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Digital Divide and Access to Quality Education in the Time of Pandemic

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Abstract

Educational emergency has been a long-lasting repercussion of the covid 19 pandemic. When the mode of education drifted into a digitized form, it created a divide between students who could access online education and not. This research paper examines the catastrophic consequences of the digital divide in the education sector. Though education is a birthright, underprivileged students have always suffered in this regard. Here the researcher tries to find out how the digital divide has affected the lives of students in Samba District, Jammu and Kashmir. More specifically, it scouts out how students from poor families have accessed online classes, the difficulties they have faced, and how the online mode of education has affected academic interests. The researcher has employed a quantitative method for the study. The empirical data was collected through surveys among the senior secondary students. The whole Samba District is divided into five educational zones; the researcher has conducted surveys in two schools from every five zones. Statistical tests like t-test, chi-square, and correlation were used to establish the nature of the interconnection between the variables. Results derived from the surveys conducted show that the online mode of education has created a bifurcation. The students who belong to the Below Poverty Line suffered to arrange even the minimal facilities to attend their online classes. The unforeseen shift in the mode of education made the underprivileged students of this land victims. Many of the students have faced problems in subscription, and connectivity issues and even many have found it difficult to catch up with this innovation. These issues forced dropouts and academic interest among those who were underprivileged. This disruption weighed the inequalities already entrenched within the system.

Keywords: *Digital divide, Underprivileged, Educational Emergency, Online Education.*

Introduction

The COVID-19 pandemic is disrupting every sector all over the world. Mentally, physically, economically, and socially the pandemic disrupts life like cancer. Here the researcher is trying to analyse how the pandemic affects the education sector. Even before the pandemic, the country has been facing serious obstacles to providing proper education to all. Since the time of the RTE ACT (Right to Education) 2009, a developing country like India has been struggling to provide proper educational facilities to the people. The scenario became worse when the pandemic hit the country. The entire education sector has been traversed into digital, and the underprivileged people were pushed into crisis. Digital education creates a bifurcation between the students who can access the internet facilities and those who cannot hence sprouting out lots of issues in the so-called digital country. There occurred digital imparities within the population and it can be termed as the digital divide. Before mentioning the problems created by the digital divide, let's define what a digital divide is.

"The term "digital divide" refers to the inequality between individuals, households, businesses and regions of different socio-economic levels concerning their opportunities to access information and communication technologies (ICTs) for their use of the Internet" (Understanding Digital Divide). Mitchell (2011) in her research has found that society, technology, economics, politics, and the environment are the reasons behind the digital divide.

In the era of the information superhighway, accessibility to ICT is as important as fundamental rights. Statistical data provided by the

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National Sample Survey in 2017 - 2018 has shown that only 23.8% of Indians can access the Internet. The above survey has reflected how far human rights have been violated. The right to education, which is the basic right provided by the constitution of the country for its citizens, has been deprived of them by the discrepancies that occurred during this pandemic. When the country's entire education transitioned to the digital mode of classes during the pandemic, about 76.8% of Indian households were suffering to arrange their very basic survival needs. Free and compulsory education was guaranteed by the Constitution as a fundamental right. Unfortunately, at the time of the pandemic, the underprivileged population of the country who were not even able to find enough to eat were forced to own internet-accessible devices and even had to remit an amount for the monthly internet subscription. The above transition in the mode of education has created greater barriers in the education sector, especially for the underprivileged and marginalized group of children who have been deprived of even their basic needs since March 25, 2020, the beginning of lockdown. The survey conducted by the UNESCO Institute of Statistics revealed that nearly 100 million children across eight ages? cohorts would have drowned below the minimum proficiency threshold in reading in 2020 due to the pandemic (UNESCO Institute for Statistics, 2021).

As per the target set by the Sustainable Development Goal of the UN, "All girls and boys complete free, equitable and quality primary and secondary education." This has become a distant dream due to the lack of accessibility, acceptability, affordability, and applicability of e-learning to millions of children in India. (Chachande, 2020). This research paper tries to find out the impact of a pandemic on the Digital Divide and the Right to Education and also attempts to analyse the issues posed by pandemic situations in the Samba district of Jammu and Kashmir.

The case of the Samba district

Samba, a district of the Jammu and Kashmir region has a total population of 318,898 according to its census of 2011. The literacy rate of this district is 81.41%—specifically, 79.93% in the rural and 88.62% in urban regions. Samba district shares a borderline with Pakistan and it is a war conflict area. In this particular study, the researcher analyses the challenges faced by the senior secondary students who were studying across this region during this current pandemic situation with special reference to the online mode of education. Samba district covers 5 educational zones and the researcher selected senior secondary government schools from each zone. A quantitative survey is adapted to find out the issues faced by the students during the period.

Research Significance

Indian schools represent opposite ends of a broad spectrum, with well-funded hi-tech élite schools at one end, and poorly funded low infrastructure public schools at the other. Any discussion on school-going children cannot ignore discussing these gaps. The study understands the significance of the problem faced by the students as part of digitalisation. The sudden shift from the offline mode makes them confused and it became difficult for both the students and teachers to adjust and also, the damage to the concept of free education. This study tries to find out the issues faced by students during the digital education period and how they affect their academics.

Review of Literature

The COVID-19 pandemic and the following lockdown create a lot of uncertainty and challenges in human life. The waves also affected the education sector, mainly faced with challenges to ensure proper facilities for the students to attend online classes. This digital divide leads to the violation of RTE.

Fredman's (2021) paper examines and explains the legally binding obligations concerning the right to education and non - discrimination, which should provide the basis for governments to determine their priorities and allocate their already strained resources for emerging from the pandemic. The paper also mentions that the pandemic situation has magnified and intensified pre-existing inequalities in the education system, lack of internet, computers, parental support and other infrastructural facilities exacerbate the disparity. As a solution for these issues, the researcher continuously argues that the state must provide maximum available resources, and also actively advise for public-private partnerships (PPP). The researcher draws the concern that "the loss of education during the pandemic has been a heavy burden, and its consequences will linger in years to come".

Bannykh and Kostina (2018) published an article mentioning the impact of the digital divide on the development of the territory. A sociological survey and secondary data analysis were carried out to find out the problem. The article concludes that the digital divide is not only an individual issue but also a social problem. The digital gap in education affects the knowledge economy indicators and accordingly the development of the territory. Towards the conclusion, the researcher mentioned the consequences of the digital divide as under development in terms of economic and social, unfair environment for competition, and lack of information. Digital inequality is not only a technical or economic problem but also a serious social problem.

Similarly, a study conducted in Washington state concluded that the digital divide impacts the opportunities for participation in social and economic arrangements, which may be a threat to social and economic justice. Society is becoming increasingly integrated with ICT so the individuals who are not able to use the technology to access these social structures are excluded from participation in society and it leads to social and economic injustices. Here also the researcher suggests corporate ownership, government policies, and continual development of new technologies as the solution. (Mitchell,2002).
(DiMaggio & Hargittai, 2001) the study titled Digital Divide to Digital Inequality mentioned that internet penetration in the education system increases digital inequality.

Based on the data they conclude that five dimensions lead to this inequality in equipment, the autonomy of use, skill, social support, and the purposes for which the technology is employed. Another researcher substantiates the point and added in the case of the digital divide the spatial is one of the important factors. Between urban and rural areas also in developed and developing countries the diffusion of the internet and the access to the internet is different (Castells, 2001).

In collaboration with World Economic Forum Modi and Postaria (2020) inspect how covid 19 deepens the digital divide in India. E-learning system relies on the availability and accessibility of technology, but the survey provided by the Ministry of Rural Development found that only 47% of Indian households receive more than 12 hrs of electricity. underprivileged backgrounds are probably going to capitulate to inadequacy and a lack of

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adaptation, either because of the inaccessibility of technology or the low education of their parents to guide them through tech-savvy applications. The study concludes that the digital divide directly leads to the volition of RTE. Indian studies related to the digital divide also clearly mention that the spatial differences in economic stability and social status are distinguished by the availability of the internet and further facilities. The students from the deprived group are not able to choose the online mode for their education, so when the entire country changes the education mode, it leads to human rights volition (Venkataswamy,2015).

The crucial discussion regarding the digital divide proves that socio-demographic variables are one of the major reasons behind digital inequality, and the problem is as big as the violation of fundamental rights.

Hypothesis

HO1: Students who hail from poor families are not able to access online classes and it is denying the right to education.
HO2: Online mode of Education affects academic interest

Methodology

This research explores internet use and digital inequality existing among senior secondary students from poor family backgrounds. This study reports the findings from fieldwork conducted in five senior secondary Schools in the Samba district. The total samba district covers five education zones Ghagwal, Puramandal, Ramgarh, Samba and Vijaypur. From each zone, the researchers selected one school for data collection. Systematic random sampling was adopted to select the samples.

The students from the interior area were selected for the study, it is important to know about the problems faced by them in the time of digital mode of education. The selection attempted to ensure representation in terms of gender, age group, family background (farmers, migrant, skilled workers), and the area they belong to Therefore, surveys were held with 171 children comprising an equal mix of boys and girls in senior secondary school.

A questionnaire prepared with 30 questions aimed at understanding the sociological dimension, access, awareness and interest towards digitalisation was prepared. To understand the sociological dimensions, questions about gender, age, education, family background, levels of parental education and employment, social class, family structure and education, and age of siblings were included. To determine the availability, the number of years of internet use, questions about the perceptions, and whether they were sharing the mobile/computer with their sibling were asked. To understand the academic interest, questions were asked about the time of online classes and other social media usage.

DATA ANALYSIS

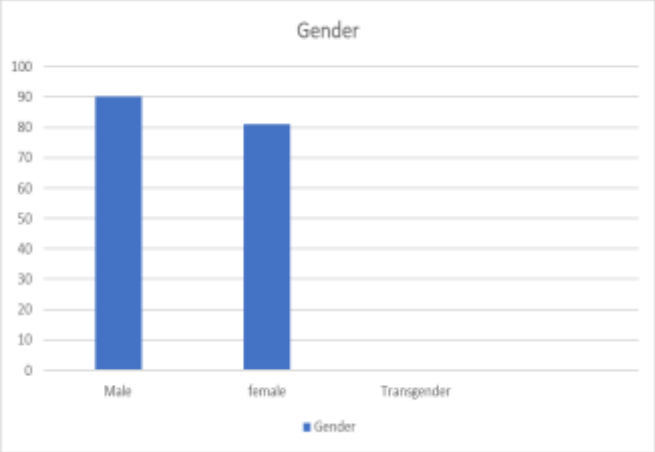
The learning environment and the right to education were interconnected to each other. Lots of studies are proving that learners will be influenced by the curriculum, instructors and learning environment (Yan and Kember 2003). This is appropriate in the case of digital education. After the covid hit the country changed the academic mode from offline to online and it may lead to the denial of the right to education. The present study tries to analyse the issues faced by students during the online mode of education and how that affects their academic interests. The ultimate aim of the study is to find how digital education connects with the right to education and students' academic interests.

The study was conducted among the senior secondary students in the Samba district. After appropriate sampling procedures, it was decided to collect responses from 171 samples through the questionnaire survey.
The survey questionnaire included questions on two areas digitalisation and the right to education and academic interest. The data were analysed using SPSS ver. 20 and findings are presented in this chapter. The descriptive statistics and test results were presented in forthcoming sessions

SAMPLE DESCRIPTION

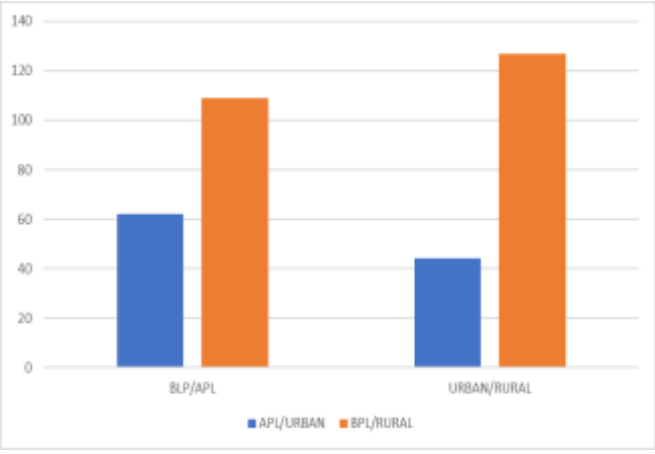
The sample for the study consisted of 171 senior secondary students in the Samba district. From the Ghagwal Zone, 30 data were collected, and from Purmandal Zone 34, Ramgarh Zone 39, Samba Zone 32 and Vijaypur Zone 36 samples were collected.

Table 1 Gender



The entire sample consists of 90 male students 81 female students and zero transgender. Among the total number of students, 62 belonged to APL and 109 Belonged to BPL. A higher number of the students are from the BPL community. Another demographic data proves that most of the students are from rural settlements. Among the total number of students, 44 were from Urban areas and the rest 127 were from Rural settlements.

Table 2: Urban/ Rural and BPL/APL



Economic Status and Availability of Digital Education

By Measuring the differences in the level of economic status with the availability of digital education; it was found that the BPL and APL students show differences in accessing digital education after performing an independent sample t-test is given in Table 3

The difference in digital availability concerning access to digitalisation between APL and BPL was found after performing

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an independent sample t-test in the data set. BPL students suffer more (M=3.578, SD=.7852) than the APL students (M=3.180, SD=.1270) and this difference in the mean score of availability of digitalisation is statistically significant. Availability of digitalisation was measured with four questions with two responsible choices. In total 0 and 4 as maximum and minimum scores. Students who belong to the BPL have a negative mean score for the availability of Digital classes which indicates that they were not able to freely access the internet because of the status of life. Students from poor families are not getting a proper education at the time of the COVID-19 period. When compared to BPL students the situation of APL students is much better.

Table 3: Economic Status v/s Availability on Digital Education

	Status	Mean Score	Std Deviation	Std. Error Mean	*T*	Df	Sig (2-tailed)
Digital Access	**BPL (109)**	**3.578**	**.7852**	**.0752**	**2.876**	**168**	**.005**
	APRIL (61)	**3.180**	**.9918**	**.1270**			
	Total (171)						

*** p< .05**

Settlement and Availability of the Internet

Measuring the differences in the settlement area with the availability of digital education. Rural settled students and Urban settled students show differences in the access to digital education found after performing an independent sample t-test is given in Table 4

The difference in digital availability concerning access to digitalisation between Rural and Urban was found after performing an independent sample t-test in the data set. Rural settled students suffer more (M=3.484, SD=.8602) than the Urban settled students (M=3.286, SD=.9445) and this difference in the mean score of availability of digitalisation is statistically significant. Availability of digitalisation was measured with four questions with two responsible choices. In total 0 and 4 as maximum and minimum scores. Students who belong to the Rural have a negative mean score for the availability of Digital classes which indicates that they were not able to freely access the internet because of the status of life. Students from rural settled families need to get a proper education at the time of the COVID period. When compared with rural-settled students the situation of urban-settled students is much better.

Table 4: Settlement and Availability of Digital Education

	Status	Mean Score	Std Deviation	Std. Error Mean	*T*	Df	Sig (2-tailed)
Digital Access	**Rural (128)**	**3.484**	**.8602**	**.0760**	**1.267**	**168**	**.207**
	Urban (42)	**3.286**	**.9445**	**.1457**			
	Total (171)						

One-way ANOVA with Parents' Occupational and Digital availability

A way ANOVA test was run to determine the difference between the availability of the Internet with the occupational status of the parents. Table 5 shows mean scores of internet availability with parent's occupation. Data shows, that students whose parents are in daily wage jobs are not able to access the internet like the other group (M= 3.571, SD= .7865). The students whose parents have Govt job shows the lowest score and it indicates the availability of the internet of much better than the other group (M= 3.083, SD= 1.1645). The availability of the Internet was measured with four statements and it carries 0 and 4 as maximum and minimum scores.

Table 5: Parents Occupation v/s Availability of Internet

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Descriptive Statistics						ANOVA Results				
	Parents Occupation	N	Mean Score	SD	Std. Error Mean	Between/ Within Groups	sum of squares	Df	F	Sig (2-tailed)
Availability of Internet	Govt. Sector	12	3.083	1.164	.3362	Between Groups	4.889	3	2.132	.098
	Daily Wage	98	3.571	.7865	.0794					
	Private Sector	44	3.318	.9344	.1409	within groups	126.900	166		
	Business	16	3.188	.9811	.2453					
	TOTAL	170	3.435	.8831	.0677	TOTAL	131.788	169		

Academic Interest

As part of checking academic interest, it comes to be known that more than half of the students are losing their academic interest due to digital education. Among 171 students 90 students were marking, they lost interest in academics due to digitalisation. The academic interest was measured with one statement and it carried an option of Yes and No.

Pearson's Correlation

To determine the relationship between the variable's availability of the internet and the academic interest of the students a Pearson's product-moment correlation was performed. The data shows a low positive correlation. That means, as the availability of the internet increases the academic internet also slightly increases.

There was a positive correlation between the availability of internet and the academic interest. The Pearson correlation is .034 and the significance is .658. That means the two variables are statistically significant. hence, the hypothesis that digitalised education leads to the loss of academic interest (H 2) is not accepted.

Table 6: Pearson's Correlation between the Availability of Internet and Academic Interest

	Mean	SD	N	Pearson Correlation	Sig.(2-tailed)
Academic interest	1.75	.902	170	.034	.658
Internet availability	1.98	.818	170		

Gender and Academic Interest

Measuring the differences in the level of gender with the academic interest an independent sample t-test was conducted. After performing the independent sample t-test in the data set, the result shows that their numbers are not statistically significant. That means there is no relationship between academic interest and Gender.

Table 7: Academic Interest v/s Gender

	Status	Mean Score	Std Deviation	Std. Error Mean	*T*	Df	Sig (2-tailed)

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Academic Interest	Female 81	1.60	.958	.106	-2.060	168	.041
	Male (89) Total (171)	1.89	.832	.088			

Economic status v/s Academic Interest

Measuring the differences in the level of poverty line with the Academic Interest. BPL students and APL students show differences in access to digital education after performing an independent sample t-test given in the table Difference in academic interest concerning APL and BPL students was found after performing an independent sample t-test in the data set. BPL students suffer more (M=1.80, SD=.890) than APL students (M=1.67, SD=.926) and this difference in the mean score of academic interest is statistically significant.

Academic interest was measured with three questions with two responsible choices. In total 0 and 3 as maximum and minimum scores. Students who belong to the BPL have a negative mean score for academic interest which indicates that they lost their academic interest because of the status of life. Students from poor families are losing their academic interest due to digital education. When compared with BPL students the situation of APL students is much better.

Table 8: Economic Status v/s Academic Interest

	Status	Mean Score	Std Deviation	Std. Error Mean	*T*	Df	Sig (2-tailed)
Academic Interest	APRIL 61	1.67	.926	.119	.873	168	.384
	BPL 109 Total (171)	1.80	.890	.085			

FINDINGS AND CONCLUSION

The present study based on the Digital divide and the right to education try to find out mainly two objectives one is how students from poor condition adapt to online education during covid 19. And the second one is whether the online mode of education affects the academic interest of those students. A survey was conducted among 171 students from the Samba district to find out the same. A questionnaire was prepared with 30 questions to find out the results of the two objectives. Questions are mainly focused on sociological dimensions, the availability of the internet and the student's academic interest after digitalized education.

Among the 171 samples, 90 were male students and 81 were female students. It indicates that the majority of the senior secondary students in this region are male. Also, 109 students from the total sample are belonging to BPL. Another demographic variable points out that the majority (127) of the students are from rural areas.

To find the first objective independent sample t-test was performed with the availability of digital education and the economic status. And the results prove that the students from the BPL community are facing a lot of issues regarding digital availability. They are not freely able to use the internet therefore creating a gap in their academics. Another independent sample t-test was performed with settlement and availability of internet, and the results show that the students belonging to rural settlements are suffering from to access proper internet than their counterparts. The digitalization of education, if implemented without addressing these concerns, effectively denies kids from marginalised backgrounds their right to study. Furthermore, in connection with the same objective one-way ANOVA test was performed with parents' occupation and digital availability, here the results indicate that students whose parents are daily wage employees failed to arrange proper facilities for their children. Results of the test show that the hypotheses; Students who hail from poor families are not able to access online classes and it is denying the right to education has been accepted.

Beyond the loss of lives and livelihood, the COVID-19 pandemic creates an education emergency in the country. It taints the prospects of children and creates a negative impact on them especially the children from the deprived groups. Even after 75

years of independence India still faces a huge bifurcation based on caste, economics and status and this bifurcation humongously affected education furthermore, the covid 19 scenario crashed the education system. All the above result clearly shows how the education system collapsed during the time of the pandemic among students from the underprivileged category.

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The second objective academic interest was tested with one statement question among 171 students 90 students were marked they lost their academic interest due to digital education. After performing a t-test with economic status and academic interest, the students belonging to BLP lost their interest than their counterparts. However, there is no significance with gender and academic interest. A Pearson's correlation was performed to understand the reason behind it. However, there is no significance between academic interest and internet availability. The entire study concludes that the digital divide among students leads to the violation of fundamental rights. The study proves that the alternative mode of education adopted by the govt at the time of the pandemic was injust~~ice~~ and unequal. The development of a nation is directly proportional to the growth and development of its future generation, therefore such methods implemented without proper research and understanding of the available resources at hand lead to failure of the primary objective of the Right to Education.

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