

PANDEMIC: CASE STUDY OF EFFECTIVENESS OF VIRTUAL TRAINING IN IT ORGANISATIONS- BANGALORE, INDIA

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ABSTRACT

Pandemic has brought in revolutionary changes in the dynamics of work, virtual training, recruitment, and on-boarding. Post pandemic, organizations may enforce 30-40% of the workforce to work from home (WFH), and some segments of employees are also comfortable with such WFH arrangements due to various compulsions. Organizations also feel some of their operations can be comfortably executed working from home that can improve operational efficiency. Most organizations are at the learning phase to develop a WFH practice and its administration. In order to add to the experience of some organizations and to guide trainers, business managers, and leaders on Virtual Training, this study was attempted. This study was also motivated as we came across many organizations trying new training methods on a virtual platform and unable to gather its efficacy, training effectiveness, or ROI. This encouraged the researchers to dwell in the deep, study current practices of the target organizations by seeking first-hand inputs and suggest remedial measures for improvements. The data was collected from a leading Information technology organization based in Bangalore, India, by administering the questionnaire on the target audience and followed by focussed interviews with trainers, business managers, and participants. The empirical evidence collaborated with other literary conversations. Results indicated that the direct impact of IT infrastructure and employee engagement did not have enough evidence on the effectiveness of virtual training at a 95% confidence level.

Keywords: Work from Home (WFH), Work From anywhere (WFA), Virtual Training (VT), Pedagogy, Alignment, Employee Engagements (EE), Hybrid Work System (HWS)

INTRODUCTION

The Covid-19 pandemic situation and the need to execute work from home practice, coordination, and net-working from home will be the new norm. Work from home and Virtual training has become a new trend, especially for IT organizations. WFH historically existed for the select few to address rare, rare, difficult to replace and were operationally crucial for the business. Now WFH is becoming the new norm that is being extended up to 50% of the workforce to facilitate cost-effectiveness, improved coordination, render better productivity which is beneficial to the organization and employees.

It is also expected that some employees will be on Hybrid Work System (HWS), wherein they will work on campus for some days and few days on WFH/WFA (Susan et al., 2021 a).

LITERATURE REVIEW

As WFH & WFA and Hybrid Work System (HWS) have not been tested extensively in the past, the inter-dependent organizational factors need a relook to align with many other functional and process changes to make it effective and successful.

Virtual training was not a mandated practice in the regular system of training in most organizations (Krishnan, 2020); Thejovathi and Krishnan (2020). There were no universal policies to guide such practice in most organizations. This practice has been very minimal was administered on a mutual need basis between the organization and the individuals. The respective business heads took the decisions, and the practice was more prevalent in large IT organizations.

During an emergency transition to remote learning, the instructor's role continues to support learning for all despite the expanded differences in students' contexts during a global disaster. Nurturing a learning community where students continue to grow their sense of belonging holds essential implications for engagement and retention (Wilson et al., 2015).

The current global Coronavirus crisis, the flu pandemic of 1918, forced the closure internationally of schools and brought a halt to formal education. A significant difference between then and now is that there was no possibility of moving education online. Furthermore, even in the current era, mobile learning has only become generally usable and ubiquitous in the last twenty years through the increased connectivity, functionality, and portability of mobile devices (Tony et al., 2020).

In 2020, COVID-19 confronted teachers and administrators in the USA with unprecedented challenges. Encountering a shifting landscape, teachers engaged young students in online learning environments with marked variation in technological access, parental support, and academic expectations. Emergency remote teaching environments (ERTE) respond to this crisis and differ in meaning from pre-planned online learning. ERTEs offer rapidly developed, temporary instructional support in a crisis without pre-planned resources or infrastructure (Hodges et al., 2020).

Promoting individual and group regulation through social connection: strategies for remote learning when the Coronavirus disease (COVID-19) pandemic shuttered many institutions across the globe, online instructional delivery gained attention (Richard et al., 2020). Emergency remote teaching (ERT) also highlights the considerations of accessibility, equity, digital divides, privacy, and security (Trust, 2020).

Keep technology integration visions "learning-first." Transitioning to distance learning cannot be managed by just throwing technology tools, especially new ones, at students and teachers. Limit the use of new tech tools as much as possible and focus on what you have and what has worked well in the past (Lana et al., 2020). The unique contribution of COVID-19 is that the teachers, students, administrators, and government engaged in the offline, regular, face-to-face mode of learning have realized the need for online education tools and the infrastructure to communicate with students amid the closure of schools, colleges, and universities during the times of pandemics. If the corporate of India have chipped in to help government in tackling virus outbreak by making masks and sanitizers, the Ministry of Human Resource Development (MHRD) has come forward with its e-learning resources, varying from digital courses like Massive Open Online Course (MOOC) to digital library to check "learning poverty" and the consequent "human capital deficit" in the short and medium term and also to ensure that "demographic dividend" is tapped by India (Seema, 2020).

Research Problem

The researcher and many others are witnessing revolutionary revelations during pandemic times, mainly from the enforced practice of WFH and Virtual Training (VT) and Hybrid Work Systems. The pandemic work-life situations are undergoing revolutionary changes and significantly impact organizations, business models, work-life balance, and workplace

difficulties. This also affects organizational growth, coordination issues between functions and teams, work-life models, socioeconomic factors, competitions, and many other business issues. (Susan et al., 2021 b).

Objectives of the Study

This case study aims to identify the gaps and address the desired structural issues for VT in organizations to make the training function effectively focused on productivity enhancement, performance improvement, people development, and establishing the credibility of the T & D function. Thus, this survey was to identify those core factors that will be the game changer for VT to be successful and effective in enhancing the organization's learning quotient. The outcome of this study would help the organizations and the training community to review the existing T & D practices and tailor-make the same to suit WFH & Hybrid work System practices shortly with a scope for further review in the next two to three years.

Assumptions

1. Organizations that were conducting VT practiced various training methods depending on their needs and the availability of existing facilities.
2. The organization require implementing effective VT practices as WFH is the new norm that has to be made prosperous and nurtured by the organization
3. VT aligned with the business needs to develop competencies for its employees.

Challenges of WFH, WFA, HWS and Virtual Training Needs:

1. Industry faced several operational and coordination difficulties during the pandemic and operated on the reactive mode of WFH practice, hence it had to face lots of challenges to manage the practical work norms
2. IT organizations started recruitment to address the hiring needs. After that, on boarding and training them virtually to manage the business needs was pertinent. Enormous demands made on HR to accelerate the effective WFH, VT, and other integrative needs for the new work norms of Hybrid Work Systems (HWS) were seen on the ground (Andrea et al., 2021).
3. Organizations had to scale up to implement VT practices of a larger magnitude of WFH/ WFA/HWS based on new work norms.
4. Pandemic provided insights to the industry and the training community to innovate in pedagogy, blended learning practices, self-learning, self-certification, and gamification modules (ET, 2021).

Relationship between Training and Development, Individual Career Development and Organization's Success. Organizational T & D activities are essential to improve employees' competency (knowledge, skill & abilities) to cover all types of training needs (Nick, 2010). This is crucial to expand the horizon of capabilities for all employees to benefit the organizational development to be competent and meet employees' career goals. These certainly significantly impact improving production, productivity, and competitive edge consistently and continuously to address business needs and business excellence.

RESEARCH METHODOLOGY

The study selected IT Organizations covering the population of multinationals (MNC's), Indian MNC's (medium and small organizations) to ascertain whether the virtual training practices could be improved further to address the needs of the business. The research methodology adopted is depicted in Table 1.

Table 1		
RESEARCH METHODOLOGY		
Sl.No.	Parameter	Value
1	Type of Research	Descriptive, co- relational, explanatory and Exploratory
2	Length of Study	6 Months
3	Research Instrument	Survey Questionnaire were sequential based for Hypothesis testing, Pilot study for validation of the Questionnaire
4	Survey Administration	Email and follow-up calls
5	Instrument Validity Testing	Cronbach's Alpha
6	Sampling Type	Selective & Simple Random Sampling
7	Sample Size	76
8	Analysis	Cronbach's Alpha, Descriptive, Pearson's Co-relation and
9	Hypothesis Testing	Coefficients Analysis

Research Design

This study was initiated with a pilot study with an experimental and control group (Kothari et al., 2020) through discussions with a few professional colleagues, trainers, participants, and VT organizations. The pilot study was to establish a prima-facie need for this study covered opinion survey on three Basic questions orally gathered from a few reputed organizations and trainers. These three essential questions include:

1. Are organizations satisfied with the effectiveness of VT?
2. Is the training function and the trainers happy on the effectiveness of the VT in terms of their participation and employees?
3. Are the participants reflecting their seriousness for VT?

The answers to all the above questions lead to the curiosity of doing this survey. WFH, WFA, and VT are a recent origin on a larger scale. The researchers had to rely on several isolated literature reviews, journals and articles from various newspapers, and data on the internet. Reading of research methodology was resorted to arrive at the next steps for the survey. The final questionnaire for the survey was structured based on the preliminary observations, literature review, and pilot study.

The Survey Instrument (Questionnaire)

1. The questionnaire has analytical statements to identify the core elements of the problem of organizing VT.
2. There were 14 statements related to the two hypotheses
3. The response to all the questions was made compulsory
4. The questionnaire was framed in simple, understandable sentences
5. The respondents were guided with instructions to respond to each statement in terms of five degrees of the Likert scale (Trochim, 2021).

The questionnaire was sent to the selected respondents over e-mail, and inputs were collected through Google forms and tele-conversations. The selection of the sample was based

on a simple selective sample covering the targeted population. This allowed the need to protect equal probability of covering a segment of the IT population of organizations.

Data Analysis and Interpretation

Reliability Test

The research instrument was tested using Cronbach Alpha to measure the internal reliability of different questions. The alpha coefficient is shown in Table 2 proves substantially that the instrument is highly reliable and valid. The internal consistency is high as the value of Cronbach Alpha ranges from 0.798 to 0.865.

Item Scale	Cronbach's Alpha	No of items
Infrastructure	0.865	4
Training Strategy	0.798	4
Engagement	0.826	6

The participants were selectively chosen to represent a set of clusters of organizations for the sampling method. The data and parameters that were collated, tabulated and tested are shown in Table 3.

Organization Type	The Platforms need modification and innovation		The Platforms are sufficient enough for various types of training		The Platform's Participant's comforts and usability experience should be improved		There are no Virtual Training Platforms currently	
	No	Yes	No	Yes	No	Yes	No	Yes
Indian Conglomerate	14	4	13	5	6	12	16	2
	77.8%	22.2%	72.2%	27.8%	33.3%	66.7%	88.9%	11.1%
Multinational organization	19	16	16	19	25	10	34	1
	54.3%	45.7%	45.7%	54.3%	71.4%	28.6%	97.1%	2.9%
Public Sector	1	0	0	1	1	0	1	0
	100%	0%	0%	100%	100%	0%	100%	0%
Ownership Driven	7	2	6	3	7	2	7	2
	77.8%	22.2%	66.7%	33.3%	77.8%	22.2%	77.8%	22.2%
Others	6	3	6	3	5	4	9	0
	66.7%	33.3%	66.7%	33.3%	55.6%	44.4%	100%	0%
Total	47	25	41	31	44	28	67	5
	65.3%	34.7%	56.9%	43.1%	61.1%	38.9%	93.1%	6.9%
	Chi-Square: 4.267; p = 0.371		Chi-Square: 5.530; p = 0.237		Chi-Square: 9.271; p = 0.056		Chi-Square: 5.385; p = 0.250	

Association between Type of Industry and Effectiveness of Virtual Training

The association of industry type with the effectiveness of virtual training was examined using a cross tab, and the findings are depicted in the subsequent paragraph. As indicated in Table 4, the findings demonstrated that the employees of different types of organizations rejected the demand for the modification and innovation of platforms. However, the Chi-Square test demonstrated no significant association between the industry type and modification of platforms (Chi-Square:4.156,p>0.05). Hence, it can be inferred that the platform modification is not associated with the types of the organization. Similarly, despite the rejection of the employees of industries except IT-based Healthcare and IT-related engineering services in which 66.7% accepted), the association between types of industry and virtual platform effectiveness was not significant (Chi-Square:6.304,p>0.05). This indicates that the effectiveness of the platform cannot be measured in association with the industry types. Further, the responses regarding the improvement of user-friendliness of virtual platforms reveal that the majority of employees of all industries demanded no improvement of virtual media. However, again, the association was insignificant (Chi-Square:3.780, p>0.05), indicating that modification of the platforms is not associated with the types of organizations. The measurement of user-friendliness is not performed with respect to type of organization instead concerning the type of trainees. (Steven et al., 2015); Andrea et al. (2021).

Finally, it was inferred that the availability of the virtual platforms significantly associated with types of industries (Chi-Square:31.563, p<0.05).

Type of Industry	The Platforms need modification and innovation		The Platforms are sufficient enough for various types of training		The Platform's Participant's comforts and usability experience should be improved		There are no Virtual Training Platforms currently	
	No	Yes	No	Yes	No	Yes	No	Yes
BPO / Call Centre	2	0	2	0	2	0	0	2
	100%	0%	100%	0%	100%	0%	0%	100%
IT/ITES/Telecom	26	17	27	16	23	20	42	1
	60.5%	39.5%	62.8%	37.2%	53.5%	46.5%	97.7%	2.3%
Health Care	2	1	1	2	2	1	3	0
	66.7%	33.3%	33.3%	66.7%	66.7%	33.3%	100%	0%
IT for Engineering Industry	9	3	4	8	8	4	12	0
	75%	25%	33.3%	66.7%	66.7%	33.3%	100%	0%
IT Pharma vertical	0	1	1	0	1	0	1	0
	0%	100%	100%	0%	100%	0%	100%	0%
Others	8	3	6	5	8	3	9	2
	72.7%	27.3%	54.5%	45.5%	72.7%	27.3%	81.8%	18.2%
Total	47	25	41	31	44	28	67	5
	65.3%	34.7%	56.9%	43.1%	61.1%	38.9%	93.1%	6.9%
	Chi-Square: 4.156; p = 0.527		Chi-Square: 6.304; p = 0.278		Chi-Square: 3.780; p = 0.582		Chi-Square: 31.563; p = 0.000	

The findings reveal that majority of the employees of all organizations except BPO responded that they have virtual training platforms. Meanwhile, the employees of the BPO

industry indicated that they hardly had any virtual training platforms. This points out the necessity of taking the business-oriented service industries' initiative to implement virtual training, as depicted in Table 4.

Correlation among the Variables: Refer Table 5

1. The study carried out Karl Pearson's correlation analysis to measure the linear association strength between the study variables. The correlation coefficient 'r' ranges between -1 (indicating negative correlation) to 1 (indicating positive correlation) with 'r' value <0.3 shows a low level of correlation, 0.3 to 0.6 specifies a medium level of correlation and >0.6 specifies strong correlation
2. The findings demonstrated that there exists a strong correlation between organization type and number of employees in the organization ($r=0.796$, $p<0.01$). Type of industry moderately correlated with organization type and number of employees in the organization
3. The integration of hardware and software for training strongly coordinate with capability to develop the infrastructure
4. Strong correlation was observed between virtual training and addressing of business needs and capability to develop infrastructure
5. Virtual training and cyber security needs moderately correlated with infrastructure development, integration of hard and software and addressing of business needs
6. Virtual training and employees moderately coordinated with infrastructure development, integration of hard and software, addressing of business and cyber security needs
7. The impact of virtual training on individual as well organizational practice showed moderate correlation with infrastructure development, integration of hard and software and the requirement of virtual training to employees
8. Similarly, virtual training and strategic development initiatives moderately correlated with infrastructure development, integration of hardware and software, cyber security needs and the requirement of virtual training to employees. Virtual training and meeting of organizational needs showed moderate correlation with the variables except number and type of organization and type of industry
9. Similarly, Virtual training and improvement of employee's work competencies showed moderate correlation with the variables except number and type of organization type of industry and development of infrastructure. Similar result was found out in the case of virtual training participation and organizational satisfaction
10. Virtual training and career development needs showed moderate correlation with infrastructure development, integration of hard and software, addressing of business and cyber security needs, meanwhile it showed strong correlation with individual and organization practice, strategic development initiatives, meeting organizational needs and improvement of employees work competence. Similar correlations can be found between the rests of the variables as well.

ITE RM	Mea n	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Q2	2.39	1.3	0.796**	1															
Q5	4.15	0.8	0.16	-0.08	0.02	0.747*	1												
Q6	4.11	0.8	0.01	0.04	0.03	0.646*	0.715*	1											
Q7	3.96	1	0.22	-0.17	0.01	0.573*	0.509*	0.577*	1										
Q10	3.56	0.9	0.14	-0.16	0.2	0.317*	0.380*	0.22	0.307*	0.426*	.653**	1							
Q11	3.74	0.9	0.22	-.263*	0.01	0.549*	0.631*	0.557*	0.585*	0.494*	0.346*	0.583*	1						
Q12	3.93	0.9	0.07	-0.01	0.12	0.544*	0.459*	0.495*	0.454*	0.509*	0.427*	0.398*	0.591*	1					
Q13	3.75	1	-0.07	0.12	.269*	0.448*	0.427*	0.414*	0.327*	0.641*	0.508*	0.374*	0.441*	0.488*	1				
Q14	3.43	0.9	0.15	-0.17	0.15	0.372*	0.419*	0.350*	0.235*	0.609*	0.604*	0.678*	0.602*	0.605*	0.556*	1			
Q17	3.53	0.9	0.08	-0.06	0.18	0.394*	0.448*	0.359*	0.356*	0.554*	0.502*	0.491*	0.567*	0.546*	0.540*	0.676**	0.396**	0.394**	1.00

Hypothesis Testing

The present study formulated two main hypotheses to assess the effectiveness of the virtual training platforms in enhancing the engagement of the employees and the overall performance of the organization. (Kabir, 2016).

The questionnaire was developed to test two hypotheses with 14 close-ended questions and four open-ended questions. The hypothesis test results are depicted in Tables 6, 7, 8 & 9.

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
0.115	0.013	-0.015	0.108	0.013	0.463	2	69	0.632

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.253	0.078		3.23	0.002
Infrastructure	0.018	0.02	0.13	0.917	0.362
Training Strategy	-0.005	0.021	-0.035	-0.25	0.804

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
0.086	0.007	-0.007	0.107284	0.007	0.516	1	70	0.475

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.358	0.07		5.13	0
Engagement	-0.013	0.019	-0.086	-0.718	0.475

H₁: There is a direct impact of IT infrastructure on the effectiveness of virtual training.

H1: The IT infrastructure and training strategy significantly impact the effectiveness of virtual training; Tables 6 and 7 depict the descriptive and linear regression for analysing the impact of infrastructure on the effectiveness of virtual training. Table 6 illustrates that only 1.3% of the variation in the effectiveness of virtual training is explained by infrastructure, and moreover, the relationship between these variables are not significant ($F(2,69) = .463, p > 0.05$). The major findings made it clear that the effectiveness of training does not rely on the organization's IT infrastructure or short-term training strategies for addressing the Pandemic situation.

H₂: Employee engagement has a significant impact on the effectiveness of virtual training.

Tables 8 and 9 depict the descriptive and linear regression for analysing the impact of employee engagement on the effectiveness of virtual training. The Table illustrates that employee engagement explains only 0.7% of the variation in the effectiveness of virtual training. Moreover, the relationship between these variables is found to be insignificant ($F(1,70) = .516, p > 0.05$). The significant findings reveal that employee engagement has no substantial role in the effectiveness of virtual training.

CONCLUSION

The significant findings indicated that the effectiveness of training does not rely on the organization's IT infrastructure or the short-term training strategies to address the pandemic situation. The significant results also reveal that employee engagement has no substantive role in the effectiveness of virtual training.

Hence the research findings have established the fact that the success of VT will largely depend on the need to focus on the new norm of WFH/WFA & HWS with flexible hybrid training practices. It is expected that organization leaders, HR, T & D professionals, and employees take advantage of the digital technology and its various applications, tools with appropriate pedagogy for implementation to enhance the people development initiatives. All these must be aligned to the business and organization's needs. The major perspective is for promoting effectiveness and aim for success of WFH & VT practices.

The findings from the study correlated with various literature reviews on the aspects of engagement and training practices including training infrastructure. The training function needs to develop modified versions of innovative VT practices, Pedagogy, automated training, training of Virtual trainers, and develop subject matter experts. Best practices and benchmarks are to be created for VT that would get nurtured and adopted by many organizations, develop unique methodologies, have a competitive edge, and be an employer of choice.

Guidance for Leaders, Trainers, Line Managers, and Employees

It is revealed that the organization leaders must be the architects to develop a new structure to promote VT effectively. Achieving productivity, improving organizational performance, growth, and excellence while aligning individual abilities with business is the key (Ken, 2012). This will ensure achieving productivity, improving organizational performance, growth, and excellence. This new paradigm and norm need quick adaptation to unlearn re-learn, up-skilling, competency developments.

The study also reflected that organization dynamics, i.e., enforcing a policy framework for mandatory participation in VT, will help deliver the desired results. The advantage of technology up-gradation to facilitate VT, hardware and software integration is important but not a game-changer.

This study has enhanced the scope of HR and T & D professionals to reinvent themselves to tailor-make training solutions consistent with employee and business needs by adapting to new technologies. WFH, WFA, hybrid working norms, and VT are aligned to upgrade employees' competencies through a policy framework, nurturing a culture for coordination and monitored systems. Self-learning commitment and achieving a minimum standard of learnability must improve the learning quotient (ET Resilient Masterminds, 2021).

The Training function has to be a game-changer by reviewing the existing practices, redesigning the VT practices, reviewing training function performance, and tracking the participant progress and redesigning the knowledge management system, and preparing managers and employees for reshaping the training culture with a paradigm shift (Nick et al., 2010). Aligning all the above with the organization and functions is also most important, The training function must re-align to support a hybrid training methodology to nurture and support the hybrid working system and rejuvenate the T & D practices to reshape the training culture with a paradigm shift (Srinivasan et al., 2021); Bill et al. (2021).

Limitations of the Study

1. No face-to-face interactions were possible to enhance the understanding of the issues on the ground.
2. The size of the sample represents the organizations mostly in Bangalore who are predominantly Indian information technology MNC's, medium-size and small IT organizations. The study could not be done at the pan India level due to time constraints and pandemic reasons.
3. The questionnaire was shared with 140 participants, of whom 76 responded, and 72 were taken for consideration after validating all the responses

Theoretical and Empirical Contributions

This study has provided insights to correlate with all the primary research findings and the range of past studies. The most common trail revealed is that the empirical contributions are implying relevance to the current context that learning needs for the corporate leaders, functional managers, HR, T & D team, and employees are required to be strengthened by improving the VT and learning process in organizations, keeping in mind the learning curve and appetite of all the stakeholders. Needless to say, self-learning, blended learning, and certification are the path forward.

Questions from the Case Study

1. What is the strategic role of organisation leaders, functional managers, HR-Head and Training functionaries to make VT effective and successful?
2. What modules could aptly suit a hybrid-based learning system to match with the current work situation?
3. What are the core factors to be focused on for a well-integrated HW & SW integration, cyber-security for seamless learning system?
4. How can HR & training function evaluate the success factors of VT methods and find ways to improve them for continuous improvement
5. How trainers could be developed on pedagogy, monitoring learning progress, virtual training techniques and use of self- learning tools?

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