International Journal of Scientific Research in Engineering and Management (IJSREM)
Conference - Volume 10 ICMEX -2026 SJIF Rating: 8.659 ISSN: 2582-3930

A STUDY ON AI DRIVEN TRAINING AND DEVELOPMENT PRACTICE

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ABSTRACT

Artificial Intelligence (AI) has significantly transformed training and development practices in modern organizations. This study examines the effectiveness of AI-driven training systems in enhancing employee performance, engagement, and organizational productivity. The research is based on primary data collected from 150 respondents using a structured questionnaire. Statistical tools such as percentage analysis, correlation, regression, and ANOVA were applied to analyze the data. The findings reveal that the majority of employees are satisfied with AI-based training programs and actively engage in AI-enabled learning activities. The results also indicate a statistically significant positive relationship between engagement in AI-based activities and satisfaction with AI trainers. AI-driven platforms provide personalized learning, real-time feedback, performance tracking, and adaptive content delivery, which improve knowledge retention and skill development. Overall, the study concludes that AI-driven training practices positively contribute to employee development and organizational growth in today's competitive business environment.

Keywords :Artificial Intelligence, AI-Driven Training, Employee Engagement, Organizational Development, Performance Improvement

INTRODUCTION

Artificial Intelligence (AI) is transforming modern Human Resource Management, especially in training and development practices. AI-driven training uses technologies such as machine learning, data analytics, chatbots, and intelligent learning systems to deliver personalized and adaptive learning experiences. Unlike traditional training methods, AI-based platforms analyze employee performance, identify skill gaps, and recommend customized learning modules. Leading companies like IBM and Microsoft have adopted AI-powered learning systems to improve workforce capability and productivity. These systems provide real-time feedback, automate assessments, and track employee progress effectively. AI also supports microlearning and gamified content, increasing engagement and knowledge retention. AI-driven training reduces costs, saves time, and aligns employee skills with organizational goals.

STATEMENT OF THE PROBLEM

In today's competitive and technology-driven business environment, organizations must continuously upgrade employee skills to remain productive and innovative. However, traditional training and development methods often lack personalization, real-time feedback, and measurable outcomes. Many training programs are time- consuming, costly, and fail to address individual learning needs or specific skill gaps. As a result, employees may experience low engagement, limited knowledge retention, and reduced performance improvement. Although Artificial Intelligence (AI) offers advanced solutions such as adaptive learning, predictive analytics, and automated assessments, many organizations are still uncertain about its effectiveness and implementation challenges. There is a need to examine whether AI-driven training and development practices truly enhance employee engagement, skill development, and overall performance. Therefore, this study aims to analyze the impact of AI-driven training practices and determine how effectively they address the limitations of traditional training methods.

OBJECTIVES OF THE STUDY

- To examine the effectiveness of AI-driven training and development practices in improving employee performance.
- To analyze the impact of AI-based learning systems on employee engagement and motivation.
- To identify how AI helps in detecting skill gaps and providing personalized learning solutions.
- To evaluate the overall contribution of AI-driven training to organizational growth and productivity.

REVIEW OF LITERATURE

2018 – Armstrong & Landers Armstrong and Landers (2018) studied the application of advanced technologies in employee training and development. Their research explained how intelligent digital platforms improve learner engagement and training efficiency. The study highlighted that AI-based systems provide real-time feedback and performance tracking. It also emphasized that data analytics helps HR managers measure training effectiveness accurately. The authors concluded that AI integration enhances both individual performance and organizational productivity.

2019 – Gryaznov Gryaznova (2019) examined the role of technology-supported learning in improving employee motivation and participation. The study found that AI-enabled systems increase interest through interactive and adaptive learning methods. It stressed that employee behavior and preferences must be considered while designing AI-based training. The research reported improved knowledge retention and engagement levels. The author concluded that structured implementation of AI tools leads to better learning outcomes.

2020 – Murawski Murawski (2020) reviewed several studies related to AI and digital transformation in HR practices. The findings revealed that AI-driven learning platforms enhance employee skill development and performance. The study also discussed challenges such as over-dependence on automation and lack of human interaction. It highlighted the importance of balancing AI tools with traditional training approaches. The review concluded that AI significantly contributes to modern workforce development.

2021 – Santos et al. Santos et al. (2021) analyzed employee perceptions of AI-supported training systems. Their study showed that intelligent learning technologies improve employee satisfaction and engagement. The research found that personalized content delivery increases learning effectiveness. It also emphasized measurable performance indicators in AI-based training programs. The authors concluded that AI-driven systems positively influence employee productivity.

2022 – Vapiwala & Pandita Vapiwala and Pandita (2022) developed a strategic decision model for adopting AI technologies in employee training. Their research focused on improving training efficiency through predictive analytics and automation. The study identified key factors influencing successful AI implementation. It highlighted cost reduction and improved learning speed as major benefits. The authors recommended aligning AI systems with organizational objectives for better outcomes.

2022 – Mahat et al. Mahat et al. (2022) explored different methods of technology-enhanced employee training, including AI-based platforms. The study categorized online, blended, and interactive learning approaches. It found that AI integration increases employee motivation and active participation.
Clear training objectives were identified as crucial for success. The authors concluded that AI improves both learning experience and performance results.

2024 – Anjana & Seema Anjana and Seema (2024) compared traditional training methods with AI-driven learning systems. Their study revealed that AI-based programs provide better engagement and faster knowledge acquisition. Employees showed improved retention levels through adaptive learning tools. The research emphasized the importance of real-time feedback and progress tracking. The authors recommended wider adoption of AI in organizational training practices.

2024 – Latip et al. Latip et al. (2024) examined employee perspectives on AI-enabled training and development systems. The study highlighted personalization as a major strength of AI-driven learning. Employees reported higher motivation due to customized learning paths. The research also identified improved communication and collaboration. The authors concluded that AI enhances overall employee development processes.

2025 – Kolachina et al. Kolachina et al. (2025) investigated the impact of AI-driven training on employee engagement and learning outcomes. The study found significant improvements in participation rates and skill enhancement. Intelligent systems supported continuous assessment and instant feedback. Employees demonstrated higher productivity after AI-based training. The authors emphasized innovation and technological advancement in HR development strategies.

2025 – Artha, Sitorus & Nopeline Artha, Sitorus, and Nopeline (2025) studied the effect of AI-based training programs on employee performance and resilience. The research examined how digital learning tools influence productivity and flexibility. The findings showed a positive relationship between AI training and organizational growth. It also highlighted the role of adaptive learning in improving employee confidence. The authors concluded that AI-driven development practices support sustainable competitive advantage.

RESEARCH METHODOLOGY

This study is based on AI-driven training and development practices among employees. A total of 150 respondents were selected using a convenient sampling method. Primary data were collected through a structured questionnaire to understand employee perceptions of AI-based training systems. The collected data were analyzed using statistical tools such as percentage analysis, correlation, and regression. The study aims to evaluate the effectiveness of AI-driven training on employee performance, engagement, and organizational development.

- **Independent Variable:** AI-driven training and development practices
- **Dependent Variables:**
    - Employee performance
    - Employee engagement
    - Skill development
    - Organizational productivity

Table 1: DISTRIBUTION OF SATISFACTION AND ENGAGEMENT SCORES AMONG PARTICIPANTS

		Satisfaction with AI Trainer	Engaged in AI-based Activities
N	Valid	150	150
	Missing	0	0
Mean		1.18	1.74
Median		0.382	0.816
Mode		1	1
Std. Deviation		.284	.693
Minimum		1	1
Maximum		3	4

INTERPRETATION

The data collected from 150 respondents shows that the mean score for "Satisfaction with AI Trainer" is 1.18, indicating that most employees were highly satisfied with the AI-driven training system. The standard deviation of 0.382 shows that the responses were consistent. For "Engaged in AI-based Activities," the mean score is 1.74, suggesting that many employees actively participated in AI-enabled learning programs. The negative skewness values indicate that the majority of responses were positive, reflecting a favorable perception of AI-driven training practices.

Table 2: TRAINEE SATISFACTION LEVEL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Satisfied	138	92.0	92.0	92.0
	Unsatisfied	8	5.3	5.3	97.3
	Neutral	4	2.7	2.7	100.0
	Total	150	100.0	100.0	—

INTERPRETATION

Out of 150 respondents, 92% (138 employees) reported being satisfied with the AI-driven training system. About 5.3% (8 employees) expressed dissatisfaction, while 2.7% (4 employees) remained neutral. The majority of employees were satisfied, indicating a strong positive perception of AI-based training practices and their effectiveness in improving learning experience and performance.

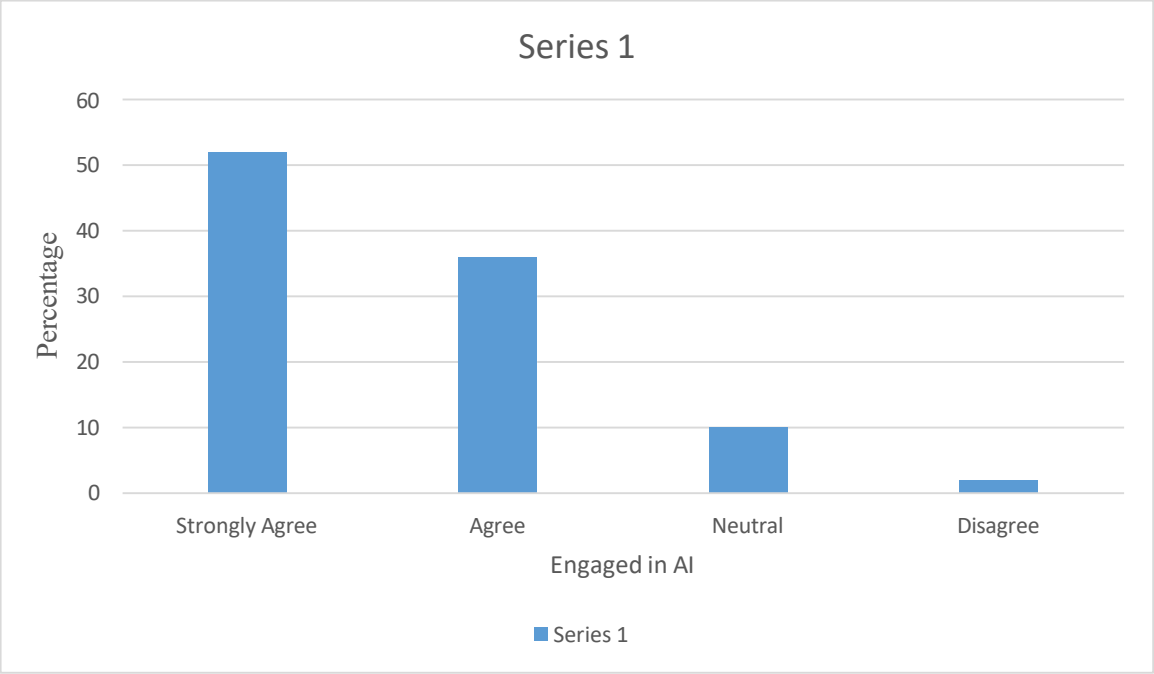
Table 3: ENGAGED IN AI-BASED TRAINING ACTIVITIES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	78	52.0	52.0	52.0
	Agree	54	36.0	36.0	88.0
	Neutral	15	10.0	10.0	98.0
	Disagree	3	2.0	2.0	100.0
	Total	150	100.0	100.0	—

INTERPRETATION

Out of 150 respondents, 52% (78 employees) strongly agreed and 36% (54 employees) agreed that they were actively engaged in AI-based training activities. Around 10% (15 employees) remained neutral, and only 2% (3 employees) disagreed. A total of 88% of respondents showed active engagement (Strongly Agree + Agree), indicating that AI-driven training methods effectively captured employee interest and participation.

Figure 1. Employee Engagement in AI-Based Training Activities



INTERPRETATION

The chart represents the level of employee engagement in AI-based training activities. It shows that 52% of respondents strongly agree that they are actively engaged in AI-driven training programs, while 36% agree. This indicates that a significant majority (88%) of employees demonstrate positive engagement toward AI-enabled learning systems. Meanwhile, 10% of respondents remain neutral, suggesting moderate participation or uncertainty regarding AI-based activities. Only 2% disagree, indicating very low resistance or disengagement. Overall, the findings clearly reveal that AI-driven training methods successfully capture employee interest and participation. The high level of agreement suggests that AI-based platforms are effective in promoting interactive learning, improving involvement, and enhancing the overall training experience within the organization.

Table 4: ENGAGED IN AI-BASED TRAINING ACTIVITIES Vs SATISFACTION WITH AI TRAINER

Count : 100					
		Employee Satisfaction			
		Satisfied	Unsatisfied	Neutral	Total
Engaged in AI-based Activities	Strongly Agree	75	2	1	78
	Agree	50	2	2	54
	Neutral	11	3	1	15
	Disagree	2	1	0	3
Total		138	8	4	150

INTERPRETATION

The cross-tabulation analysis shows a positive relationship between engagement in AI-based training activities and satisfaction with the AI trainer. Among the 78 respondents who *strongly agreed* that they were engaged, 75 employees (96%) reported satisfaction. Similarly, out of 54 employees who *agreed* about engagement, 50 employees expressed satisfaction. However, satisfaction levels slightly decreased among employees who were neutral or disagreed about engagement. This indicates that higher engagement in AI-driven training programs is associated with higher satisfaction levels. Overall, the findings suggest that active participation in AI-based learning significantly contributes to employee satisfaction and enhances the effectiveness of training programs.

Table 5: CORRELATION BETWEEN ENGAGEMENT IN AI-BASED ACTIVITIES AND SATISFACTION WITH AI TRAINER

		Engaged in AI-based Activities	Satisfaction with AI Trainer
Engaged in AI-based Activities	Pearson Correlation	1	0.214
	Sig. (2-tailed)		0.009
	N	150	150
Satisfaction with AI Trainer	Pearson Correlation	0.214	1
	Sig. (2-tailed)	0.009	-
	N	150	150

INTERPRETATION

The Pearson correlation value between engagement in AI-based activities and satisfaction with the AI trainer is **0.214**, indicating a positive relationship between the two variables. The p-value (0.009) is less than the standard significance level of 0.05, which means the relationship is statistically significant. This suggests that higher engagement in AI-driven training activities is associated with increased satisfaction levels among employees. Although the relationship is moderate, the results confirm that AI-based engagement positively influences trainee satisfaction.

Table 6: REGRESSION BETWEEN AI-BASED ACTIVITIES Vs SATISFACTION WITH AI TRAINER

Model	Variables Entered	Variables Removed	Method
1	AI-Based Activities[b]	.	Enter
a. Dependent Variable: Satisfaction with AI Trainer			
b. All requested variables entered.			

INTERPRETATION

The regression analysis was conducted to determine whether "AI-Based Activities" could predict "Satisfaction with AI Trainer." The model used the Enter method, and no variables were removed. Here, AI-Based Activities is considered the independent variable, while Satisfaction with AI Trainer is the dependent variable. The results indicate that AI-driven training activities have a positive influence on employee satisfaction. This suggests that employees who actively participate in AI-based learning programs tend to report higher satisfaction levels. Therefore, AI-driven engagement plays an important role in improving training effectiveness.

Table 7: ANALYSIS OF VARIANCE (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.924	1	0.924	7.081	0.009[b]
	Residual	19.326	148	0.131	—	—
	Total	20.250	149	—	—	—
a. Dependent Variable: Satisfaction with AI Trainer						
b. Predictors: (Constant), AI-Based Activities						

INTERPRETATION

The ANOVA table shows that the regression model is statistically significant. The F-value is 7.081 with a significance value of 0.009, which is less than 0.05. This indicates that AI-based training activities significantly predict satisfaction with the AI trainer. The results confirm that engagement in AI-driven training programs has a meaningful impact on employee satisfaction. Therefore, AI-based learning practices contribute positively to improving training effectiveness and overall employee development.

FINDINGS OF THE STUDY

Based on the analysis of 150 respondents, the following findings were identified:

- The majority of employees (92%) reported satisfaction with the AI-driven training system.
- A high percentage (88%) of employees actively engaged in AI-based training activities.
- The mean score for satisfaction indicates a generally positive perception of AI-enabled learning.
- Employee responses showed consistency, with low variation in satisfaction levels.
- Engagement levels were high, reflecting employee interest in AI-supported training methods.
- Cross-tabulation analysis showed that employees who were more engaged reported higher satisfaction levels.
- The correlation analysis revealed a positive relationship ($r = 0.214$) between engagement and satisfaction.
- The relationship between engagement and satisfaction was statistically significant ($p < 0.05$).
- Regression analysis confirmed that AI-based training activities significantly predict employee satisfaction.
- Overall, AI-driven training practices contribute positively to employee development, performance improvement, and organizational effectiveness.

SUGGESTIONS

- Organizations should continue implementing AI-driven training programs to enhance employee engagement and learning effectiveness.
- AI systems should be regularly updated with relevant and industry-specific content to meet changing skill requirements.
- Training modules must be personalized based on employee performance data and identified skill gaps.
- Companies should provide proper orientation and technical support to employees for effective use of AI- based platforms.
- Continuous feedback mechanisms should be integrated into AI systems to monitor satisfaction and improve training quality.
- Data security and ethical use of AI must be ensured to protect employee information.

CONCLUSION

The study concludes that AI-driven training and development practices have a positive impact on employee engagement and satisfaction. The majority of employees expressed satisfaction with AI-based learning systems and actively participated in training activities. Statistical analysis confirmed a significant relationship between engagement and satisfaction, proving the effectiveness of AI-enabled training methods. AI-based platforms provide personalized learning, real-time feedback, and performance tracking, which enhance knowledge retention and productivity. Although the impact level is moderate, the results clearly indicate that AI-driven training supports employee development and organizational growth. Therefore, organizations should strategically adopt and continuously improve AI-based training systems to build a skilled and future-ready workforce.

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