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ASSESSING COMPATIBILITY OF ONLINE EDUCATION IN RURAL THANE DURING COVID-19

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Abstract: *The effects of the COVID- 19 pandemic have been observed in all sectors around the world.The education sectors of India as well as the world are significantly affected due to pandemic. It has enforced the worldwide lock down and created challenge of poor dissemination of knowledge. Entire globe witnessed a shift from offline to online mode of teaching-learning process. The education sector has struggled with a new approach to overcoming the crises and digitizing the complexities of washing away the pandemic threat. The pandemic also has a major effect on the higher education sector, which is a primary determinant of the nation's economic future. This revolution in educational delivery is forcing policy- makers to find out how to accelerate on-scale participation while maintaining inclusive e-learning approaches and resolving the digital divide. Knowledge dissemination and its effectiveness in Rural India is a huge challenge because of poor infrastructure and limited income of rural population. The objective of the research is to examinefactors affecting knowledge dissemination and its effectiveness in rural areas of Thane district in the state of Maharashtra.*

In India, technology approaches to the problem currently appear to be limited to leading, urban centric institutions. But if the lockdown and the downturn in education continue, there is a true, pressing need for innovators to come up with innovations that can help Indians learn remotely, especially in the country's most remote and vulnerable areas.

Keywords: *Network Connectivity, Education Level, distance education, Rural education.*

Introduction:

The COVID-19 pandemic has had an impact on education systems worldwide, contributing to the closing of universities and schools. The governments from all around the world have imposed a temporary closure of educational institutions to control the spread of COVID—19. About a billion learners are currently affected due to the closure

of schools. According to UNICEF reporting, 134 countries are currently implementing national closures and 38 are implementing local closures, affecting about 98.5 per cent of the student population worldwide.

The closure of schools not only affects students, teachers and communitiesbut also has far-reaching economic and social consequences. In response to school closures, UNESCO has promoted the use of distance learning programs and accessible educational applications and networks that can be used by schools and teachers to access remote learners and minimize educational disturbances. Many governments have now come up with an e-learning programmes to avoid the loss encountered by the students. The ed-tech firms are taking the advantage of this situation and they are offering the students and teachers free access where they can conduct online classes or offer them attractive discounts on modules which can be used in e-learning. Students with some start-ups experiencing as much as 25 percent increase in e-learning met these initiatives with overwhelming response. Covid-19 has made the experts to rethink about the traditional way of education and come up with innovative ideas to avoid the loss of students. Digital education seems very appealing and a very feasible option for filling the gap for education in the classroom for a span of three to four months while reducing students' chances of any contamination before classes resume. More significantly, it has also taken to the centre stage India's hitherto peripheral problem of digital education. In the future, digital education is expected to get hand in hand with the regular system of education.

While hudreds of millions of students around the world continue to study at home, it remains to be seen how the current learning-at-home paradigm will be dealt with by educators and the sector at large.

Literature Review

Karthikeyan, J. Christopher Rajasekaran, W., & Unyapho, P. (2019) found that the technology integrated effectively in the classroom, learnings is well received by learners. To nurture education in a fast-growing economy like India, Digital footprints and technology can enrich learning process[1]. Sampson, D. G., Ifenthaler, D., Isaías, P., & Spector, J. M. (2014) mentioned in their book “Digital systems for open access to formal and informal learning” that recent developments resulted into new research challenges of online open and distance learning systems in terms of experiential learnings, availability of required infrastructure, effective learning engagement, effectiveness of learning systems, educational background of family of the learner and standard of living[2]. Agarkar S. (2020) has made it clear that digital learning is the future of school and college education [3].

From the above literature and research, we decided to examine the variables such as effectiveness of learning, infrastructure, educational background.

There is another interesting research presented in research conference-recently held in Spain by Morales, M., De La Roca, M., Barchino, R., Hernandez, R., & Amado-Salvatierra, H. R. (2019). Research states’ that there is need to develop Digital

learning Ecosystem for effective delivery of online content in open and distance learning education [4]. Availability of digital equipment, devices and their affordability in rural India is a major challenge. Purchase and availability of new equipment facilitates technology transfer[5]. Fernandoo M. Reimers mentioned in the article that school programs and organizations create strategies to maintain school by alternative modalities, during the required time of social isolation. It offers a structure of areas to be addressed by these strategies. Based on the rapid evaluation of educational needs and evolving responses in ninety-eight countries, the study describes the most important needs to be addressed in the plans, as well as areas that are likely to present further obstacles to implementation. It also discusses the educational responses of different countries to the crises. Based on data analysis from the survey's current administration, the study also explains the difficulties faced by different educational systems to focus on online education as an alternative form[6]. COVID-19 has negative effects on employment, including delays in learning and decreased access to educational and research services, work losses, and increased student debts. The findings also show that many educators and students rely on technology during the Coronavirus pandemic to ensure online learning continues. Online education, however, has been hindered by poor infrastructure including problems of network, electricity, inaccessibility and unavailability and poor digital skills. The study highlights negative impact of on the education sector, and the need for all educational institutions, educators, and learners to embrace technology and develop their digital skills in line with changing global trends and educational realities[7].

Hypothesis:

Ho1- Financial capacity of parents does not significantly impact intention to continue education in rural areas.

Ha1- Financial capacity of parents significantly impact intention to continue education in rural areas.

H02- There is no significant impact of network connectivity on intention to continue education in rural areas.

Ha2- There is significant impact of network connectivity on intention to continue education in rural areas.

H03- Online education is not an effective method of knowledge dissemination in rural areas.

Ha3- Online education is an effective method of knowledge dissemination in rural areas.

H04- Education level of parents does not significantly impact intention to continue education in rural areas.

Ha4- Education level of parents significantly impact intention to continue education in rural areas.

Research Methodology

This research is descriptive and exploratory in nature. The primary data is collected from structured questionnaire and is analysed in SPSS. The total qualified respondents of the study are 104. All of them are from rural areas of thane district in the state of Maharashtra in India.

Data Analysis and Interpretation

Table 1- Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.579[a]	.335	.329	1.03749	.335	51.497	1	102	.000	
2	.659[b]	.434	.423	.96230	.098	17.563	1	101	.000	2.208

a. Predictors: (Constant), Network_Connectivity
b. Predictors: (Constant), Network_Connectivity, Financial_Capacity_Parents
c. Dependent Variable: Intention_to_Continue_Education

The regression analysis as per model a of SPSS shows that network connectivity has significant impact on intention to continue education in rural thane. As per model b, both Network connectivity and financial capacity of parents have significant impact on intention to continue education in rural Thane. Hence, we will have to accept alternative hypothesis Ha1 and Ha2 and reject null hypothesis H01and H02, respectively.

Table 2 -Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.824	.276		2.987	.004
	Network_Connectivity	.640	.089	.579	7.176	.000
2	(Constant)	.500	.267		1.870	.064
	Network_Connectivity	.425	.097	.385	4.370	.000
	Financial_Capacity_Parents	.382	.091	.369	4.191	.000

a. Dependent Variable: Intention_to_Continue_Education

Following regression equation is formulated from above analysis-

Intention = 0.425 x Network connectivity + 0.382 x Financial Capacity of Parents + 0.824

Table 3 -Financial Capacity of Parents and Intention to continue Education.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				Sig.	95% Confidence Interval		Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound		Lower Bound	Upper Bound
Pearson Chi-Square	95.352[a]	16	.000	.000[b]	.000	.000			
Likelihood Ratio	107.400	16	.000	.000[b]	.000	.000			
Fisher's Exact Test	87.198			.000[b]	.000	.000			
Linear-by-Linear Association	33.669[c]	1	.000	.000[b]	.000	.000	.000[b]	.000	.000
N of Valid Cases	104								

a. 18 cells (72.0%) have expected count less than 5. The minimum expected count is .58.

b. Based on 10000 sampled tables with starting seed 1487459085.

c. The standardized statistic is 5.803.

Table 3 shows that, at the confidence level of 95%, output of chi-square test shows the p-value less than 0.05. This signifies that financial capacity of parents significantly impacts Learner's intention to continue education.

Table 4-Network Connectivity and Intention to continue Education.

Table 4 shows at the confidence level of 95%, output of chi-square test shows the p-value less than 0.05. This signifies that network connectivity significantly impacts Learner's intention to continue education.

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				Sig.	95% Confidence Interval		Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound		Lower Bound	Upper Bound
Pearson Chi-Square	82.038[a]	16	.000	.000[b]	.000	.000			
Likelihood Ratio	90.887	16	.000	.000[b]	.000	.000			
Fisher's Exact Test	76.480			.000[b]	.000	.000			
Linear-by-Linear Association	34.556[c]	1	.000	.000[b]	.000	.000	.000[b]	.000	.000
N of Valid Cases	104								

a. 18 cells (72.0%) have expected count less than 5. The minimum expected count is .69.

b. Based on 10000 sampled tables with starting seed 1487459085.

c. The standardized statistic is 5.878.

Table-5-Education Level of Parents and Intention to continue Education.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				Sig.	95% Confidence Interval		Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound		Lower Bound	Upper Bound
Pearson Chi-Square	128.428[a]	16	.000	.000[b]	.000	.000			
Likelihood Ratio	109.803	16	.000	.000[b]	.000	.000			
Fisher's Exact Test	88.402			.000[b]	.000	.000			
Linear-by-Linear Association	25.249[c]	1	.000	.000[b]	.000	.000	.000[b]	.000	.000
N of Valid Cases	104								

a. 19 cells (76.0%) have expected count less than 5. The minimum expected count is 1.15.

b. Based on 10000 sampled tables with starting seed 1487459085.

c. The standardized statistic is 5.025.

Table 5 shows at the confidence level of 95%, output of chi-square test shows the p-value less than 0.05. This signifies that network connectivity significantly impacts Learner's intention to continue education.

Table-6 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.430	1	55.430	51.497	.000[b]
	Residual	109.791	102	1.076		
	Total	165.221	103			
2	Regression	71.694	2	35.847	38.711	.000[c]
	Residual	93.527	101	.926		
	Total	165.221	103			

a. Dependent Variable: Intention_to_Continue_Education

b. Predictors: (Constant), Network_Connectivity

c. Predictors: (Constant), Network_Connectivity, Financial_Capacity_Parents

F value of ANOVA signifies significant impact of Network connectivity and financial capacity of parents have on learner's intention to continue education in rural Thane.
From the research it is observed that significant number of respondents from rural Thane perceive effectiveness of online education and hence null hypothesis H03 is rejected.

Conclusion:

Network connectivity andfinancial capacitysignificantly impact learner's intention to continue education in rural Thane during COVID-19. Poor Financial capacity of parents results into learner's inability of continuing online education in rural areas. Network connectivity facilitates continuity of knowledge dissemination in rural areas. Leaners from rural area believe that online education is an effective way of knowledge dissemination. Respondent's intention to continue education depends upon education level of parents. Initiating the development of basic IT-infrastructure can facilitate knowledge dissemination in rural India. The regression equation formulated from data analysis is Intention = 0.425 x Network connectivity + 0.382 x Financial Capacity of Parents + 0.824.

Acceptance of online education in rural India may not be a key challenge in comparison with availability of necessary IT-infrastructure. Hence, efforts must be made, on a priority basis, to improve the infrastructure facilities. All the villages in the country must be provided internet connectivity. This will not only solve the problem during pandemic but also provide ways to blend offline and online education. In addition, students would

be able to get benefitted by the digital units developed by EdTech companies using new technology like Virtual and Augmented Reality as clarified by Agarkar S. [8].

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