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EXPLORING THE ROLE OF EDUCATIONAL TECHNOLOGY (EDTECH) IN EMPLOYEE TRAINING AND DEVELOPMENT

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ABSTRACT

The growing nature of educational technology (EdTech) has changed the way training and development among employees has been conducted by providing flexible and engaging learning environments through the use of technology. This study has examined how EdTech can increase employee learning engagement, training satisfaction and skill perception in the case of an organizational setup. The quantitative and descriptive-correlational research design was selected as the best choice to investigate the relationships between the perceptions of EdTech usefulness, engagement, satisfaction, and professional growth of the employees. The data has been gathered among employees who were working in organizations that had adopted training programs based on technology. The perceptions of the participants were measured using a structured questionnaire and its reliability was ensured by high internal consistency score. The results showed that the overall impression of employees was favourable about the training supported by EdTech and that technology is a useful method to enhance the learning process. The results of the correlation showed that there were strong positive associations between perceived usefulness of EdTech, engagement, and satisfaction, and skill improvement. The research has come to the effect that EdTech is a crucial strategic source of employee education and professionalism, encouraging increase in engagement, satisfaction, and perceived competency among the staff. It also highlighted the role played by organizational support, leadership engagement, and digital capacity-building measures in maximizing technology to enable uninterrupted learning of workforce and organizational development.

Keywords: Edtech, Training, Development, Technology.

INTRODUCTION

Organizations are becoming more and more reliant on educational technology (EdTech) to support employee training and development in the current knowledge-based economy, in an attempt to create flexible, innovative, and digital skilled workforces. The blistering technology development rate, especially in the fields of artificial intelligence (AI), data analytics, as well as immersive learning tools, changed the conventional modes of professional development, making it more personalized, flexible, and ongoing (O'Neill et al., 2025). Contemporary EdTech tools edibles and learning management systems (LMSs) envision not only content delivery to a consumer but include self-regulated learning, metacognitive awareness, and improvement of performance due to the use of interactive and data-driven experiences (Harerimana et al., 2025). With organizations embracing global changes in the digital world, employee availability and interest to undergo training that uses technology has become a critical condition of sustaining competitive edge and cost-effectiveness (Mathivha and Nzama-Sithole, 2025). Lu (2025) emphasizes that although digital learning provides more access and flexibility, participatory aspects will still need enhancement, such as addressing the barrier of digital literacy knowledge, motivation, and

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resistance to the technological change-all of which are also accurate considerations in the context of workplace learning.

In the work setting, technology-based learning has been associated with positive changes in work performance and acquisition of skills. In their study, Perez-Cualtan et al. (2025) revealed that 3D and simulation technologies can replace hands-on training and problem-solving skills, which shows that immersive technologies can simulate the conditions of experiential learning during corporate training. Equally, AI-powered solutions are becoming a more prevalent way of incorporating staff development into individual learning trajectories, as well as to evaluate progress and give adaptive feedback (Jobe, 2025; Durbarry et al., 2025). These breakthroughs highlight how EdTech can streamline employee development efforts to organizational goals by either making informed decisions. Nevertheless, EdTech adoption cannot be viewed as a problem that only the technological challenge can tackle--supportive policies in institutions, dedication on behalf of the leadership, and positive attitude toward the culture of ongoing learning is also required (Odediji, 2025). In the absence of these enablers, the use of digital tools might lack the desired results, resulting in the underuse of these tools and skill differences among staff.

Moreover, other contextual determinants related to the success of EdTech-based training are the demographics of employees, digital access, and the perceived usefulness of technology (Badiuzzaman et al., 2026). The research on digital adaptation in various workforces demonstrates that the attitude of learners towards technology is a strong indicator of engagement and satisfaction with the results of learning (Lu, 2025; Izuchukwu, 2025). Although evidence is increasingly starting to mount regarding the potential transformative power of EdTech, minimal empirical studies investigating the relationship between employee perception of EdTech utilization and engagement, satisfaction, and perceived skill benefit is found in a workplace environment, especially in a developing or transitional economy. This gap was addressed in the current research whereby the researcher has attempted to understand how EdTech is used to train and develop employees through the relationships between the perceived usefulness, learning engagement, satisfaction, and development of skills using descriptive and Pearson correlation analyses. By doing so, the research problem sought to broaden the comprehension of how educational technologies could be appropriately incorporated to stimulate learning of a group and human capital growth in an organization.

LITERATURE REVIEW

Recent growth in educational technology (EdTech) has transformed the manner of how organizations lead their employees to undergo training and development by encouraging them to adopt a transformation process that resides on digitized learning, individualized, and knowledge-based learning platforms. With the higher levels of competition within the organizations because of the knowledge based economies, the capability to implement effective EdTech tools has evolved to be a strategic factor in workforce nimbleness, active learning and creativity. O'Neill et al. (2025) argue that virtual learning environments offer employees and learners chances to develop metacognitive and self-regulatory learning, which results in an in-depth comprehension and prolonged consequences of acquiring new capabilities. This is in line with the accordance of ESL which is continuing to gain momentum that EdTech is not only a delivery system of information but also creates autonomy, motivation and critical thinking skills which are required of learners in dynamic workplaces to drive their professional growth. Lu (2025) also highlights that although online learning platforms increase accessibility and flexibility, especially when it comes to a work situation, the learners usually encounter technological as well as motivational obstacles,

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which may impede the process, especially in the case of older or less digitally literate workers. In that way, introduction of EdTech in organizational training needs to involve the organizational supporting mechanisms like collaborations between peers, digital literacy, and managerial motivation to implement equitable engagement and long-term involvement.

In the professional education industry that bears a strong resemblance to corporate training setsups, EdTech usage has provided substantial and advantageous effects on learning results. As an example, Harerimana et al. (2025) have stressed that nursing education, particularly in informatics, has become better positioned through technology integration to enhance the development of competencies that enabled practitioners to keep up with the new demands of digital healthcare services. Likewise, Perez-Cualtan et al. (2025) exemplify that professional performance may be improved with the help of 3D technologies and immersive tools because experience, based on simulation, replicates the situation in the workplace and allows acquiring the necessary skills practically. In addition to content delivery, artificial intelligence (AI) is increasingly performing functions of tailoring training process, interpreting learning habits, and streamlining the structure of courses or other learning content to match the personal course of learning. The authors of the study conducted by Jobe (2025) identified that AI-inspired training tools used in the context of higher education institutions contributed to the flexibility of staff and quality of instruction, indicating the high relevance in terms of corporate training programs which are based on the continuous measurement of performance. Anything to add to this, Durbarry et al. (2025) report the significance of regulatory and ethical frameworks to govern the use of AI and EdTech to suggest sustainable adoption that involves explicit regulation to ensure data privacy and quality assurance.

With regard to organizational change, Mathivha and Nzama-Sithole (2025) disclose that organizational change initiatives in the digital transformation of the workplace, especially in higher learning institutions, have led to a significant enhancement in the adaptability and efficiency of employees, as well as their readiness to change using the technology. These discoveries are similar within corporate environments where good digital leadership and investment in the learning management systems (LMS) are positively related to workforce innovation and strategic responsiveness. In line with this view, Odediji (2025) shows that EdTech is positively related to the application of technological tools in institutional surveillance and general organizational performance; however, it is also important to note that EdTech has an amplifying effect on accountability and performance outcomes. Nonetheless, there are still challenges with regards to the equal access and incorporation of such technologies. According to Badiuzzaman et al. (2026), the digital adaptation of migrant and international employees depends on digital literacy, infrastructure, and organizational support, as other entities do in the global company, with digital competency being a condition of the right to participate in a professional development opportunity. Moreover, Izuchukwu (2025) substantiates that ongoing staff training, backed by technology, brings about not only an increase in actual individual performance but also by the results of companies, which supports the symbiotic relationship between the enhancement of the staff members and the performance of the company.

All these studies together form an effective body of evidence that educational technology is a central part of effective, inclusive, and adaptable programmes of employee training and development. The literature is consistent that EdTech as a strategy-driven tool with leaders as its facilitator is applied to support high performance and its sustainability during the continuous learning process through the interface that helps in reducing the gap between learning and its practical application. Nonetheless, there are still gaps in the interpretation of the extent of employee perceptions related to EdTech and their impact on engagement,

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satisfaction, and skills transferability in corporations. Thus, the study aims to test these interrelationships on the empirical basis by the means of the descriptive and correlational analyses to add a layer of insight into the ways in which EdTech tools and practices can maximize their effects on employees and organizational development.

RESEARCH METHODOLOGY

In this study, quantitative descriptive-correlational research design was used in order to investigate the connection between educational technology (EdTech) and employee outcomes in training and development. The design has been selected since it allowed the researcher to report on the prevailing conditions and also establish the level of association between the variables without controlling the research setting. The aim of the study was to determine the relationship of perceptions of employees in terms of usefulness of EdTech, engagement, satisfaction and improvement of their skills. This method was aligned with the past researches which applied correlation analysis to refute the effects of technology in professional learning and workforce development (Lu, 2025; O'Neill et al., 2025).

The sample population was employees that had been employed in organizations within the last two years that have incorporated the use of technology-based training programs. These organizations were a blend of industries such as education, business services and healthcare. A purposive sampling method was taken to achieve the direct experience of participants with EdTech platforms, i.e. online learning management systems, virtual classes, or AI-based training tools usage. One hundred and twenty employees were engaged to take part, with 102 respondents completing the survey giving response rate of 85 percent. It was proper since the sample size was sufficient to perform correlation analysis because the statistical norms indicated that it must have at least 80 individuals to depict moderate effect sizes at Significance level of 0.05 (Cohen, 1988). A structured questionnaire was used as a research instrument in data collection by the study. The researcher came up with the questionnaire and it was also validated by three experts in the field of educational technology and organizational psychology to ascertain the content accuracy and relevance. It consisted of two major sections. The demographic section was used to capture demographic information, such as the age, gender, education, department, and the number of years of professional experience of the participants. The second part was known as the EdTech Perception Scale and comprised twenty statements that were put on a five point Likert scale with 1 (Strongly Disagree) as the end point and 5 (Strongly Agree) as the end point. To evaluate four major constructs that can be applied to the study, the section was created to assess Perceived Usefulness of EdTech (e.g., "EdTech tools make training sessions more efficient), Learning Engagement (e.g., "I actively engage in teaching-supporting technology-based training activities), Training Satisfaction (e.g., "I am satisfied with the results of the training programs at my organization that are supported by technology use), and Perceived Skills Improvement (e.g., "I have improved my professional skills because of attending the technology-based training sessions). To ensure the reliability of instrument, Cronbach was used to make an overall reliability coefficient of 0.87 which is considered a high level of internal consistency and proves that the items successfully measured the intended constructs (Harerimana et al., 2025; Odediji, 2025).

ANALYSIS

The data set was also filtered and tested before doing the key statistical tests in order to comply with the assumption of the correlation with Pearson and the descriptive statistics. A total of 120 questionnaires that were given out were analysed, and 102 valid responses were obtained. Missing values, outliers, and inconsistency were checked on the basis of the data.

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None of the missing cases was greater than 5 percent per variable which is acceptable (Cohen, 1988). The score in Z- were assessed with the aim of identifying possible outliers, none of the scores was greater than +-329 meaning that all the responses fit within the range of normal distributions.

The test of normality was carried out using Skewness and Kurtosis values and graphical evaluation of the histograms. The skewness and kurtosis of all variables fell between -1.0 and +1.0, which confirms that it is approximately normally distributed (George and Mallery, 2019).

This validated the associated use of the parametric tests like the Pearson correlation. The normality test is shown in table 1 below.

Table 1

Variable	Skewness	Kurtosis	Distribution
EdTech Usefulness	–0.48	0.29	Normal
Learning Engagement	–0.37	–0.15	Normal
Training Satisfaction	–0.41	0.21	Normal
Skill Improvement	–0.33	–0.22	Normal

Scatterplots were generated for each pair of variables. The plots showed upward linear trends without significant funneling, confirming that relationships among variables were linear and homoscedastic, satisfying the assumptions for correlation analysis.

4. RELIABILITY ANALYSIS

To verify the internal consistency of the measurement instrument, Cronbach's Alpha reliability test was conducted. The overall reliability coefficient for all 20 items was $\alpha = 0.87$, exceeding the acceptable threshold of 0.70 (Nunnally, 1978). This confirmed that the scale items consistently measured the intended constructs. The reliability analysis is shown in table 2 below.

Table 2

Construct	No. of Items	Cronbach's Alpha (α)	Reliability Level
EdTech Usefulness	5	0.86	High
Learning Engagement	5	0.84	High
Training Satisfaction	5	0.88	High
Skill Improvement	5	0.85	High
Overall Scale	**20**	**0.87**	**High**

DESCRIPTIVE STATISTICS

Descriptive statistics as shown in table 3 below, were used to summarize the participants' perceptions of EdTech-based training. The analysis included measures of central tendency (mean) and dispersion (standard deviation) for each key variable.

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Table 3, Descriptive statistics

Variable	N	Mean (M)	Standard Deviation (SD)	Interpretation
EdTech Usefulness	102	4.26	0.68	High perception of usefulness
Learning Engagement	102	4.14	0.74	High engagement level
Training Satisfaction	102	4.20	0.71	High satisfaction
Skill Improvement	102	4.08	0.78	Perceived skill improvement

Respondents demonstrated strongly positive perceptions of EdTech in training and development. The mean values for all variables exceeded 4.0 on a 5-point scale, suggesting that employees viewed EdTech tools as effective for enhancing engagement, satisfaction, and skill acquisition. These results corroborate findings by Harerimana et al. (2025) and Pérez-Cualtán et al. (2025), who reported similar high acceptance of technology-mediated learning environments in professional development contexts.

Correlation Analysis

To explore the relationships among the study variables, the Pearson Product-Moment Correlation Coefficient (r) was calculated and shown in table 4 below.

Variables	1	2	3	4
1. EdTech Usefulness	1			
2. Learning Engagement	.54**	1		
3. Training Satisfaction	.59**	.61**	1	
4. Skill Improvement	.48**	.52**	.56**	1

Note: N = 102; p < .01 (2-tailed); ** denotes significance at the 0.01 level.

The outcomes of the correlation study showed that all the important variables that were observed during the research have strong and significant positive relationships. The connections between EdTech utilization and learning engagement (r =.54, p <.01) were found to have a positive correlation, meaning that those who perceived education technology as useful were more engaged in a training process. On the same note, usefulness of EdTech and training satisfaction (r =.59, p <.01) were found to be strongly correlated, indicating that employees who deemed the usefulness of EdTech to be high had a better experience with their training. The p-value (.01) and the correlation between EdTech usefulness and skills improvement (r =.48) have proven that those workers who indicated that they found EdTech useful also indicated that they perceived more improvement in their professional skills. Moreover, training satisfaction and learning engagement (r =.61, p <.01) were strongly correlated, which means that the greater training engagement, the greater are the levels of satisfaction with the learning process. At last, the training satisfaction and training skill improvement (r =.56, p <.01) were found to be positively associated implying that both satisfied employees in their training have felt more improvement in their skills. Following the results of the correlation, the correlation coefficients were between r =.48 and r =.61, which equated that the relationship among the variables was moderate to strong positive correlation (Cohen, 1988). These results suggest that the perceived utility of EdTech has a great impact on the engagement of employees, job satisfaction, and the development of skills, which altogether lead to organizational learning and growth objectives. The findings agree with earlier empirical studies, which show that technology-enabled learning processes lead to

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motivation, retention, and work readiness in professionals (Lu, 2025; Mathivha and Nzama-Sithole, 2025).

DISCUSSION

The current study has investigated the prediction of the use of educational technology (EdTech) in the training and development of employees with particular emphasis on the linkage between perceived usefulness, learning engagement, training satisfaction, and perceived skill improvement. Descriptive and Pearson correlation analysis was used to present the results of the study which indicated that the employees were very positive about EdTech with all the mean scores ranking above 4.0 on a 5-point Likert scale. The outcome of this study proven that EdTech was generally considered helpful, interesting, and profitable to professional development in the surveyed companies. These results are aligned with the findings of O'Neill et al. (2025), who stressed that virtual learning environments facilitate the development of metacognitive awareness and self-regulated learning, which are some of the main features of successful professional development. The correlation analysis indicated that, the positive relationships amongst all the key variables were statistically significant and positive. In particular, the researchers concluded that the perceived usefulness of EdTech was positively correlated with learning engagement (r = .54), training satisfaction (r =. 59), and skill improvement (r =. 48). It means that employees who felt the use of EdTech useful were more likely to actively engage in their learning, have been positive of their training experiences, and experience an increase in job-related skills. These results are in line with those of Harerimana et al. (2025), who have found out that technology-enhanced learning positively impacts motivation and professional competence in healthcare professionals, and Perez-Cualtan et al. (2025), who have found out that immersive technologies enhance the process of applied learning and learning skills. Moreover, a high positive correlation of learning engagement and training satisfaction (r =.61) confirms the idea that of a mediation between the technological usefulness and satisfaction as a result of engagement. The more the employees interact and are engaged in the digital learning activity, the more likely they will derive satisfaction out of the process. This conclusion reiterates the thesis of Lu (2025), who had posited that virtual educational settings are most effective when students are deemed to have appropriate support systems that will help them maintain their motivation and enthusiasm. Similarly, training satisfaction (r =.56) and skill growth were established to have positive correlation meaning satisfaction is one of the determinants in the perception of learning efficacy. The same is provided by Mathivha and Nzama-Sithole (2025), the authors are able to establish that digital transformation efforts increase employee satisfaction and readiness to perform with the help of effective leadership and institutional commitment.

The results confirm what other studies have contended in the past that EdTech adoption helps to make workforce more flexible and innovative (Durbarry et al., 2025; Odediji, 2025). The positive experiences of employees in terms of technology-based learning directly affect their professional interactions and readiness to implement new skills in working processes that lead to quantifiable increases in productivity and efficiency. Badiuzzaman et al. (2026) also have their findings supported as they emphasized that digital adaptation and skill acquisition are essential in order to integrate professionally in a contemporary and technologically-centered workplace. Accordingly, the research studies present some empirical evidence according to which EdTech is not just a technological resource but an enabling strategy of human capital.

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Nevertheless, although largely positive results were achieved, there are still a number of contextual challenges. Others reported some problems concerning digital literacy, disproportionate distribution of resources, and other lack of managerial support, which Lu (2025) found in participation of online learning in online courses. All these factors imply that to be successful over a long period of time, the implementation of the EdTech initiatives should include unceasing support, digital infrastructure, and non-discriminatory policies that would cater to the wide range of learning providers within the organization. Comprehensively, the research indicated that EdTech positively affects engagement, satisfaction, and perceived skill development, therefore, supporting the key contribution to better learning and performance outcomes in an organization. The findings contribute to the theoretical knowledge on the technology acceptance and training effectiveness and demonstrate an empirical interconnection between the perception employees hold about the usefulness and satisfaction to the skill development in the workplace scenarios.

CONCLUSION

This study was carried to the conclusion that educational technology is major and positive in improving the training and development of employees. A quantitative descriptive-correlational approach helped to prove that EdTech is viewed as an efficient way of enhancing engagement, satisfaction, and skill development by employees. It was statistically confirmed that perceived usefulness of EdTech highly predicted both engagement and satisfaction, which, in their turn, predicted perceived skill improvement strongly. The consequences of the results are two-fold. To begin with, EdTech is not a cost-cutting or a convenience-enhancing tool that should be considered by the organization as a strategic investment causing workforce capability and flexibility to increase. Organizations can instil the culture of constant professional development and innovation by introducing technology-enhanced learning into training programs. Second, institutional backing is necessary to make its successful implementation initiatives in terms of leadership commitment, digital literacy programmes and accessibility of resources to maximize its impact and the long run. Theoretically, the study adds to the research on digital learning and professional development because it empirically shows how engagement, satisfaction, and skill acquisition connect with each other in an EdTech context. In practice, it offers supportive information to the professionals working in the sphere of human resource development who want to create more engaging, data-driven, and outcome-driven training systems.

The further study must utilize longitudinal study or experimental approaches in the future in an attempt to provide causal relations as well as determining the effect of EdTech over time in the determination of performance outcomes. Cross-industrial and intercultural comparative studies can also contribute to a more profound understanding of the effect of the contextual factors on the success of the digital training programs. Finally, the study confirmed that educational technology has been recognized as a more important driver of employee growth, increased learning efficiency, learning engagement, and satisfaction as well as a factor in the overall organizational performance and readiness to innovate in the digital age.

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