EFFECTS OF COVID-19 ON EDUCATION & ITS SHIFT FROM FACE-TO-FACE TO VIRTUAL

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Abstract

Covid-19 has strongly influenced the education system globally as it has transferred the face-to-face system into digital system of education. The aim of this study understands the influence of Covid-19 in education system modernisation to digital process. Data suggests that almost 284 million students have been affected due to Covid-19 issue in maintaining proper learning. Importance indicates individual and bias free strategy of education along with modernisation of education system globally. The study has collected valuable data and information by conducting a survey among 50 respondents from the educational sector. The results have found that the majority of people agree that digital literacy has brought limitations in terms of new features and tools. However, it can also be assessed that face-to-face learning is limiting connections between students. Hence, future scopes and limitations for this could also be identified for future research.

Keywords: "Covid-19", "Virtual learning", "Digital literacy", "Primary data collection", "Survey".

1. Introduction

Covid-19 has strongly influenced the global education system by shifting it from face-to-face to digital processes. This study will provide complete details of the influence of Covid-19 on education and the possible digital process for asinine education.

1.1 Background

Covid-19 has strongly influenced the education system due to social distancing problems, and issue of live classes in education institutions. Recent data indicates that almost 284 million learners globally have experienced the negative influences of Covid-19 in maintaining the proper process of education (Statista, 2020).
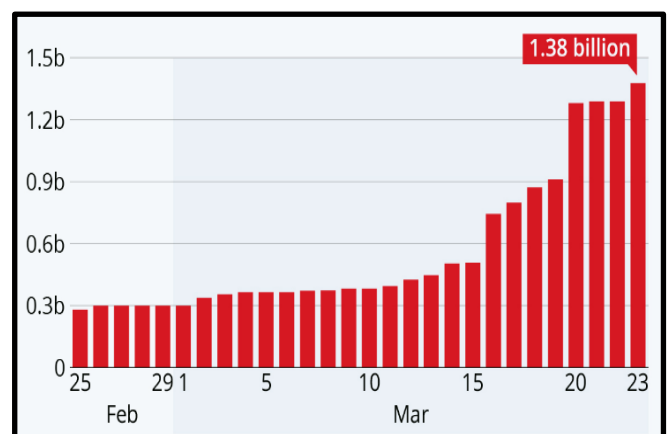

Figure 1: *Covid-19 influence on learners globally*

(Source: Statista, 2020)

Therefore, virtual conversion of the education system via online process is an important aspect that has helped in maintaining the education process, especially during Covid-19 situation. According to Pando (2018), virtual education

can be termed as a revolutionary process that has provided a positive influence on teaching and learning process. Therefore, proper use of technology and the internet in maintaining virtual learning is beneficial enough in providing better support for students to learn things during this pandemic situation.

1.2 Research aim

The aim of this research indicates,"To analyse the effects of covid-19 on the education system and shift of the education system from face-to-face to virtual education process."

1.3 Research objectives

The objectives of the study are mentioned below.

RO1: To analyze the impact of Covid-19 on the changed educational system.

RO2: To measure the influence of virtual learning on the education system.

RO3: To critically analyze the impact of digital literacy in changing education.

RO4: To use survey questionnaires as a primary data collection method of the study.

1.4 Hypotheses

The hypotheses of the study have been mentioned below.

H0: There is no effect of Covid-19 on education and the shift of it from face-to-face to virtual.

H1: There is an impact of Covid-19 on education to change it into virtual platform from face-to-face.

1.5 Scope of the study

The scope that this study provides is to understand the negative influence of Covid-19 on the education system globally along with the importance of technology advancement in maintaining the education system virtually.

2. Literature review

2.1 Effects of Covid-19 education system

Covid-19 has strongly influenced the education system globally as it has created barriers in maintaining normal face-to-face education systems for students. According to Rashid &Yadav (2020), Covid-19 has strongly influenced education as it has maintained a downward spiral in the world economy as well as the education system. The Covid-19 influences the rate of dropout of students, improper learning, provides challenges regarding maintaining effective teaching strategy for teachers, and increases the possibility of utilising the digital process for education to maintain an online education system. In contrast, Pokhrel & Chhetri (2021) have opined that online learning is important in modern-day learning, especially during the pandemic situation that has made the education system convenient and easily accessible to every student. Therefore, it can be determined from the above fact that the popularity of online education has increased strongly during Covid-19 has reduced the face-to-face education strategy to make the education system available for every student.

2.2 Importance of virtual education system during Covid-19

Virtual education is important especially during the pandemic as it supports online facility of learning without any bearers of face-to-face learning that is an issue during the pandemic. According to (Moreira & Rodríguez (2021), virtual methods of education can be termed as an important challenge regarding constructive method implementation that can help in improving the learning process.
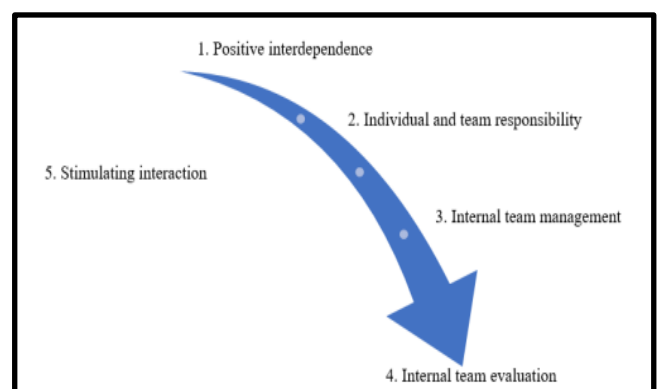

Figure 2: *Online learning process*

(Source: Moreira & Rodríguez, 2021)

Therefore, a virtual learning method during the pandemic is helpful enough in maintaining responsibility for an individual in gathering knowledge as well as supports stimulating

interaction. In contrast, Zeide & Nissenbaum (2018) have argued that virtual learning helps in automating the instructions in learning that supports the automotive process of education for students. Therefore, it can be termed as an important aspect in the modern lean ring during the pandemic to maintain effective process of learning process globally.

2.3 The strategy used for virtual education system during Covid-19

Virtual learning uses different strategies such as the use of the internet, social platforms, or other private websites or platforms of educational institutes to guide students. Both the real-time and self-paced strategies of online education can be termed as an important aspect in maintaining an online education system. According to Kamińska et al. (2019), VR is termed as an advanced strategy that supports a computer-generated strategy in maintaining education strategy for professional development.

Holmberg's theory can be termed as an important aspect that supports personal communication management between instructors and the respective learners in online learning systems. According to Holmberg et al. (2021), spiritual perspective can be termed as an important ecological understanding that supports the exploration of new concepts for study. Therefore, it can be termed as a digital learning method that is beneficial in the growth of an individual's knowledge largely with the improvement of ecological understanding. Virtual education helps to maintain the process of a bias-free education system for which a better system for providing education along with a selection of skilled teachers are necessary.

3. Methodology

3.1 Data collection method

The data and information for this study have been collected by approaching a primary data collection method. According to Saunders (2018), the primary data collection method is helpful in finding the most relevant data for a study. The study has conducted a survey by distributing questionnaires among the selected participants. This has helped in saving the time and effort of both the researcher and the respondents.

3.2 Population and sampling

The population for this study has been chosen to be 100 as it is considered to be a standard size. Moreover, the statistical evidence is enhanced and tends to be accurate with this population. As per the view of Kothari (2017), the sample size must be carefully chosen as the valuable data depends on this. Hence, the study has approached 50 participants from educational backgrounds globally.

3.3 Data analysis method

The study has selected Statistical Package for Social Sciences (SPSS) as a tool for data analysis in this study. As mentioned by Flick (2018), SPSS helps in developing complex data and information collected for a study. Moreover, the study has been able to collect original data and analyze them with accuracy by considering this analytical tool.

3.4 Reliability and validity

The study is valid and reliable as it has collected original and valid data to be analyzed in the later parts of the study. The study has also been capable of providing evidence for each hypothesis and fact. Hence, the study has justified itself and tried to give proof by numerical and statistical facts.

4. Findings and analysis

Descriptive analysis

Objective 1

Table 1: *Impact of Covid-19 on the education system*

Statistics

		1. What is your gender?	4. Do you think that Covid-19 has impacted the education system globally?
N	Valid	50	49
	Missing	0	1

Mean	1.52	4.04
Median	2.00	4.00
Mode	2	4
Std. Deviation	.505	.957
Variance	.255	.915

(Source: SPSS)

The above table has analyzed and provided evidence for the impact of the pandemic on the education system globally. Different values in this table have explained the minimum, medium, and maximum values. The mean value is 1.52 in this study which is representing the minimum value in this case. On the other hand, the median value is 2.00, which indicates the medium value, and the mode value is 2, which observes the maximum value. Hence, it can be mentioned that the majority of the respondents think that the pandemic has changed and impacted the global education system.
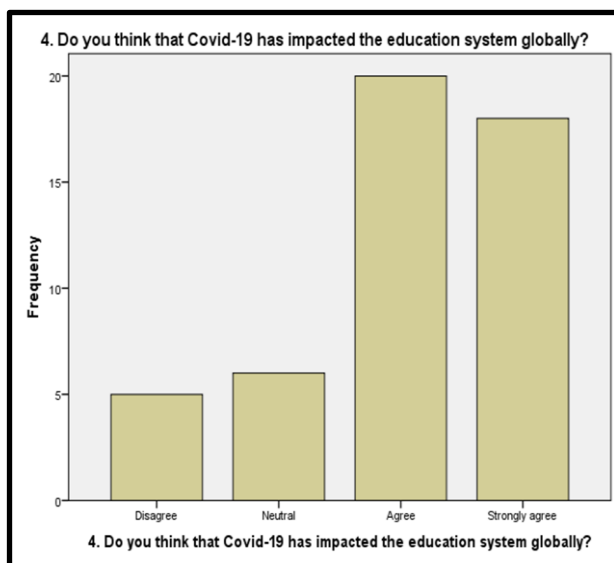

Figure 3: *Responses on changes in the education system by Covid-19*

(Source: SPSS)

The above figure has shown responses to the changes brought by Covid-19 in the global education system. As commented by Shahzad et al. (2021), the education system has seen a massive change as it has shifted into another dimension by approaching the virtual world. The graph is showing that   20% of the respondents

have agreed, along with 18% of the selected participants has strongly agreed with the fact.

Objective 2

Table 2: *Influence of factors to change the education system*

Statistics

	2. Are you related to any educational background?	6. Has the virtual concept of learning changed the education system?	5. Is the educational system impacted by several changing factors of the pandemic?
N — Valid	50	50	49
N — Missing	0	0	1
Mean	1.40	3.78	3.88
Median	1.00	4.00	4.00
Mode	1	4ᵃ	4
Std. Deviation	.495	1.148	.927
Variance	.245	1.318	.860

a. Multiple modes exist. The smallest value is shown

(Source: SPSS)

The above table has observed different values regarding the impact of several factors on the education system all over the world. It has been noted that the mean value in this analysis is 1.40, which has shown the minimum value of the responses. However, the medium and maximum values are different from being observed. The median value is 1.00, and the mode value has been noticed to be 1 that is showing at the efficacy of the participants in their responses. Therefore, it can be measured that the responses are indicating the fact that respondents think that these factors have impacted largely on the global education system by shifting it to a virtual system.
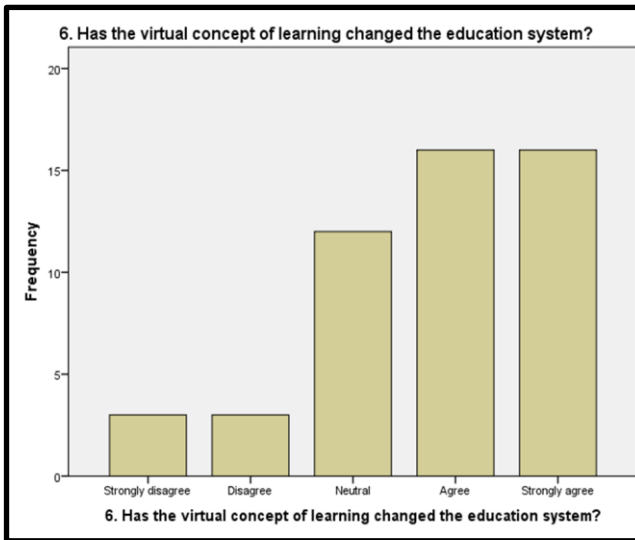
Figure 4: *Influence of different factors on education*

(Source: SPSS)

The responses regarding the influential factors on education have been shown through the above graph that is representing important understanding. As suggested by Lucey& Johnston (2020), there are several different factors that have been identified to impact on the education system in different countries. In this case, 16% of the selected participants have agreed to the fact that these factors play an important role in casting impact. Another 16% of the respondents have also strongly agreed with this fact.

Objective 3

Table 3: *The impact of digital literacy in the education system*

Statistics

	3. How long have you been working in the educational sector?	4. Do you think that Covid-19 has impacted the education system globally?	7. Does digital literacy have impacted children in their education?
N Valid	48	49	50
Missing	2	1	0
Mean	1.58	4.04	3.78
Median	1.00	4.00	4.00
Mode	1	4	5
Std. Deviation	.679	.957	1.200
Variance	.461	.915	1.440

(Source: SPSS)

Responses and minimum, maximum values have been analyzed through the above-mentioned table, which justifies the third objective of the study. The mean value, in this case, has been found to be 1.58, which regards the minimum value of this particular area of analysis. The median value has been measured to be 1.00, whereas the mode value is 1, which indicates towards the responses and their contribution to this study. Hence, it has shown the fact that the participants of this study agree that digital literacy has changed the educational structure to an extent.
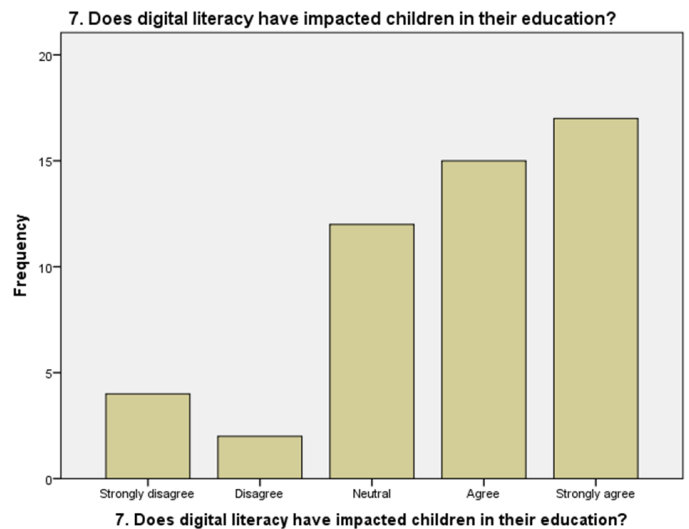

Figure 5: *Digital literacy and its influence on education*

(Source: SPSS)

The above figure has depicted that 15% of the respondents have agreed to the factual data, and another 17% have strongly agreed to it. Thus, it is proving the fact that digital literacy is a new concept that has compelled to change the educational dimension to an extent.

Objective 4

Table 4: *Changes in learning behavior of students*

Statistics

	2. Are you related to any educational background?	5. Is the educational system impacted by several changing factors of the pandemic?	9. Has digital literacy been compelled to change learning behavior?
N Valid	50	49	50
Missing	0	1	0
Mean	1.40	3.88	3.46
Median	1.00	4.00	4.00
Mode	1	4	4
Std. Deviation	.495	.927	1.073
Variance	.245	.860	1.151

(Source: SPSS)

The learning behavior of students has been seen substituted as digital literacy has brought new concepts and features. The mean value is 1.40 observing the minimum value of the gathered responses on this particular question. On the contrary, the median and mode values for the study are 1.00 and 1, respectively. Thus, the ultimate result is suggesting that learning behavior has seen a rapid change due to these factors.
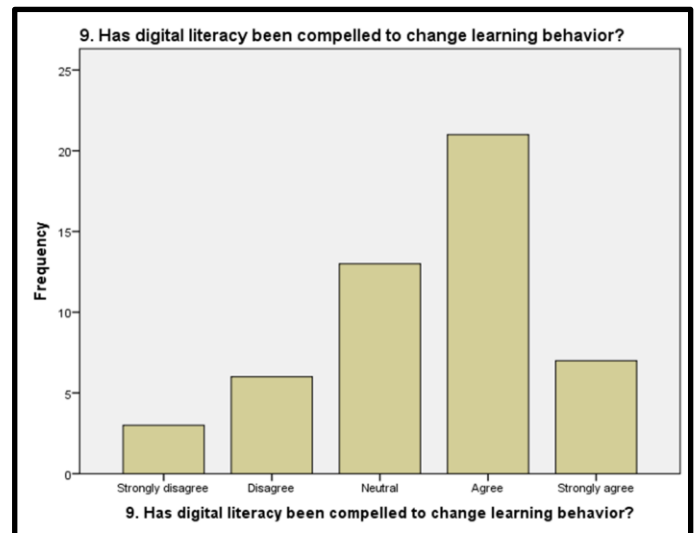
Figure 6: *Digital literacy and its impact on learning behavior*

(Source: SPSS)

The majority of the people at 21% in this study have agreed that digital literacy is crucial in changing the learning behavior of the students. As discussed by Mahmut (2020), digital literacy has come with several other tools and features that are different from the traditional learning method. In this way, the learning quality and interest of the students also change.

5. Discussion

The study has focused on exploring different factors that have compelled to change of the global educational structure. As demonstrated by Douglas et al. (2020), digital literacy is a new and emerging concept that has developed during the time period of Covid-19. Social restrictions have been measured to be the key reasons behind the popularity of digital literacy. Hence, the face-to-face teaching-learning process has been shifted to a virtual model. The study has also found that several schools and universities prefer this digital literacy and the entire concept as it is enabling them to generate a new educational system.

The study has found that education has continued to be in each student even during the lockdowns in different phases. In this case, digital literacy has come to an aid, and the students have been able to learn effectively. As illustrated by König et al. (2020), students have

seen a transition through online classes that have provided them with new scopes and opportunities to learn. The study has also suggested that the respondents have mostly agreed that the learning behavior of the students has gone through a drastic change. On the other hand, as argued by Händel et al. (2020), the closure of schools and all the educational institutions have created distance as it depends on virtual forms. Therefore, education has seen a change that has altered the education strategy to an extent.
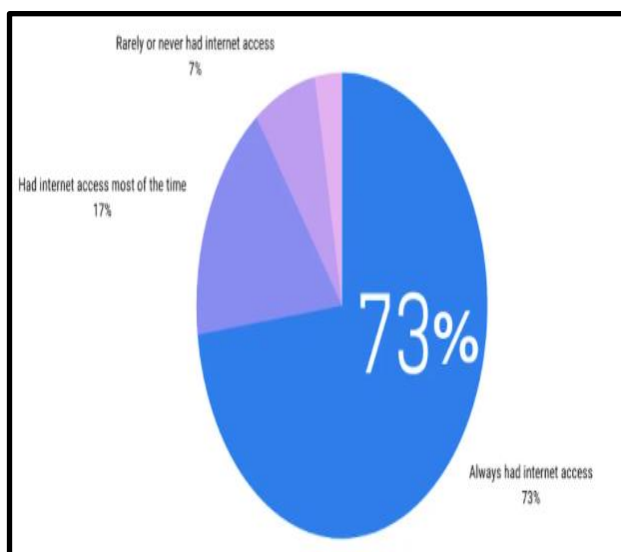

Figure 7: *Percentage of students with internet connection at home*

(Source: Stream, 2022)

The above figure shows a graphical representation of the students who have access to internet connections at home. As per the view of Harries et al. (2021), digital literacy can cause obstacles for some students as it involves technological devices and internet connections. It has been reported that 7% of the students do not have internet access in their homes, which affect their education during such times (Stream, 2022). On the other hand, 73% of the students have access to the internet most of the time, which has helped them in having a smooth virtual teaching-learning process.
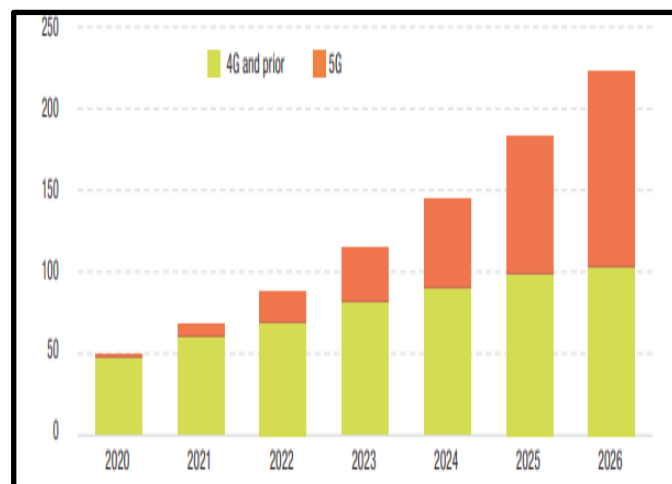

Figure 8: *Internet connectivity on the global basis*

(Source: UNCTAD, 2022)

The above chart represents the percentage of people who have access to internet connections from the past several years. It has shown that 5G connection will take place in the near future as it will take over the connectivity of the whole world soon. The study has also discussed several other perspectives that are helpful in demonstrating specific changes in the education system due to the pandemic.

6. Conclusion

The study has explored different ideas and concepts, such as digital literacy and other related terms that have transformed the educational system into a virtual process. It has been found out that most of the respondents chosen from different educational sectors of the study agree with the factual data. Moreover, it can be said that the study has been able to focus on the reasons behind this rapid transformation of the education system. The primary data and information collected for this study have exaggerated these facts. Furthermore, the data analysis process has strengthened these facts by providing evidence. Hence, it can be concluded that Covid-19 has left a major impact on the global educational structure and turned it into a virtual teaching-learning zone.

7. Limitations and future scope

7.1 Limitations

The study has found some limitations as it completely depends on a primary data collection method. As stated by Donthu&Gustafsson (2020), existing data and information in a study helps in identifying gaps in the previous studies. A study can develop itself and focus on other important unexplored factors by considering the existing data. Hence, this study lacks in finding potential literature gaps from previous works on the same topic. Moreover, the study could not approach the methods that can be considered to mitigate the problems in the current scenarios. As depicted by Chertoff et al. (2020), mitigation of current problems is inevitable as they help in conducting new scopes in a study. Thus, certain aspects and issues could have been mitigated during the course of the study that would increase its validity.

7.2 Future scope

The study holds some future scopes and opportunities for further study as certain areas have remained unexplored in this study. The study has future scopes in the context of finding relevant existing data which could contribute to data analysis. According to Sintema (2020), a study is required to focus on generating informative data on the given topic. In this way, the topic can be justified, and further studies can be made in this area for more discussion. Therefore, the study has been able to provide relevant, original, and authentic data that future researchers can acknowledge for their studies.

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