvement in digital learning activities. The correlation analysis confirms that there is a strong and positive relationship between digital learning practices and job performance variables. Furthermore, the regression analysis establishes that digital learning practices significantly influence employees' job performance, with self-paced learning ability having a comparatively higher impact.

The study highlights that employees who have better access to digital learning resources and the ability to learn independently are more likely to produce high-quality work and manage their time effectively. This demonstrates that digital learning not only improves employees' knowledge and skills but also enhances their efficiency and work output.

In conclusion, digital learning practices have become an essential component of employee development in the manufacturing sector. Organizations that provide effective digital learning resources and encourage self-paced learning can achieve improved work quality, better time management, and enhanced overall performance. Therefore, it is essential for organizations to invest in digital learning systems and promote a continuous learning culture to meet the evolving demands of the industry and ensure sustainable organizational growth.

References

1. Brown, T. (2020). The impact of digital learning on employee performance. *International Journal of Scientific and Engineering Management*, 5(9), 45–52.
2. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
3. Deming, W. E. (1986). *Out of the crisis*. MIT Press.
4. Knowles, M. S. (1984). *The adult learner: A neglected species* (3rd ed.). Gulf Publishing.
5. Macan, T. H. (1994). Time management: Test of a process model. *Journal of Applied Psychology*, 79(3), 381–391.
6. Noe, R. A. (2017). *Employee training and development* (7th ed.). McGraw-Hill Education.
7. Nuraini, A. (2024). Digital learning behavior and employee performance outcomes. *International Journal of Organizational Analysis*, 32(2), 210–225.
8. Rosenberg, M. J. (2001). *E-learning: Strategies for delivering knowledge in the digital age*. McGraw-Hill.
9. Shang, D. (2025). Digital learning engagement and work efficiency outcomes. *Computers in Human Behavior Reports*, 10, 100–112.
10. Wang, G. (2024). Digital learning resources and workforce performance: Evidence from manufacturing sector. *SAGE Open*, 14(2), 1–12.
11. Wilson, J. (2022). Digital learning tools and employee performance: A study on workplace learning. *Journal of Workplace Learning*, 34(6), 421–435.