International Jurnal Islamic Education, Research and Multiclturalism (IJIERM)
Available online https://journal.yaspim.org/index.php/IJIERM/index

ENHANCING WORKFORCE PERFORMANCE: INVESTIGATING THE IMPACT OF GMAIL AND ZOOM TRAINING IN ORGANIZATIONAL SETTINGS

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Abstrak

Transformasi digital menuntut peningkatan kompetensi teknologi pada seluruh sektor kerja, termasuk industri tradisional. Penelitian ini bertujuan untuk menguji efektivitas pelatihan digital terstruktur menggunakan aplikasi Gmail dan Zoom dalam meningkatkan kinerja karyawan pada Departemen Tebu di salah satu perusahaan gula di Bijnor, India. Penelitian ini menggunakan desain kuasi-eksperimental one-group pre-test–post-test dengan pendekatan kuantitatif. Sebanyak 10 karyawan laki-laki berpartisipasi melalui teknik convenience sampling. Data dikumpulkan menggunakan kuesioner biner (Ya/Tidak) sebanyak delapan item yang diberikan sebelum dan setelah pelatihan. Analisis statistik menunjukkan adanya peningkatan signifikan pada kemampuan digital karyawan, dengan skor rata-rata dari 1,90 sebelum pelatihan meningkat menjadi 7,20 setelah pelatihan. Nilai t hitung sebesar 6,283 pada df = 9 signifikan pada p < 0,01, yang mengindikasikan bahwa peningkatan tersebut bukan terjadi secara kebetulan. Temuan ini menegaskan bahwa pelatihan digital terstruktur berkontribusi terhadap peningkatan literasi digital dan kinerja kerja sehingga menjadi strategi penting dalam pengelolaan modal manusia pada era digital.

Kata Kunci: *Pelatihan Digital, Kinerja Karyawan, Gmail, Zoom, Modal Manusia*

Abstract

Digital transformation requires improved technological competency across all sectors, including traditional industrial environments. This study aimed to examine the effectiveness of a structured digital training program focused on Gmail and Zoom applications in enhancing workforce performance within the Cane Department of a sugar industry in Bijnor, India. A quantitative approach was applied using a quasi-experimental one-group pre-test–post-test design. A total of ten male employees were selected through convenience sampling. Data were collected using an eight-item binary (Yes/No) questionnaire administered before and after the training. Statistical findings revealed a significant improvement in employees' digital performance, as the mean score increased from 1.90 before training to 7.20 after training. The obtained t-value of 6.283 at df = 9 was significant at p < .01, indicating that the observed improvement did not occur by chance. These results confirm that structured digital training plays a crucial role in

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Article History	Submitted: 29 May 2025	Accepted: 29 October 2025	Published: 5 November 2025

developing digital literacy and strengthening employee performance, making it a strategic component in modern human capital management.

Keywords: Digital Training, Employee Performance, Gmail, Zoom, Human Capital

INTRODUCTION

In the current era of intensified global competition and rapid digital transformation, training and development have become critical components of human capital management. Organizations today face constant pressure to upskill their workforce to remain relevant amidst accelerating technological advancements and evolving work patterns resulting from digitalization and the post-Covid-19 landscape. Information and communication technologies (ICT), such as Zoom, Gmail, and other digital platforms, have substantially reshaped how individuals interact, work, and learn. This transformation not only enhances organizational efficiency but also demands higher levels of digital competence and adaptability among employees (Lee & Lyu, 2016; Hazzam & Lahrech, 2018). Consequently, continuous human resource development is both academically and practically essential—academically, to understand the link between training, digitalization, and performance, and practically, to sustain organizational competitiveness and productivity in the era of Industry 4.0.

Prior research has emphasized the importance of training and human capital development as key drivers of organizational performance (Armstrong, 2020; Knoke et al., 1994; Rowden et al., 2005). However, most studies have predominantly focused on large organizations with complex structures, while the effectiveness of training within small and medium-sized enterprises (SMEs) remains underexplored. Moreover, research examining the impact of digital technology on training effectiveness, employee performance, and technological adaptation is still limited (Mumford, 2000; Dauda & Akingbade, 2011). Existing literature generally treats training as a static variable, with insufficient discussion on how digital integration has reshaped workplace learning, skill acquisition, and performance dynamics. This highlights a critical research gap concerning how technology-enhanced training influences employee competencies and organizational adaptability in the digital era.

This study aims to address the above gaps by examining the relationship between training effectiveness, human resource development, and technological adaptation in enhancing employee performance in the digital era. Specifically, this research seeks to explore how technology-

based training fosters individual competencies, increases productivity, and promotes organizational innovation. It also discusses the role of training in strengthening organizational commitment and digital readiness as a long-term investment in human capital. Therefore, this study provides both theoretical contributions—by proposing a model of technology-integrated human resource development—and practical implications for organizations in designing adaptive training strategies aligned with technological disruption and global economic transformation.

This study is grounded in the hypothesis that effective training and development exert a positive influence on employee performance, and that this relationship is mediated by employees' digital technological adaptation. The higher the level of training—both formal and informal—received by employees, the greater their capability to utilize technology to enhance productivity and work efficiency (Gordon, 1977; Cheng & Ho, 2001; Afroz, 2018). In other words, organizational success in improving workforce performance depends on its ability to integrate training with relevant digital competency development aligned with job requirements. Accordingly, this study argues that the combination of continuous training and digital transformation constitutes a key determinant of organizational success in navigating the challenges of a knowledge-based global economy.

LITERATURE REVIEW

Existing scholarship on human capital development emphasizes the essential role of training in enhancing employee performance and organizational effectiveness. A significant number of studies have established a direct linkage between training, skill acquisition, and improved job performance (Armstrong, 2020; Afroz, 2018; Garavan et al., 2020). Scholars further acknowledge that training fosters organizational commitment, communication skills, and retention, which subsequently influence overall productivity and workplace cohesion (Pool & Pool, 2007; Gordon, 1977; Cheng & Ho, 2001). More recently, research has expanded toward understanding the integration of digital technologies in workplace training, asserting that technological evolution significantly shapes employee performance and organizational growth (Mumford, 2000; Dauda & Akingbade, 2011). Based on the literature, three dominant research tendencies emerge: (1) studies focusing on the effectiveness of conventional training on human capital outcomes, (2) studies examining technology adoption and digital competency as determinants of employee performance, and (3) studies exploring communication-based training in strengthening workplace performance and relational dynamics. These trends indicate gradual shifts in scholarly attention from traditional training

models toward technology-mediated and competency-based human resource development (Hu & Lv, 2025; Knights et al., 2025).

The first body of literature predominantly explores the role of traditional training programs in enhancing human capital and improving employee performance. These studies conceptualize training as a structured and formal process through which employees gain knowledge, skills, and competencies required for tasks and organizational success (Armstrong, 2020; Knoke et al., 1994). The underlying assumption of this stream is that investment in training yields high returns for organizations, both through productivity gains and better human resource outcomes. Research within this pattern commonly adopts quantitative or quasi-experimental methods to measure the impact of training interventions on employee skills, performance indicators, and organizational productivity. Findings consistently affirm that structured employee training leads to improvement in task execution, output quality, and employee efficiency across various sectors (Cheng & Ho, 2001; Elnaga & Imran, 2013). However, this strand of research largely focuses on large enterprises and formal organizational structures, with limited attention to small and medium-sized enterprises (SMEs), where training practices are often informal, underfunded, or overlooked (Rowden et al., 2005).

The second line of research examines the influence of technological evolution on human capital effectiveness and employee performance. Scholars in this cluster highlight that digital transformation demands new forms of expertise and cognitive adaptability, positioning technology as a key determinant of workforce productivity (Mumford, 2000; Pavitt, 1990). This research trend emphasizes that employee technological skills act as a mediator between digital innovation and organizational performance, suggesting that technological advancements produce benefits only when supported by adequate human capability (Huselid, 1995; Dauda & Akingbade, 2011). Studies typically employ a mixed-method or correlational approach to analyze how digital tools, ICT adoption, and technology-centered training programs influence employee adaptability, innovation, and performance outcomes. However, evidence suggests that technological disruption also generates workplace anxiety, skill gaps, and resistance to change when employees lack sufficient digital readiness (Oguegbe et al., 2017; Joe-Akunne et al., 2019). As such, scholars agree that digital training must accompany technology integration to maximize performance and minimize psychological strain in the workforce.

A third research orientation focuses on communication-centered training and its role in enhancing relational performance, employee engagement, and organizational climate. Scholars in this stream assert that

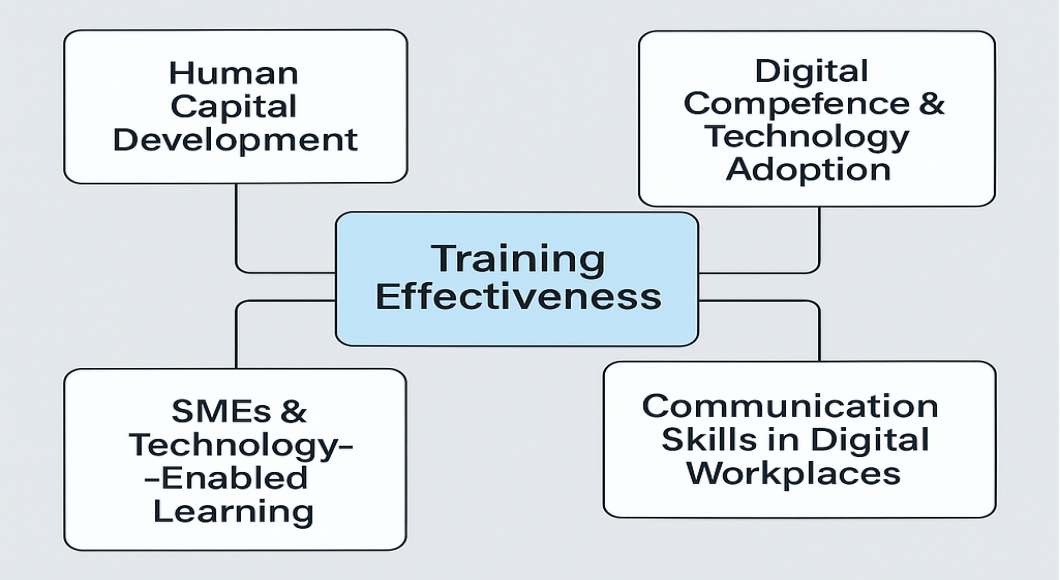
communication skills training strengthens interpersonal relationships, workplace collaboration, and information exchange, which contribute to long-term organizational success (Gordon, 1977; Bowling, 2007). Communication-based interventions are shown to improve employee reporting, engagement, and service quality, ultimately generating positive work behaviors and increased profitability. This pattern of research also establishes an association between communication competence, knowledge sharing, and performance, arguing that employees with superior communication skills adapt more effectively to dynamic organizational environments and technological changes (Etodike et al., 2020). Methodologically, these studies frequently adopt qualitative, survey-based, or longitudinal designs to examine how communication training influences organizational commitment, team cohesiveness, and leadership development (Pool & Pool, 2007). Although this stream enriches understanding of soft skill development, it remains detached from the broader context of digital workplace demands and technology-mediated communication competencies.

Despite the valuable insights offered by these three research strands, several limitations remain evident in the existing literature. First, the majority of prior studies treat training, technological adoption, and communication-based skill development as separate research domains, neglecting to examine their interdependent effects on employee performance. Second, research disproportionately focuses on large organizations, offering limited empirical evidence on how SMEs implement training and technology-based human capital development. Third, current studies inadequately address the integration of technology within training frameworks, especially regarding how digital training platforms (e.g., Zoom, Gmail, virtual learning tools) affect skill enhancement, employee engagement, and performance outcomes. Finally, insufficient attention has been given to the psychological implications of digital adaptation, including anxiety, readiness, and cognitive burden associated with digital transformation in the workplace. These gaps underscore the need for a more holistic model that connects training effectiveness, technological adaptation, communication skills, and employee performance (Oluoch et al., 2025; Shimray & Subaveerapandiyan, 2025).

To address these gaps, this study proposes a contemporary research orientation that integrates the domains of training, digital competency, and communication-based human capital development. This research advances the argument that employee performance in the digital era is not solely determined by training quantity or technology adoption, but by the effectiveness of technology-enabled training that simultaneously enhances

digital skills, communication abilities, and psychological readiness. By adopting an integrated perspective, this study seeks to examine how technology-supported training interventions foster employee competencies, workplace adaptability, and performance outcomes across various organizational contexts, including SMEs. This approach aligns with the evolving nature of work, where hybrid learning, digital collaboration platforms, and ICT-based training constitute the new strategic foundation for human capital development. Ultimately, this study offers a novel conceptual framework that reflects the realities of digital work environments while contributing to empirical advancements in human resource development research.

Figure: 1 Training Effectiveness in Digital Workplaces



RESEARCH METHODS

This study focused on the individual level of analysis, specifically examining employees within the Cane Department of a sugar industry located in Bijnor, India. The research aimed to investigate how digital training, particularly on Gmail and Zoom applications, influences workforce performance. A quantitative research design was employed, supported by a pre-test and post-test survey approach to measure changes in digital competency before and after training. The study adopted a quasi-experimental one-group pre-test–post-test design, as participants were exposed to an intervention without a control group. This design allowed the researcher to capture measurable improvements in knowledge, skills, and self-efficacy linked to the training intervention. A convenience

sampling technique was used to recruit ten male adult participants who possessed smartphones but had no prior experience using Zoom or Gmail. Written consent was obtained prior to participation, ensuring adherence to ethical standards (Rakhshani et al., 2024).

The data for this research were derived directly from primary sources, namely participants who served as research respondents. Information was collected using an 8-item binary (Yes/No) questionnaire, administered twice—before and after the training—to assess the participants' level of digital literacy and skill development related to Gmail and Zoom. Additional qualitative insights were gathered informally through feedback during doubt-clearing sessions to complement the quantitative results. The data collection process involved several stages: obtaining ethical approval, pre-training survey administration, structured training delivery using demonstrations and hands-on practice, and post-training survey completion (Fachruddin Azmi & Lusinta Rehna Ginting, 2022). The training was conducted using participants' mobile phones, supported by a laptop-to-projector display to enhance clarity and interactive learning. Data were analyzed using descriptive comparative analysis, comparing pre-test and post-test scores to identify skill improvement and determine the effectiveness of the training intervention. The analysis emphasized changes in participants' digital competencies, ability to perform tasks, and confidence in using Gmail and Zoom for professional purposes.

RESULTS AND DISCUSSION

Results

Rapid digital transformation has reshaped operational demands in organizations, requiring employees to develop competencies in digital communication tools such as Gmail and Zoom. In many traditional industries, however, workers often lack adequate exposure and training to use these technologies effectively. The present study was conducted to examine how a structured digital training program can improve employees' performance in utilizing Gmail and Zoom applications within the Cane Department of a sugar industry in Bijnor, India. Using a pre-test and post-test design, the statistical analysis demonstrated a significant improvement in digital performance, where the mean score increased from 1.90 to 7.20 after training, supported by a t-value of 6.283 ($p < .01$). These results confirm that the training intervention played a decisive role in enhancing the workforce's technology adoption and operational efficiency.

The substantial performance improvement visualized in Figure 1 also demonstrates that the changes observed were not due to chance, but

rather a direct effect of the structured, hands-on learning process. These outcomes emphasize the strategic importance of continuous employee development as a foundation of human capital management. In response to the rapid evolution of technology and global competition, organizations must redesign their training approaches to align with business objectives, strengthen digital readiness, and ensure employees remain skilled and productive. This study therefore highlights that investing in digital training is not merely an operational task but a strategic effort to build a resilient and competitive workforce capable of thriving in modern work environments.

Table 1: The obtained data from the facial survey was organized and statistically analyzed for descriptive statistics and t-tests. Obtained results are present in Table 1.

C	N	df	Mean	Std. Deviation	t
Pre- test	10	9	1.900	1.523	6.283**
Post-test	10	9	7.200	.918	

**significant at .01 level

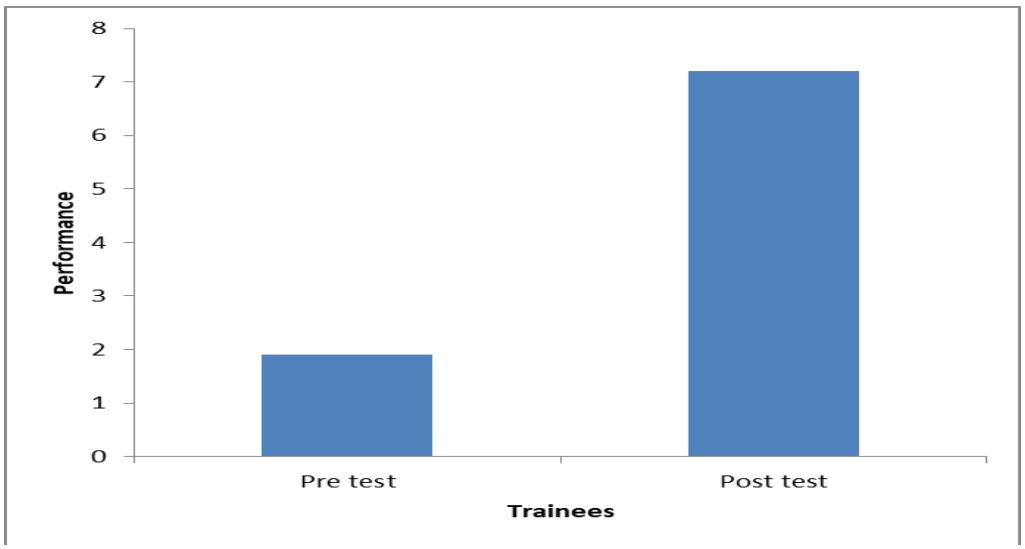


Figure1
Average performance of the trainees before and after training

Analysis of the performance of the use of Gmail and Zoom applications was computed where the table value of the t-test at the .01 and

.05 levels on df=9 indicates a significant enhancement in candidates performance with the help of structured training. The mean score prior to training (pre-test) was 1.900 with a standard deviation of 1.523, whereas the mean score subsequent to training (post-test) increased to 7.200 with a standard deviation of 0.918. The t-test value for the pre-test and post-test was 6.283 (significant at p<.01), which shows the significant difference between the two conditions. For degrees of freedom (*df*) of 9 and a one-tailed hypothesis, the obtained *t* value is found to be significant at $p < .01$. Which means that the null hypothesis is rejected and the alternative hypothesis that "structured training will enhance employees' performance for Gmail and Zoom applications" is accepted? Therefore, the statistical significance concludes that if the study is repeated, there are 99 chances out of 100 that a similar result will be obtained. The variation between two conditions, i.e., pre-test and post-test effects, can be seen in Figure 1, which clearly illustrates the success of the training. The significant improvement shows that this change is real and not due to any chance.

Human capital is considered one of the most indispensable strengths of the organization; therefore, an attentive management approach is necessary to get the upper hand on this valuable resource. This research focuses attention on the importance of providing effective modus operandi of training and development to make an effort to increase members of the workforce's performance and work rate. In real scenarios, chief executives or managers must provide their members of the workforce with the right set of circumstances to enhance their skills. In order to do so, chief executives or managers must put training and development in order of needs with business objectives.

The high-speed change and development of tech have led all firms to a major competition. To carry on the continuity of business in such a cutthroat environment and to maximize their productivity and organizational-centered approach to factories and the post-industrial economy, organizations have changed their strategy towards their members of the workforce. These evolving states of affairs and points of view of people have been collected under wholeness and have created human capital management as a new discipline.

The firms that are capable of acknowledging the advantages of training that are recognized in this study are able to move away from perceiving the training purpose as an operational activity (Fox 2003). Case in point, an advisory firm, PricewaterhouseCoopers, has decreased costs in a number of areas; however, the firm increased its funding in employee training to around $120 million each year. Additionally, the top advisory firm, Booz Allen Hamilton, has a reliance on developing members of the

workforce as an ongoing competitive benefit (Fox 2003). Executives of these firms select knowledge and training regarding business concerns after effect, making conclusions about how to allocate capital, including training events and resources. Training is a way that focuses on ideal and helpful firm culture, including job satisfaction, less burnout effect, and market-driven philosophies. Transparently, having the track record of the training program and its planning, delivering, and evaluating will permit the human capital management department to be a deliberate organization.

Human capital management must conduct training and assessment to improve members of the workforce's performance in organizations. Preparing the training programs for their members of the workforce must be a continuous activity. Also, it is a planned and systematic way with a clear firm's well-thought-out objectives along with the results of tactical human capital planning while maintaining the particular training needs of the individuals. Human capital management must get recognition for the designing of the training program. There are training design elements whose objectives of the training must be explained clearly to the trainees and linked with their job needs; the training material must be relevant; and the training programs should include varieties of methods to deliver their knowledge and information appropriate for learning, such as classroom training, e-learning, case studies, lectures, role-playing, stimulation, in-basket training, and on-the-job training.

Executives at every step should recognize the fact that training and development are paramount tools that enhance a firm's ability to gain a competitive upper hand and to compete with the evolving business world. Therefore, it is recommended that all the chief executive officers, presidents, senior managers, junior managers, supervisors, and members of the workforce go under the training and development program so that their performance can get enhanced, including their knowledge, skills, ability, competencies, and behavior. The applicable approach of support and involvement must involve the training and development goal to be carried through. In practice, advanced human resource management is vitally important for enhancing modern firms with powerful stands for survival and long stays in the market. This can be achieved by recruiting human capital professionals to develop programs that will ensure enhancement of knowledge, skills, and experience within the workforce. Professionals chosen for providing training must be well trained in their field and have enough experience to deal with the hopes as well as necessities of the members of the workforce. Practically, the study confirms that the performance of the members of the workforce can get enhanced through proper training programs.

Discussion

The present study examined the effectiveness of structured digital training—specifically on Gmail and Zoom—in improving employees' digital performance within the Cane Department of a sugar industry in Bijnor, India. The findings revealed a substantial increase in employees' digital competency following the training intervention. Quantitative analysis showed a significant difference between pre-test and post-test scores, with the mean score improving from 1.90 (SD = 1.523) prior to training to 7.20 (SD = 0.918) after training. The computed t-value of 6.283 at df = 9 was significant at $p < .01$, indicating that the improvement did not occur by chance. These results confirm that the structured training program successfully enhanced employees' skills in using Gmail and Zoom applications. The visual comparison illustrated in Figure 1 further supports this improvement, demonstrating a clear shift in performance levels before and after training. Overall, the study provides empirical evidence that targeted digital training can enhance workforce performance, especially among employees with minimal prior exposure to digital collaborative tools (Mutia Annisa et al., 2021; Nurasyiah, 2022).

The significant improvement in post-training performance can be attributed to the structured and hands-on nature of the training, which combined guided instruction, live demonstrations, and immediate practice. Cognitive load theory suggests that learning is strengthened when new skills are demonstrated and practiced simultaneously, enabling the transfer of knowledge from short-term to long-term memory. In this study, employees were not passive recipients but active participants, applying learned skills on their own smartphones during the training, which accelerated skill internalization. Furthermore, the use of pre-test and post-test assessments helped participants become aware of the skill gaps they needed to fill, increasing learning motivation. The digital platforms selected—Gmail and Zoom—also played a role in the observed performance improvement because of their direct relevance to organizational communication and workflow efficiency. The training clearly filled a capability gap by equipping employees with necessary digital competencies to confidently engage in virtual communication, information sharing, and task execution. Thus, the relationship between structured training and improved performance is explained by increased digital literacy, enhanced self-efficacy, and improved technology acceptance among employees.

These findings align with earlier studies that emphasize the positive impact of training on employee performance and organizational productivity (Afroz, 2018; Garavan et al., 2020). Similar to Cheng and Ho

(2001), this study found that appropriate training enhances employee skills and retention. Additionally, consistent with Gordon (1977), training that enhances communication capabilities leads to stronger workplace relationships. However, this research contributes novelty by extending the discussion to digital literacy training in a traditional industrial context, particularly among workers with limited technology exposure—an area often overlooked by prior studies, which predominantly focused on corporate, educational, or technologically advanced sectors. Previous studies assumed that small or medium enterprises engage minimally in employee development (Rowden et al., 2005), whereas this study challenges that assumption by demonstrating that even resource-constrained industries can benefit significantly from focused digital capacity-building. Unlike studies in highly developed digital workplaces, this research highlights the transformative effect of basic digital training for non-digital work environments, addressing a current gap in human capital development literature (Dicataldo & Dipace, 2025; Tripathi et al., 2025; Vilma & Booshnam, 2025).

The results of this study hold broader meaning within the context of digital transformation and human capital development. The findings illustrate that digital training is no longer a luxury but a necessity for workforce adaptability, resilience, and competitiveness in the post-COVID era. The success of Gmail and Zoom training suggests that digital competence is now a core component of employability, even in traditionally non-digital industries. This shift reflects a wider socio-economic transformation where technological literacy becomes a form of "new capital," shaping power relations, job opportunities, and workplace hierarchies. The study also demonstrates that digital inclusion can reduce skill inequalities within organizations, empowering employees who previously lacked confidence using technology. In a historical context, this transformation mirrors the industrial revolution's shift from manual labor to machinery—now evolving into a digital labor paradigm. Ideologically, the increased reliance on technology reshapes organizational culture towards transparency, efficiency, and interconnectedness. Therefore, the findings signify a transition toward a more digital, collaborative, and innovation-driven work environment, where technology adoption becomes an instrument of empowerment and social mobility within the workforce (Dalvi-Esfahani et al., 2025; Rajandran et al., 2025; yuosef Alsha'ar et al., 2025)

The implications of this research indicate that structured digital training generates multiple functional benefits for organizations, including higher work efficiency, improved communication, enhanced employee

confidence, and reduced resistance to technological change. When employees feel supported and skilled in using technology, their organizational commitment and job satisfaction tend to increase, which can ultimately reduce turnover. However, potential dysfunctions must also be acknowledged. Rapid digitization without ongoing mentorship may create new forms of skill inequality, where faster-learning employees advance more quickly than others. There is also a risk of over-dependency on digital platforms, leading to decreased interpersonal interaction or digital fatigue. Further, without sustained reinforcement, skills gained may diminish over time—a phenomenon known as skill decay. Therefore, while digital training proves beneficial, it should be implemented alongside continuous learning strategies to ensure sustainable impact. Reflecting on both functional and dysfunctional outcomes helps organizations design more balanced and human-centered digital development programs.

Based on the findings, several actionable recommendations are proposed to improve future training initiatives. First, organizations should institutionalize digital literacy training as a recurring component of employee development rather than a one-time activity. Second, management should integrate digital skills training into performance appraisal systems to reinforce continuous learning. Third, a blended learning model—combining face-to-face workshops, e-learning modules, and peer mentoring—should be adopted to ensure sustained skill retention. Fourth, the Human Capital/HR department should assign certified digital trainers and allocate annual budgets for technological upskilling aligned with business goals. Fifth, organizations should develop digital competency frameworks tailored to job roles, ensuring that training content remains relevant and need-based. Finally, policymakers and industry associations should support skill development initiatives for traditional sectors to minimize digital inequality across industries. These strategic actions will help organizations sustain the gains of digital training, enhance workforce readiness, and strengthen long-term organizational competitiveness in an increasingly digital global economy.

CONCLUSION

This study highlights a critical insight into digital workforce development: structured and hands-on training can dramatically improve employees' digital performance, even among those with minimal prior exposure to technology. The significant rise in employees' competency in using Gmail and Zoom—evidenced by the increase in mean test scores from 1.90 to 7.20 and a highly significant t-value ($p < .01$)—demonstrates that well-designed digital training is not only effective but essential in modern

work environments. The learning derived from this intervention emphasizes that workforce adaptability is strongly dependent on opportunities for practical skill acquisition. In industries traditionally driven by manual operations, such as the sugar sector, nurturing digital literacy becomes a strategic necessity to enhance communication, operational efficiency, and organizational resilience. The experience from this study shows that digital empowerment can reduce anxiety toward technology, strengthen employee confidence, and enable more inclusive participation in digital workflows. Therefore, the primary takeaway from this research underscores the transformative role of targeted training in preparing employees to meet the demands of an increasingly digitalized workplace.

The strength of this research lies in its empirical contribution to the underexplored intersection between digital transformation and human capital development in traditional industrial contexts. While previous studies predominantly focused on digital-skills development in technologically advanced or corporate institutions, this study demonstrates that similar interventions can produce substantial outcomes in sectors where digital adoption remains low. The incorporation of a quasi-experimental one-group pre-test and post-test design provides measurable evidence on how digital training directly influences employee performance. Conceptually, the study extends training effectiveness theory by showing that improving basic digital competencies supports technology acceptance and enhances job performance. Methodologically, the study offers a practical model for assessing training outcomes using short-scale binary measures in resource-limited environments. Additionally, this study opens new academic conversations regarding digital inclusion, especially in small and medium-scale industries that are often overlooked in skill-development research. Thus, the study contributes fresh data and a new perspective to the literature on workforce digitalization.

Despite its meaningful findings, this research has several limitations that should be addressed in future investigations. The study relied on a small sample of ten male employees from a single department in one organization, which restricts the generalizability of results. The absence of a control group also limits causal attribution, as improvements could partially derive from external motivational factors. Moreover, the post-test was conducted immediately after the training, leaving the long-term retention of digital skills unexamined. The training focused only on two digital platforms—Gmail and Zoom—while employees may require additional competencies related to cybersecurity, cloud collaboration tools, or productivity applications. Future research should include larger and

more diverse samples, incorporate gender and departmental variations, and extend the evaluation timeline to measure sustained performance outcomes. Mixed-methods or longitudinal designs could further strengthen understanding of behavioral changes, technology acceptance, and skill transfer into workplace operations. Addressing these limitations will provide a more comprehensive picture of how digital training supports organizational development in different industrial settings.

Limitations

The limitations of the study were that it contained a small sample size and leaned to a single industry only, which reduces its applicability in general. Also, this study was focused on Gmail and Zoom, where other tools can also be included as per the requirements of the organizations. Future researchers can take a look at other sectors and large sample sizes along with a wide range of digital competencies.

Conflict of Interests: The author declared no conflict of interests

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