Impact of ICT on Skill Development Programmes for Livelihood in Chhattisgarh

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ABSTRACT

The present paper undertakes a study of the impact of using technology in vocational education and training programmes in the state of Chhattisgarh. A brief background about the significance and need for skill development in India, has been presented. The paper also discusses the possible applications of Information and Communication Technology in vocational education and training programmes and puts forth recommendations for greater and better penetration of such courses.

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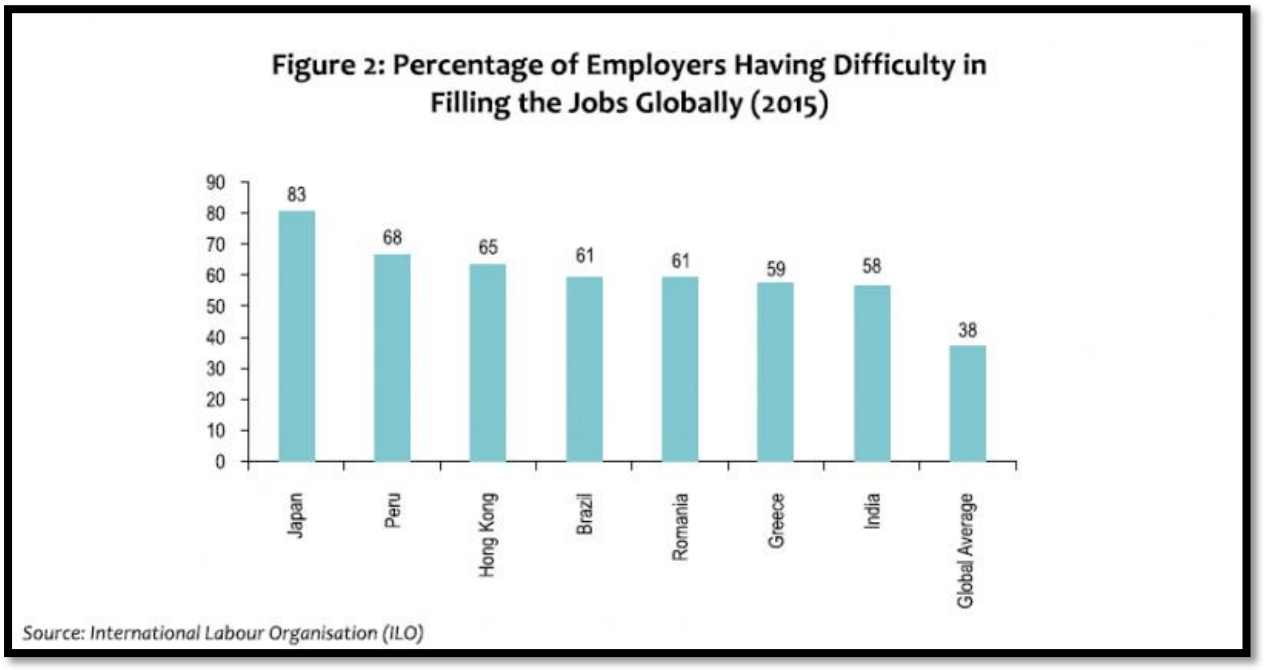
I. INTRODUCTION

While Indian economy pegged to grow at a rate of 7.3 percent for the financial year 2018-19, (Hindu, 2019) it also faces a poor or ill-skilled workforce. On the one hand, accelerated economic growth paves way for increased jobs and skilled manpower; on the other hand, the country is battling with shortage of skilled manpower.



Apart from improving quality of skill development programmes, capacity building, making the programmes relevant, improving access for the masses and financing are some of the other challenges that India faces in effective implementation of skill development programmes. Despite

these challenges, India also has the advantage of young population as against developed economies which face the problem of ageing population. It is pertinent to put this demographic dividend to the country's advantage by making them skilled and employable.

Assessing the skilling needs, the Ministry of Skill Development and Entrepreneurship was formed in June 2014 by Prime Minister Shri Narendra Modi. Working in close collaboration with National Skill Development Corporation (NSDC), the Ministry aims to work in association with the labour market for defining the curriculum, teaching standards and bring in consistency and standardization in the entire process from curriculum and certification. All this is aimed towards bridging the gap between the demand and supply of skills.

However, any initiative taken towards vocational education and training must take into account another glaring aspect of this new economy; that it is technology driven. Technology has changed the way we live, learn and work. (UNESCO, 2003) While it has posed a new set of challenges ranging for older people by making them unemployed or underemployed and widened income inequalities, it has also ushered in newer opportunities. Information and Communication Technologies are the drivers of this new economic era and human capital is the fuel. Economic prosperity can be achieved only through continuous learning. This, coupled with changing labour market conditions, calls for flexible modes of accessing Vocational Education and Training so that evolving learning needs of workforce can be met with.

We live in an age where there is an increasing emphasis on training while learning. Instructors with knowledge and professional experience are hard to find as they are engaged in employment. Vocational education and training will be incomplete with all the necessary infrastructure and training equipments if there are not adequate instructors who possess both the occupational skills and the professional knowledge. ICT can come handy to fulfill this gap through technology enables classrooms or through online or distance learning programmes.

While we come across a number of programmes in higher education where online and distance learning options are available, this route still remains unutilized when it comes to vocational education and training programmes.

II. LITERATURE REVIEW

(World Bank, 2013) started a debate on whether it is jobs or skills that comes first. Increase in employment opportunities means an increase in the demand for education that meets the expectations of the market which in turn needs to be addressed by the system. This in turn means developing policies that will make sure that people from different working ages are offered the necessary incentives to continue acquiring skills.

Given the current infrastructure and policy framework that exists in India, (Sharma & Nagendra, 2016) enlist some of the challenges that skill development faces. While on the one hand, the infrastructure available for training is inadequate, there is also the scarcity of skilled trainers on the other, since vocational education needs both the knowledge and experience of the trainer. Moreover, in order that the trainer is able to stay abreast with the changing labour market situation, it becomes equally essential to train the trainers. Improving the reach of skill development programmes, especially to rural areas and making available qualified trainers are some of the challenges facing skill development.

(Kanchan & Varshney, 2015) argue that as a fast growing economy, India also needs knowledge workers with effective ICT, problem solving and communication skills. It is essential that the unorganized workforce, which constitutes a major part of our labour, be equipped with these skills as they no longer can be counted in isolation.

(UNESCO, 2003) has identified teaching and learning as one of the twelve potential areas where ICT can be integrated. ICT support can particularly be helpful as a mode of implementation in general education.

(World Bank, 2013) points out that though the investments to set up the infrastructure for ICT integration can be high, but it can be of great assistance in teacher trainings. An effective integration of ICT in vocational education and training must be undertaken after a thorough study of the current situation of ICT and possible improvements in the situation.

(UNESCO, 2003) report discusses the various possible integrations of ICT in teaching and learning. The paper argues that for ICT integration to be effective, it is essential to understand the extent to which teachers incorporate ICT into their teachings and the type of applications that were used. The paper also recommends measuring the learning outcomes and learning domains by using ICT enabled teaching. Designing appropriate learning environment with the help of ICT that can meet the needs of the target audience is one of the many challenges that need to be addressed before ICT integration into teaching and learning. The characteristics of the learners (such as their age group, comfort level with ICT tools), their domain of learning, mode of delivery are some of the factors that need to be considered to promote ICT integration in classrooms.

ICT can bring in the expertise of skilled professionals through online learning support and make vocational education effective by rightly providing the practical techniques together with theoretical, classroom learning, something which is much needed in a changing labour market. (Yasak & Alias, 2014)

Today technology is being tailored to suit to the requirement of a specific sub-system. Technology Enabled Learning (TEL) will pave way for better penetration of vocational education and training in future. With an infrastructure that supports ICT, Technology Enabled Learning cannot just improve learning availability but also bring in cost-effectiveness in the long term (Lithunia, 2016).

With the speed of internet and its access constantly improving, technology based learning has the potential to become cost effective and also offer flexibility to meet different cognitive abilities of learners and learning styles. (Lafreniere, 1997). (Kasworm & Londoner, 2000) point out the use of technology not only as a delivery mechanism but also as curriculum and as a complement to instruction.

III. RESEARCH METHODOLOGY

Objective- The objective of the present paper is to study the impact of ICT used in skill development programmes on livelihood in the state of Chhattisgarh.

Research Design - For this purpose, the skill development programmes run under Mukhya Mantri Kaushal Vikas Yojana have been studied. The nature of research is empirical.

Null Hypothesis -

H_0 : Use of ICT in skill development programmes has no significant impact on livelihood.

Data Collection – Convenience sampling method has been undertaken for the purpose of this study. Irrespective of the duration of training, trainees being trained under Mukhya Mantri Kaushal Vikas Yojana, being implemented through Chhattisgarh State Skill Development Authority (CSSDA) have been taken into consideration. Trainees belong to both Government and private Vocational Training Providers (VTPs). Sample size of trainees is 225.

Primary data collection has been used. Structured questionnaire with six questions was given to respondents. The responses were collected on a 5 point Likert scale - 1 for Strongly Disagree, 2 for Disagree, 3 for Do Not Know, 4 for Agree and 5 for Strongly Agree.

Data Analysis - The data has then been tabulated and statistical tests conducted on SPSS. Correlation, simple linear regression and ANOVA tests have been used to analyze the data.

IV. RESULTS

Correlations

		LIVELIHOOD	USE OF ICT
Pearson Correlation	DV:LIVELIHOOD	1.000	.672
	USE OF ICT	.672	1.000
Sig. (1-tailed)	DV: LIVELIHOOD	.	.001
	USE OF ICT	.001	.
N	DV: LIVELIHOOD	225	225
	USE OF ICT	225	225

Above table shows the correlations and it is evident from this table that Pearson's correlation coefficient between livelihood and Use of ICT in skill development programmes, is 0.672. Therefore, it is concluded that there is association between livelihood and Use of ICT in skill development programmes. Furthermore, since the value of correlation coefficient r suggests a positive correlation, one can use regression analysis to Model the relationship between the variables.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.672[a]	.045	.043	.53542	.047	11.114	1	223	.001

Over all model summary shows the value of correlation coefficient R= 0.672 it is the linear correlation coefficient between observed and model predicted values of the dependent variable.

It's value indicates a relationship. $R^{2,}$ the coefficient of determination is the squared value of the correlation coefficient. Adjusted R^2= 0.043, R^2 change is also 0.047 and these values show that overall strength of association may be noteworthy. The coefficient of determination R^2 is 0.047; therefore, 4.7% of the variation in livelihood is explained by Use of ICT.

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.186	1	3.186	11.114	.001[a]
	Residual	63.928	223	.287		
	Total	67.114	224			

To explain any variation in the dependent variable ANOVA is used to exhibit model's ability. ANOVA table exhibits the model coefficients differ significantly from zero. In other words, one can say that there exists enough evidence to conclude that slope of population regression line is not zero and hence, Use of ICT in skill development programmes may be useful as predictor of livelihood. The value of F is 11.114 at 0.001 significant level can be accepted about the goodness of fit model.

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	2.703	.239		11.291	.000		
USE OF ICT	.280	.084	.672	3.334	.001	1.000	1.000

In the table, the model explains about 4.7% percent coefficient of determination between livelihood and Use of ICT, and hence, Use of ICT may be a useful predictor of livelihood. From the table of coefficients, the regression equation can be obtained as

Livelihood = 2.703 + 0.280(Use of ICT)

V. FINDINGS & DISCUSSIONS

From the results, it may be concluded that use of ICT in skill development programmes does have a significant impact on livelihood.

Most respondents have indicated that some form of ICT integration to vocational training will facilitate their learning and also help in generating better opportunities for livelihood.

The findings are in agreement with past research. (World Bank, 2013) report argues that when the economy grows, there are new job opportunities that call for skill upgradation. This in turn calls for continued learning throughout one's employable tenure. ICT enables people to upgrade themselves with the latest trends and knowledge in their respective fields.

It is also seen that many skill sets from the unorganized sector are now making up for vocational education programmes and ICT has transformed the nature of many these jobs belonging to the unorganized sector. It is essential that necessary support be provided even while teaching some of the skills belonging to the unorganized sector. (Kanchan & Varshney, 2015)

Online learning could bring hands-on approach by striking a balance between theoretical and practical learning which is a key distinction between vocational education and other forms of education. (Yasak & Alias, 2014)

ICT integration could also include supporting the delivery through video lectures. (UNESCO, 2003) With minimum equipments like projector screens and a computer, video lectures can be made available to trainees showing them the latest developments in a specific field. In this way, even in the absence of updated equipments and practices.

As pointed out in his study by (Roy, 2012) remote or rural areas where qualified trainers cannot be found, online teaching modules can be used. By setting up appropriate ICT resources at the Panchayat level and vocational education can help in enforcing Right to Education through vocational education.

(Sharma & Nagendra, 2016) also reiterate the fact about unavailability of trained professionals in remote areas. ICT infratsructure can help in training the trainers in and around a given area which can then benefit many trainees.

VI. SUGGESTIONS

Improved internet connectivity and penetration of smart phones can pave way for access to online lectures or learning in some form to support vocational education in rural areas.

Another possibility is having classrooms connected through satellite communication so that classes for similar courses could be streamed live to be shown to students in distant places with access to question and answers just like video conferencing sessions.

The rural infrastructure needs to be made ICT ready at the Panchayat level and the government needs to bring in a national policy through Public Private Partnership or some other route. With the most of the rural workforce being school drop-out, ICT enabled vocational education at the village level can make them employment ready.

VII. CONCLUSION

In a country with vast population and millions of youth to be skilled, and resources are hard to find, ICT can be advantageous not only as a part of curriculum but also as an instrument in teaching. Web based course modules, online learning, video lectures and ICT techniques used in various jobs are some of the ways in which ICT can be used in teaching and learning in vocational education. This will enable good quality training made accessible to trainees and prepare them for better employment opportunities. This may need setting up of or improving existing ICT infrastructure and though, there are infrastructure costs associated with ICT integration, but this can bring cost effectiveness in the long term and at the same time help in fulfilling the vision of a skilled India.

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