

Emerging Trends in Training Knowledge Workers; New Economy

L.R.K. Krishnan (corresponding author) Professor, VIT University, Business School, Chennai, India E-mail: lrkkrishnan@gmail.com

S. Poorani

Assistant Professor Junior, VIT, Business School, University Chennai E-mail: pooranisundar14@gmail.com

S. Sawmya

Research Scholar, Business School, VIT University Chennai E-mail: sawmyask@gmail.com

Received: September 23, 2022	Accepted: October 18, 2022	Published: October 25, 2022
doi:10.5296/ijld.v12i4.20413	URL: https://doi.org/10.5296/ijld.v12i4.20413	

Abstract

In the complex, fast-paced world, a multigenerational workforce requires employees to adopt new technology and customized learning. By tailor-making the learning programs and learning strategies, organizations may create a diverse work culture that helps retain millennial employees. Various scholarly research papers were analyzed to understand the phenomena in the emerging trends in training with respect to knowledge workers in the new economy. Globalization demands superior quality of work associated with lower costs, improved performance, and time to market. A qualitative study has been undertaken over a period of 3 months, and the research findings helped analyze the new trends in training with respect to knowledge workers in emerging economies. The study also establishes a clear linkage between millennial learning needs, performance, and engagement. The finding of this study collaborates with other research contributions.

Keywords: Competency development, New generation workforce, Strategic training, Technologies, Training effectiveness



1. Introduction

India has become the talent hub of the world, with a significant global digital talent presence. Employees are keen to join a company where their skills and expertise are updated in today's environment. The outcome is that training is changing significantly and driving performance. As a retention tactic, many firms offer learning opportunities with the objective to enhance engagement. In this situation, employee certification through training is even more important than ever and shows competence in job-related areas.

In the knowledge economy, skilled workers are one of the most valued assets and must be exploited to maintain a competitive edge. Training all the way is beginning from orientation and induction to on-the job training for early settling in of employees, ensures productivity as per benchmarks. As a result of the new economy, technology makes it easier and less expensive for human employees to work assignments and relying on technology can increase productivity and competitiveness. Owing to technological advancements, companies have become more productive and competitive. However, increased productivity also results in some skills and jobs disappearing. Workers who are hired to do these new jobs will likely play an essential role in the new economy if they receive training.

Globalization demands quality requirements associated with lower costs, improved performance, and enhanced customer satisfaction. Learning and development make sure that the staff of the organisation can rapidly adapt to technology advancements and maintain high standards in accordance with business needs. Organizations may become inefficient if they fail to align their training programs with changing learning patterns.

Learning experiences and tools delivered by the organization may not be sufficient to enable knowledge workers to work effectively individually. It also has become increasingly difficult for HRD practitioners to support learning in the workplace as many new employees enter the organization with various learning disabilities and expectations. Training efforts have to holistically be delivered at the workplace keeping in mind individual aspirations, team requirements and organisation goals. Hence, the focus on business results must get established in the early days to ensure alignment.

Modern production techniques also improve attitudes, knowledge, and morale among workers. Sensitivity training can increase operational efficiency and open up new chances to increase labour productivity and enhance staff performance. (Automotive skill development council, 2021) indicates that advances in technology will help to boost productivity in the sector, resulting in rapid product and service advancements. Krishnan (2020) explains that the new economy requires greater agility from its workforce to adjust quickly to the shifting technology world.

Coro (2021) argues that technological change manifests strong path dependence and correlates with an increase in other types of wages, mainly synthetic knowledge workers. According to (Bellandi et al., 2020), when disruptive problems arise, knowledge workers and the types of knowledge bases that are prevalent in the local workforce have a significant impact on the direction of the regional growth path.



Meeting a modern-day knowledge network's key performance index (KPI) calls for a team effort to deliver sustained performance. According to (Sumbal et al., 2020), every industry has its unique type of employees, which need to be retained, emphasizing that context matters. Therefore, it is crucial to understand industry-specific knowledge.

Technology adoption helps reduce cost, and training & upskilling go a long way toward developing talent and upskilling them for business needs (Poorani & Krishnan, 2021).

Sebastien (2020) listed Key indicators of knowledge workers

- Focuses on thinking instead of doing physical work for a living
- The development of new products or services
- Problem-solving skills
- Ability to handle complex mechanisms independently
- Concentrate on quality rather than quantity
- Ability to work independently

Table 1. Learning style and preferences

Learning Style and Frederice					
Baby Boomers	Generation X	Millennials	Generation Z		
		Technologically			
Structure	Quick learners	sawy	Social		
Guidelines	Physical demonstration	Group Work	Multi taskers		
	Independent, Self-		Technology		
Detailed handouts	Paced	Experiential learning	savvy		
Lectures with note	Flexible learning	Structure and			
taking	schedules	Guidance	Digital natives		
Personal experiences	Lean only relevant				
with subject matter	matter	Immediate feedbacks	Interactive		
Caring positive			Mobility and		
environment	Competitive	Multitask efficiently	Multiple reality		
Technology many be					
foreign	Individualistic	Trial and error	Trial and error		

Learning Style and Preference

Source- Eckleberry (2011), Tracy and Fernanda (2018)



Refer Table 1 to understand about the learning styles and preferences of multi- generation work force

To engage in learning, Baby Boomers prefer structured environments and clear guidelines. As they were not readily accessible to computers and the internet during their early educational experiences, they prefer positive reinforcement and a caring learning environment. A kinaesthetic learner who enjoys hands-on projects and live experience tends to learn by experience. A flexible learning environment where workers can manage their time and learn at their own pace is beneficial and is what is largely expected by the new generation. The majority of the new generation is largely interested in learning relevant to the current context, what will directly benefit them in the short term. This prevailing learning preference is currently the trend with the new millennial that prefers short term to long term in terms of their immediate learning goals.

In comparison to Baby Boomers and Generation X, millennial are more technologically savvy. Integrating technology into all learning opportunities is appealing to this group of learners. Millennial hop jobs more frequently in search of better, more competitive jobs with higher salaries. Once they feel that their current role, technology, or workplace is no longer adequate, they look for new opportunities.

Adapting to the wants and preferences of younger generations in the workforce is significant. The desire and drive to learn will propel them forward and make them more valuable to the company (Thejovathi & Krishnan, 2020). The following trends have a substantial impact on workplace training and Development: Jobs are getting more specialised, the ageing workforce is driving a need to find fresh talent, and the growth and accessibility of knowledge on the Internet have raised the requirement for the capacity to discern truth from opinion. Knowledge workers are very quickly becoming a new reality. All of these factors point to the growth of the knowledge economy and its inevitable integration into the modern business structure (Bhattacharjee, 2017).

Employers across India require almost the same professional skills from the younger generation across regions and sectors. Organizations need to primarily focus on assessments, learning processes, technological skills, develop young minds in creativity, analytical and problem-solving skills. In many organizations, the quality of performance management has a direct impact on employee retention. Individuals in an organization are distinct in terms of their personality, experience, skills, and capability.

Acquiring the skill requirement for companies and individual development is essential to remaining competitive. Suppose organizations do not align with the changing patterns of learning. In that case, the training programs may become ineffective, time-consuming, and expensive, affecting the productivity and performance of individuals and the organization. Employees need to receive the most up-to-date training to ensure the best learning experience. As a result of technology's ability to offer competitive pay rates, flexible work schedules, career options, and other benefits, job opportunities have expanded globally. As a result, businesses keep an eye on their workers' satisfaction, commitment, engagement, work-life balance, and training, and they make necessary policy adjustments.



A corporate culture of learning, emphasis on knowledge, commitment to employee growth, strong belief in performance, improvement through learning and development, and continuous investment in training ensure a fully qualified workforce for the future (Elnaga & Imran, 2013). Also, organisations tend to develop adaptive knowledge to redefine their organizational values, goals, and strategies that will add productivity to the business enterprise. A working environment that encourages knowledge-sharing will improve morale and employee satisfaction so that the organization can reduce employee retention issues (Mothlago, 2012). Thus, Today's workforce is a complex proposition with an inert desire to stay ahead of the learning curve and access the best-in-class tools and tackles for enhancing productivity and performance (Khan et al., 2021). Providing employees to fail fast but succeed eventually is gaining ground in the knowledge world (Almahamid, 2018).

2. Range of Past Studies

As the world economy becomes increasingly technology-driven, entrepreneurial, and knowledge-based, success will be determined increasingly by products and services that combine knowledge, technology, creativity, and innovation. Worker skill levels and job types are getting up skilled ir respective of the educational level and type of work they perform. White-collar, highly skilled jobs are fuelling employment growth. Skills growth is not just a phenomenon in the knowledge-based industries. It encompasses a variety of sectors and professions (Crystal, 2017).

An organization to be successful today is possible only with a diverse, innovative, insightful, and knowledgeable workforce. Business environments with volatility, uncertainty, complexity, and ambiguity, often referred to as VUCA require a high level of self-efficacy, contextual awareness, adaptability, and creativity (Sandberg, 2022). The organization's most valuable asset - its people - can only be developed through training and education. Various training programs and motivational techniques are used by organizations to engage employees and motivate them to perform at their best (Batool et.al.,2021).

There is a shift in the new economy, pre-planned responses and behaviours and toward more cerebral work, so training and development program is vital for the current generation of workers to possess a growing set of competencies in situation analysis, understanding of various situations, problem-solving, and critical thinking (Muzam, 2022). Technology and the changing environment drive the millennial generation to explore new directions in sectors like, artificial intelligence, analytics, block chain, big data, cloud computing, the Internet of Things, machine learning, and others developing in the field of data science. Millennial demand that their employers educate them on cutting-edge technologies and allow them to delve deeper into those fields. People frequently change professions when they discover that their current employer is not adapting to the changing environment or providing them with the chance to master new technologies and use their talent. In the work market, they discover excellent opportunities based on their wants and requirements (Deoras, 2019). Millennial value technology, businesses that are up to date offering scope for innovation and creativity and meeting most of their demands. Concerning luring and keeping them, those organizations may have an advantage (Megan, 2018).

Macrothink Institute™

(Tobias, 2018) states that workplace digitization attempts to boost knowledge workers' output and level of satisfaction. Workers from younger generations want transparency, self-reliance, flexibility, and personal independence. The preference of the workers changes according to the requirement. Learning with technology gives employees a rich experience and rewards companies' benefits. Traditional classroom training and video conferencing make the learning process synchronous, which is time-bound and may not always be successful in transferring learning on the job (Thejovathi & Krishnan, 2020).

2.1 Training Practices in the New Economy

The industry is going through a paradigm shift due to economic transformation and technological development. Hence, up skilling, undergoing sophisticated training is necessary for remaining competitive in the new economy. These skills help to increase self-esteem, self-confidence, and a sense of empowerment among employees. Providing need-based training plays a crucial role in employee development. i.e., training aims to enhance employees' knowledge, skills, and attitudes to be more productive and perform better in the workplace. Investing in talent attracts talent, trains talent to retain, builds a culture of innovation, boosts morale, minimizes errors, and increases productivity and profits for any organization. In addition, T&D encourages creative thinking in the workplace and guides out-of-the-box thinking. Since it shows a halo effect or positive influence of training, measuring training effectiveness has become a crucial technique to increase employee engagement and retention.

By immediately boosting a company's worth by adding to its intangible assets, training and development can aid in its competitiveness (Raymond and Amitabh, 2019). The training progression can also be conducted depending on the size, requirement, and type of the organization, like coaching, mentoring, leader-to-leader development, group-based leadership development, job rotation, job shadowing, etc. Courses that combine online and face-to-face learning have had higher outcomes in terms of transferring knowledge on the job than either purely online or face-to-face instruction (Aidah, 2013). Thus, adopting new procedures associated with Industrial 4.0 technologies increases the demand for people with specialized technical abilities who can communicate with complex digital infrastructures (Bongomin et al., 2020).

The young generation considers the virtual and physical worlds to be complementary to one another and can quickly flip between them because they are technophiles. They not only use the Internet but also actively contribute to its creation and management. Although Gen Z is proficient at multitasking, they have trouble recalling information and staying focused for extended periods. Due to the significant distractions in the virtual world, their attention span is limited. The need for adaptability, readiness to embrace change, and drive for change is the new normal (Anna, 2018).

Studies and trials were needed to determine the use and efficacy of virtual reality (VR) and augmented reality (AR) technologies due to their rapid expansion. According to (Popov et. al., 2021), VR and AR technologies are wonderful resources for education in the digital age. Their practical, approachable nature can be utilised to simulate difficult circumstances



demanding specialist knowledge and flexible thinking. When GPS-enabled portable devices can access augmented information that deals with an external site like customer data centres, role-playing techniques with AR provide participants with a real-time experience (Peter et.al., 2020).

With mixed reality (MR), users can interact with real-world objects and virtual objects as well as real-world objects and elements (Charles et al., 2005). In a nutshell, it combines a variety of synchronized real-time senses with interacting with real and virtual things in a simulated world. AR and VR are combined in MR to incorporate elements of both the real and virtual worlds (Peter et al., 2020).

While delivering information at the right time, place and offering rich content with computer-generated 3D graphics, augmented reality (AR) can improve the effectiveness of education, training in academic and business environments. AR may be more in line with constructivist educational philosophies, which emphasise student agency over their learning, and it may open up prospects for more authentic teaching and learning methods (Lee, 2012).

2.1.1 Immersive Training

Pre-training significantly improved the outcomes of knowledge retention, transfer, and self-efficacy. Immersive training develops interaction between medium and method. Immersive Virtual Reality (IVR) media can be a successful learning tool for the pre-training strategy. In other words, having a high level of prior knowledge makes it possible for the affordances of presence and agency to promote learning by enabling learners to meaningfully interpret their experiences throughout the IVR (Makransky & Petersen, 2021).

2.1.2 Virtual Training

The training function needs to be a game-changer by reviewing current procedures, redesigning VT procedures, evaluating the effectiveness of the training function, monitoring participant progress, redesigning the knowledge management system, and preparing managers and staff for a paradigm shift in training culture (Rajan & Krishnan, 2021a). The leaders of the organisation frequently create new structures in order to efficiently promote VT. Aligning individual skills with corporate objectives is crucial for achieving productivity, improving organisational performance, growth, and excellence (Ken, 2012). The ultimate outcome will be increased growth, excellence, and performance improvement. Quick adaptation is required to unlearn, re-learn, up-skill, and achieve competency in this new paradigm and norm.

2.1.3 Hybrid Training

A hybrid training program enables many geographically distributed learners to participate in training while adopting well-known best practices, such as space, interactive, and inter professional training. Additionally, curricular content that is difficult to offer digitally could be delivered by using a hybrid delivery model to foster community throughout an organization (Kusters et al., 2020).



2.1.4 Case Study

The case studies share descriptive events with the trainees to get them to decide critically and in a way that will help them complete their responsibilities successfully, apply and develop new ideas, manage or enhance procedures, and resolve issues at work. This approach adopts a practical mind-set.

In a case study, the trainees refer to the course material and share their feedback about the relationship between their training and regular job duties. Feedback about the training program enables the trainer to modify the curriculum and consider changing conditions (Skewes et.al.,2017).

2.1.5 Adaptive Training

The adaptive training system promotes the growth of learner autonomy by allowing trainees to select active self-learning in tandem with the system. Smart devices and intelligent technologies enable an innovative learning environment to successfully promote personalized and adaptive learning development in line with the trend of accelerating the integration of both (Kirschner, 2015).

Learning through immersive experiences is a powerful way to enhance learners' knowledge and skills. By providing artificial, digitally created content and environments that accurately simulate real-life situations, new skills and techniques can be learned and mastered.

2.1.6 Gamification

The new advancements are changing more rapidly in recent times in the set of experiences how individuals live, including how they connect and how they work, which subsequently likewise influences essentially the way that associations work and cooperate both internally and externally with the general public (Cardador et al., 2017). From this perspective, gamification utilizing computer elements becomes an asset that can be investigated in training and development programs. (Simeia et. al., 2021). A qualitative and quantitative study was conducted to determine perceptions of efficiency and measurable outcomes in the gamification process in training and development activities (Santos et al., 2021).

It also helps the workers enjoy what they learn through real-time games. So that the learners enjoy training, feel engaged, and want to keep learning. It also helps

- To improve learners' engagement
- Empowers learners to control their learning outcome
- Promote knowledge sharing environment
- Drives behaviour change

The cutting-edge technology that strongly influences the majority of technologically savvy newcomers is pushing continuous learning and updating on new technologies. Gamification features like leader boards, points, levels, and badges can significantly increase participant engagement, motivation, and participation in a learning environment. It fosters and promotes



active investigation into finding solutions to challenging problems (Faiella, 2015).

2.1.7 Collaborative Work Training

The goal of the collaborative training method is to improve performance and productivity, foster more loving, supportive, and committed relationships, and uphold excellent psychological health, social competence, and self-esteem by bringing together groups of learners to solve problems, complete tasks, or produce products together (Laal & Ghodsi, 2012).

Retaining technical staff members while also maintaining their loyalty and commitment to the company is a challenging issue for any firm. High technology businesses are finding it difficult to hold onto their valued technical staff due to a scarcity of skilled candidates and competitive recruitment strategies used by the competitors. As a result, the majority of employers view technical staff as assets who, via their dedication, confidence, adaptability, and high calibre skills and knowledge, may provide a source of competitive advantage (Ahsan, 2013).

Therefore, training and developing employees to compete in a fiercely competitive market and an ever-changing business environment is vital. It paves the way for any organization to attract talents, train to retain, build an innovative work culture, boost morale, reduce the chances of employee errors, ensure job satisfaction, and increase productivity and profits. Additionally, training and development promote workplace creativity and direct to unconventional thinking techniques. (Arwab et.al., 2022) states training and development programs are prominent organizational activities to make employees talented, motivated, retained, aware of emerging tools, techniques, and the market's flow.

3. The Objective of the Study

- Analysing the emerging trends in training in the knowledge segment
- To evaluate the effectiveness of training on employee performance
- Analysing the learning preferences of new generations of workers in the knowledge segment



4. Conceptual Framework



Figure 1. Conceptual framework for trends in training with respect to knowledge workers

Refer to Figure 1, which depicts today's business world; graduates possess a great deal of technical knowledge. However, most lack the interpersonal and social skills necessary for managing people. A skill training program can transform an interpersonally incompetent manager into a highly effective leader. (Thejovathi & Krishnan, 2020) states the new generation is motivated to learn, engage, and be productive with high expectations from the organization compared to the previous generations. It is paramount for organizations to align the strategies, processes, and people practices to attract, develop, and retain talent from all cross-sections. Technology has the ability to limit adverse implications by increasing production, efficiency, and cost savings; decreasing product waste and resource consumption; and measuring, analysing, and tracking progress.

The employees' learning preferences change according to their characteristics and job preferences. Employees acquire skills and knowledge of the latest technologies, resulting in improved production and employee engagement, ultimately leading to a sustainable culture. To guarantee that these people are strategically trained and developed to adapt to any changes in the business environment, numerous methodologies are used to assess trends in training programmes using a variety of strategies. Through the availability of tools and a platform, organizations encourage knowledge workers to use their ideas, creativity, knowledge, and experience as the source and motivator of organizational development. Secondly, knowledge workers have been in a state of self-development and constant updating of knowledge for a long time, equivalent to constantly injecting new life into an organization whose development



determines the future direction and trend of the enterprise (Zhan et al., 2014).

5. Knowledge workers in the New Economy

Knowledge workers play an essential role in the development of business. (Sebastien, 2020b), states as the term "knowledge worker" is a iteration of the "white-collar worker," a term invented by Upton Sinclair in the 1920s to label people who work in the office instead of working as physical laborers; Knowledge workers use analytical, theoretical, or other high-level knowledge to generate services or goods, typically online. They frequently are able to obtain this knowledge through prescribed instruction, such as college or professional certification. (Du toit, 2014) states changing work conditions have resulted from the knowledge economy, which offers both opportunities and challenges to knowledge workers. To meet the competitive work culture, training will be provided for gaining new competencies and skills needed for a job. Learning how to use specific tools or equipment in the real world to acquaint them with the culture and objectives of the organization

To improve a company's success, employees must possess key work performance skills. They offer suitable training techniques such need-based training, on-the-job training, leadership training, virtual training, web-based training, and e-learning, among others.

A surprising way for any business to assess and grow individuals, teams, and entire organization is through feedback in training and development. It gives a detailed perception into what learners are participating in and gives us an in-depth view of the training courses without having to attend the sessions. People learn particular competencies more precisely and quickly through competency-based training. It implies that they can advance through the hierarchy of capability more rapidly than conventional training techniques. By intelligently gathering feedback from each walkthrough training and determining where the greatest content production efforts will yield the best outcomes to ensure greater response rates, digital adoption platforms assist in measuring the success of training (in-app).

Jatinder (2018) states that perceived investments in employee development (PIED) will result in employee engagement and skilled knowledge workers.

.Technology	People handling	Leadership
Business Acumen	Team work	Presentation
Communication and interpersonal skill	Intellectual learning skill	Management

Table 2.	Competencie	es of the kno	owledge worker
	1		0

Refer Table 2 to understand about the competency requirement for knowledge worker. Businesses can determine the strengths and weaknesses of individuals, teams, and



organizations by using feedback in training and development. People learn particular competencies more precisely and quickly through competency-based training. It implies that they can advance through the hierarchy of capability more rapidly than conventional training techniques.

A role-based skill benchmarking system enables HR professionals to select the most suitable candidates for employment. Understanding knowledge workers' learning goals is crucial to retaining them long-term. Employees within an organization can benefit from learning from each other by developing an internal talent marketplace. Identifying knowledge and skills gaps, nurturing individual potential, and implementing essential workforce training techniques are critical for the management.

Trends and technology have always impacted corporate training and development. Organizations have been forced to develop their workforces through LMS-based course catalogues, integrated personnel management, and continuous learning in recent decades due to technical advancements in learning platforms (Josh, 2018). Employees expect firms to offer immediate technical help, precise information, and prompt solutions to increase their productivity at work in light of shifting trends. In essence, Gen Z workers' learning expectations are to learn while doing their jobs.

To develop an environment that offers a variety of learning modalities that appeal to contemporary learners, progressive learning and development teams shall embrace both informal and formal programs. As a result, the business innovates new technology, material, and ways to improve learners' experiences and training programs (Kieran, 2017).

6. Changing Employee's Behaviour at Work

Knowledge workers are exposed to multiple technology tools, platforms, and environments to perform their work which is far distinct from the established practices over the years to develop innovation and sustainability (Kuzma et.al., 2020). (Coetzee,2016) asserts that proactive change-oriented employee behaviour that is made possible by the use of cutting-edge technologies is crucial for both corporate and individual success in the international knowledge-based economy. The workplace has experienced a constant change in employment needs as a result of the increased technology advancements and innovation and managers can address the career development needs of employees in the workplace by adopting new technologies. Thus, changing behaviour and its outcome on performance are directly correlated with emerging and path-breaking technologies. Companies need the right organisational structures, a qualified workforce, and competent management to adapt and maintain competitiveness in response to shifting consumer demands and technological change. Both the required sort of labour and the structure of work are being significantly impacted by these changes.

Changing employee behaviour at work are getting highlighted owing to the changing work practices of the employees i.e., changing work practices such as digitalization, technology, and automation has bought changes in employee behavior at work. Thus, training and development initiatives should be regularly reviewed to ensure that they align with the



millennial workforce's needs and preferences (Everwise, 2017).

7. Theoretical Contribution

Skill training magically transforms every incompetent interpersonal employee into a highly effective leader. The management guru (Drucker, 1999) states success in the economy comes to those who know themselves – their strengths, their values, and how they best perform. He coined the word knowledge workers and developed the duckers management theory. Innovations influence stated new economy changes. (Alvaro et, al., 2021) Decentralization, prioritizing knowledge work, management by objectives, and smart goals are the tenets of drucker's management theory. Drucker's strategy enables managers to empower staff members, enhance corporate culture, promote creativity, boost productivity, foster an ethical workplace, and ultimately achieve business success.

He also came up with the knowledge theory in 1966; according to Drucker, workers were assets rather than liabilities, and he valued them. In his view, knowledgeable workers are essential to any modern economy. People are an organization's most valuable resource, so managers are responsible for preparing them through training, development, and continuing education. Additionally, they should be freed to perform in networks rather than being confined to strict hierarchies. (Drucker et al., 2008).

8. Limitation

A qualitative study has been undertaken to examine the phenomena, new-generation workers, and learning practices. Knowledge workers in the industry were concentrated for the study. Specific industries and cities were not selected for the study, and secondary data taken for analysis

9. Scope of Future Research

Technological trends have been analysed in the study; there is scope for analysing the other aspects. There is also room for extending the scope of research across other industries.

10. Conclusion

The study investigated the preferences of millennial in using cutting-edge, path breaking technologies in their day-to-day work, enhancing productivity and performance. The findings established the direct correlation between the learning preferences, appetite, style and curve of the millennial using latest technology at work. The pattern established, clearly indicates the use of technology tool as a significant aid to performance enhancement and engagement. The study further goes on to establish the importance of technology training for the new generation. The findings indicate the effectiveness of training in the job performance of the talent in line with the technological investment in the industry. The study is in the sink with the other scholarly literature on the subject.

11. Managerial Implications

The new generation workforce is largely demanding innovative and creative learning solutions to cater to the changing environment. To keep pace with this emerging trend and



technology the organization leaders, HR, T&D professionals, and employees are expected to harness the power of digital technology and its various applications, tools with appropriate pedagogy, for enhancing people development. The managers have to adopt various learning styles, attitude that depicts positive behaviour at work to ensure training is effective (Rajan, Krishnan, 2021b).

References

Ahsan, N., Fie, D. Y. G., Foong, Y. P., & Alam, S. S. (2013). Relationship between retention factors and affective organisational commitment among knowledge workers in Malaysia. *Journal of Business Economics and Management*, 14(5), 903-922. https://doi.org/10.3846/16111699.2012.701226

Automotive skill development council. (2021). Training and development downloaded on 1-8-2021

Almahamid, S. O. U. D. (2018). Knowledge management processes and workforce agility: a theoretical perspective. *International Journal of Management and Applied Science*, *4*(7), 28-33.

Turriago-Hoyos, A., Thoene, U., & Arjoon, S. (2016). Knowledge workers and virtues in Peter Drucker's management theory. *Sage Open*, 6(1), 2158244016639631. https://doi.org/10.1177/2158244016639631

Anna, D. (2018). The characteristics of Generation Z. New trends in management, "e-mentor" s, 2(74), 44-50. https://doi.org/10.15219/em74.1351

Arwab, M., Ansari, J., Azhar, M., & Ali, M. (2022). Exploring the influence of training and development on employee's performance: Empirical evidence from the Indian tourism industry. *Management Science Letters, 12*(2), 89-100. https://doi.org/10.5267/j.msl.2021.10.004

Bellandi, M., Chaminade, C., & Plechero, M. (2020). Transformative paths, multi-scalarity of knowledge bases and Industry 4.0. *Industry*, 4, 62-83. https://doi.org/10.4324/9780429057984-4

Bhattacharjee, S., & Mukherjee, S. (2017). Modern trends and practices in training and development: An Overview, Redefining Business vision issues and challenges. *Marketing and Human resources, 2*.

Batool, N., Hussain, S., Baqir, M., Islam, K. A., & Hanif, M. (2021). Role of HR Technology and Training for the Development of Employees. *International Journal of Business and Management Future*, *5*(1), 1-13. https://doi.org/10.46281/ijbmf.v5i1.1051

Bongomin, O., Ocen G. G., Nganyi, E. O., Musinguzi, A., & Omara, T. (2020). Exponential disruptive technologies and the required skills of industry 4.0. *Journal of Engineering*. https://doi.org/10.1155/2020/4280156

Cardador, M. T., Northcraft, G. B., & Whicker, J. (2017). A theory of work gamification:



Something old, something new, something borrowed, something cool? *Human Resource Management Review*, 27(2), 353-365. https://doi.org/10.1016/j.hrmr.2016.09.014

Hughes, C. E., Stapleton, C. B., Hughes, D. E., & Smith, E. M. (2005). Mixed reality in education, entertainment, and training. *IEEE computer graphics and applications*, 25(6), 24-30. https://doi.org/10.1109/MCG.2005.139

Coetzee, M. (2016). Adaptive behaviour in the workplace: Psycho-social career preoccupations and openness to technological change. In V. Martin (Ed.), *Career Development: Theories, Practices and Challenges* (pp. 63-78). New York: Nova Science Publishers, Inc

Coro, G., Plechero, M., Rullani, F., & Volpe, M. (2021). Industry 4.0 technological trajectories and traditional manufacturing regions: the role of knowledge workers. *Regional Studies*, 55(10-11), 1681-1695. https://doi.org/10.1080/00343404.2021.1934433

Crystal, W. (2017). Are all workers "knowledge workers"? New Economy knowledge workers - Part 1, Michigan State University Extension. Retrieved from https://www.canr.msu.edu/, Downloaded on 3-8-2022

Deoras S. (2019). Data Science Job Satisfaction: What Employers Are Doing To Nurture Employees. Retrieved from analyticsindiamag.com/data-science-job-satisfactionheres-what-employers-are-doing-to-nurtu re-their-employees

Drucker, P. F., Collins, J., Kotler, P., Kouzes, J., Rodin, J., Rangan, V. K., & Hesselbein, F. (2008). *The Five Most Important Questions You Will Ever Ask About your Organization*. San Francisco: Jossey-Bass.

Du Toit, A. S. (2014). Role of knowledge workers in the knowledge economy: Some empirical evidence from South Africa. *Innovation: journal of appropriate librarianship and information work in Southern Africa, 2014*(49), 90-103.

Everwise. (2017). *Building a Talent Development Program for Millennials*. Retrieved from www.geteverwise.com/talent-development/building-a-talent-development-program-for-mille nnials/

Elnaga A., & Imran, A. (2013). The effect of training on employee performance. *European journal of Business and Management*, 5(4), 137-147.

Eckleberry-Hunt, J., & Tucciarone, J. The challenges and opportunities of teaching "generation y". *J Grad Med Educ.*, *3*(4), 458-61. https://doi.org/10.4300/JGME-03-04-15

Faiella, F., & Ricciardi, M. (2015). Gamification and learning: A review of issues and research. *Journal of E-Learning and Knowledge Society*, *11*. 13-21.

Jatinder, J. K., Pandey, J., & Varkkey, B. (2018). Examining the role of perceived investment in employees' development on work-engagement of liquid knowledge workers: Moderating effects of psychological contract. *Journal of Global Operations and Strategic Sourcing*.



Josh, B. (2018). A New Paradigm For Corporate Training: Learning In The Flow of Work. Retrieved from https://joshbersin.com/2018/06/a-new-paradigm-for-corporatetraining-learning-in-the-flow-of-work

Ken,B.(2021).Retrievedfromhttps://resources.kenblanchard.com/blanchard-leaderchat/no-one-best-Leadership-style

Khan, N. U., Wu, W., Saufi, R. B. A., Sabri, N. A. A., & Shah, A. A. (2021). Antecedents of sustainable performance in manufacturing organizations: a structural equation modeling approach. *Sustainability*, *13*(2), 897. https://doi.org/10.3390/su13020897

King, K. (2017). Millennial learning myths and misconceptions prescriptions for a modern learning strategy. Retrieved from www.iitd.ie/Portals/0/Knowledge%20Centre/Skillsoft_whitepaper_Millennial_Learning_Myt hs and Misconceptions.pdf

van Meeuwen, L. W., Brand-Gruwel, S., Kirschner, P. A., de Bock, J. J., Oprins, E., & van Merriënboer, J. J. (2013). Self-Directed Learning in Adaptive Training Systems: A Plea for Shared Control. *Technology, Instruction, Cognition & Learning*, 9(3).

Kusters, I. S., Gregory, M. E., Bryan, J. L., Hysong, S. J., Woodard, L. D., Naik, A. D., & Godwin, K. M. (2020). Development of a Hybrid, Interprofessional, Interactive Quality Improvement Curriculum as a Model for Continuing Professional Development. *Journal of Medical Education and Curricular Development*, *7*, 238212052093077. https://doi.org/10.1177/2382120520930778

Kuzma, E., Padilha, L. S., Sehnem, S., Julkovski, D. J., & Roman, D. J. (2020). The relationship between innovation and sustainability: A meta-analytic study. *Journal of Cleaner Production*, 259, 120745. https://doi.org/10.1016/j.jclepro.2020.120745

Krishnan, L. R. K. (2020), Review of Certification as a Tool for Development. *International Journal of Research in Computer Application and Management*, *10*(6), 6-13

Laal, M., & Ghodsi, S. M. (2012). Benefits of collaborative learning. *Procedia - Social and Behavioral Sciences*, *31*, 486-490. https://doi.org/10.1016/j.sbspro.2011.12.091

Lee, K. (2012). Augmented reality in education and training. *TechTrends*, 56(2), 13-21. https://doi.org/10.1007/s11528-012-0559-3

Makransky, G., & Petersen, G. B. (2021). The Cognitive Affective Model of Immersive Learning (CAMIL): a Theoretical Research-Based Model of Learning in Immersive Virtual Reality. In *Educational Psychology Review* (Vol. 33, Issue 3, pp. 937-958). Springer. https://doi.org/10.1007/s10648-020-09586-2

Megan, W. (2018). *Turnover and retention rates for Millennials in the workplace*. Retrieved from business.dailypay.com/blog/turnover-rates-for-millennials

Mothlago, S. M. (2012). *The Acceptance of technology- based knowledge management systems by knowledge workers*. DISSERTATION- [Unpublished]: University of Johannesburg.



Retrieved from: https://ujdigispace.uj.ac.za downloaded on 5-8-2022

Muzam, J. (2022). The Challenges of Modern Economy on the Competencies of Knowledge Workers. *Journal of the Knowledge Economy*. https://doi.org/10.1007/s13132-022-00979-y

Nassazi, A. (2013). Effects of training on employee performance: Evidence from Uganda.

Peter, A. H., Alexandra, D. K., Jessica, C., Mica, R. E., Suzanne, M. B., Ben, D. S. (2020). The Effects of Virtual Reality, Augmented Reality, and Mixed Reality as Training Enhancement Methods: A MetaAnalysis. *Human Factors The Journal of the Human Factors and Ergonomics Society*, DOI- 10.1177/0018720820904229.

Peter, F. D. (1999). Managing oneself, Harvard Business Review (March-April) (Page-65)

Poorani, S., & Krishnan, L. R. K. (2021). Manufacturing Technology Trends in Auto Sector Guiding Skill Enhancement and Employee Retention. *Indian Journal of Training and Development*, 14.

Popov, O. O., Iatsyshyn, A. V., Iatsyshyn, A. V., Kovach, V. O., Artemchuk, V. O., Gurieiev, V. O., ... & Kovalenko, V. V. (2021). Immersive technology for training and professional development of nuclear power plants personnel. *CEUR Workshop Proceedings*. https://doi.org/10.31812/123456789/4631

Rajan, S., & Krishnan, L. R. K. (2021). Pandemic: case study of effectiveness of virtual training in it organisations-Bangalore, India. *Journal of the International Academy for Case Studies*, 27(6), 1-12.

Raymond, A. N., & Amitabh, D. K. (2019). *Employee training and development* (P. 15). mc Graw Hill Education (India) Private Limited.

Sandberg, B., Stasewitsch, E., & Prümper, J. (2022). Skills Development through Virtual Art-Based Learning: Learning Outcomes of an Advanced Training Program for Project Managers. *Educ. Sci.*, *12*, 455. https://doi.org/10.3390/educsci12070455

Santos, S. A., Trevisan, L. N., Veloso, E. F. R., & Treff, M. A. (2021). Gamification in training and development processes: perception on effectiveness and results. *Revista de Gestao*, 28(2), 133-146. https://doi.org/10.1108/REGE-12-2019-0132

Sebastien, R. (2020). *The Year of The Knowledge Worker, Forbes Technology Council.* Retrieved from https://www.forbes.com/

Skewes, J., Bat, M., Guenther, J., Boughton, B., Williamson, F., Wooltorton, S., Marshall, M., Dwyer, A., & Stephens, A. (2017). Case studies of training advantage for remote Aboriginal and Torres Strait Island learners. Retrieved from https://www.linkedin.com/company/ncver

Sumbal, M. S., Tsui, E., Durst, S., Shujahat, M., Irfan, I., & Ali, S. M. (2020). A framework to retain the knowledge of departing knowledge workers in the manufacturing industry. *Journal of Information and Knowledge Management Systems*. https://doi.org/10.1108/VJIKMS-06-2019-0086



Kissmer, T., Knoll, J., Stieglitz, S., & Groß, R. (2018). Knowledge workers' expectations towards a digital workplace. Conference: Americas conference on information systems 2018 At: New Orleans.

Francis, T. & Hoefel, F. (2018). True Gen': Generation Z and its implications for companies. *McKinsey & Company*, 12.

Thejovathi, & Krishnan, L. R. K. (2020). Gen Z: A case study of Learning Preferences and Organizational practices., *Journal of Productivity Management*, *XIV*(11), 266-276

Thejovathi, Krishnan, L. R. K. (2020) Learning Preferences of Millennials in R & D Work Environment. *International Journal for Research in Commerce, IT and Management, 10*(6), 1-6.

Zhan, H., Peng, L., Ma, Y., & Lin, J. (2014). The Research on Characteristics of E-Commerce Enterprises' Knowledge Workers and Their Motivating Factors. *25th Australasian Conference on Information Systems*, 8th -10th Dec 2014, Auckland, New Zealand

Copyright Disclaimer

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/).