# Covid-19 and Rural Education, a perspective on Global Education System: AMSTAR Tool as Systematic literature Review

Faheem Uddin Syed[1], Maryam Baloch[2], Muhammad Haris Awan[3]

*1: Business Economics and Consultancy; Universita degli studi di Messina*
*2: Department of Economics; Universita degli studi di Messina*
*3: Business Administration; Federal Urdu University of Arts, Science & Technology, Islamabad*

***Abstract:***
*Discussing the effect of the lockdown on students belong to countryside, it is seen that networks that are very far off, defenseless and separated. In this study the researcher has opted for a systematic literature review of an issue that is not yet investigated that is the Covid-19 impacting the rural education and therefore the aim of this research is to explore the issue and aspects that are related to it. For data assessment and validation, AMSTAR tool is used with the help of which the articles get assessed based on the checklist criteria and selected for the purpose of the creation of the systematic literature review. Results show different dimensions impacting the rural education during and after Covid-19 outbreak. The consequential effect is found in youngsters in poor and low-asset settings in rustic zones. Some significant issues that we should manage will be a drop in the learning levels, understudies dropping out of school and guardians hauling their kids out of schools because of monetary pressure.*
***Keywords:*** *Covid-19 lockdown, Rural Education, School closure, Rural students, countryside technology, Online teaching, Online learning, Systematic literature review, ARMSTAR tool*

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## I. Introduction

A report on the educational institution and students got affected by the Covid-19 pandemic have revealed that due to school closure in rural countries and area [1]. 32 billion of students alone in India (a country with large rural spread) have been affected. In Asian hub about 84 percent public lives in the areas under development that are categorized as rural one [2] and of them only 70 percent goes to school at government level. Because of the said circumstances and other related factors the rate of student dropouts have intensified [3]. As Reddy and Sinha proposed that the related factors are more linked with the students belong to poor rural areas which make the student dropout rates augmentation [4]. The factors include unemployed parents or loss of job of parents, economic pressure, lower capacity to earn versus large family size, the higher opportunity cost for the rural family in sending the child to school. All of the mentioned factors resulted in the increased labor market for the children that gives rise to child labor [5].

On a gender partiality role in mainly developing nations the girls are having more dropout rates because they are meant to live and d household work and decision making. Such responsibilities on the female child also burdened increasingly when the maternal parent works more as a labor to decrease the economic pressure on the family due to lower income [6]. Essentially, these monetary stuns are probably going to greatly affect kids from networks that are underestimated based on their rank, clan and religion, and right now experience higher dropout rates. Therefore the change in the economic conditions due to Covid-19 shows the negative influence on the income and thus letting the children to get away from the education and learning [7]. Dropping out, thus, may prompt increments in kid relationships, abusive behavior at home, early pregnancies and a plenty of other improvement issues [8]. Without school charge waivers meanwhile, dropout rates are probably going to get additionally exacerbated as instructive costs become excessively expensive for some [9].

According to recent literature (UNESCO, 2020), Covid-19 has created a drastic impact in which 60 % of the student's inhabitants and almost 1 billion of apprentices has been affected. Moreover, the student populations of rural areas particularly affected, therefore the inequalities are intensifying by school's closure. Although, over time the education sector are converting into distance education ([10]. The first one is the comparison among face to face or direct learning with online learning and the second is the institution of online education in Covid-19 perspective [11].

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**Impact of School closure on education**

Past scholars concentrated on the impact on learning due to school closure. While certain authors focused on the school association's validity through the learning gap and pointed out some policy-making areas [10]. One of the studies in Sweden argued that International student assessment (PISA) test score and face to face learning has a significant connection [12]. According to [13], there is no significant relationship between performance and instructional time. [14] stated that due to COVID-19 pandemic in the US, the student experienced sixty-three to sixty-eight per cent of improvement in learning and thirty-seven to fifty per cent due to advancement in technology. According to a recent US study, two to nine per cent of rural students left the high schools due to school closure because of lack of resources [1]. These comparative studies highlight the significant impact of school closure is mostly faced by underdeveloped areas and intensify remaining disparities. For rural children, the loss in learning is related to bad performance. Furthermore, globally the cultural, commercial and educational features in indoor are going to in advancement [15]. The study in Ireland showed that outdoor activities between students enhance academic performance and effect on the characteristics of socio-economic [16].

Scant researchers also highlight the aftereffect of a pandemic on mental health and rural schools [17]. The central statistics office has studied on the satisfaction of people in COVID plague and confirmed that the people between 18-34 have minimum satisfaction level [18], and European nations closed their education institutes due to Covid-19 plague to minimize the range (Eurydice, 2020). Scant researchers indicated about the effect of virus extent through the closure of schools and particularly prolong consequences of school closure for underprivileged students [19-21]. There have been considerable arguments in the US on education loss especially in summer break because of decay in expertise and abilities and most of the summer camps focused on socio-economic gaps or cultural/race [22].

[14] studied on the learning loss in summer due to Covid-19 and found that in the United States almost 63 to 68 % of students resume the school with learning improvements in reading and 37 to 50 % especially related to math. Most of the students having previously academic achievements will likely to practice minimum loss in learning. According to [23, 24], the impact of school closure on teacher's capabilities minimizes the student's outcome and grades especially for underprivileged students and in urban schools.

**Altering mindsets**

According to [25] the mindset of people has been changed because of the pandemic and it changes from intimidation to originality. So, novel ways of teaching methods are going to start. Past research also investigated that the current education governance considered universal mindset [26]. The traditional mindset evaluates and resolved the matters alternatively extending them because of old ways [27].

**Education and Covid-19**

Covid-19 has approximately influenced the overall world's education system and around 1.25 billion population including students. Different education sectors such as schools, colleges and universities have been closed and suspending their exams, interrupt the overall education calendar, national and international exams cancellation, the decline in admissions and it creates education gap [28]. In the rural education system, students are facing emotional, mental disturbance and financial chaos due to loans (UNESCO, 2020). Besides, the government should take steps for students education funding, provides facilities to students who are suffering emotional and mentally [28].

According to various studies, Covid-19 exacerbates inequalities e.g. the more susceptible socio-economic groups which suffer from the Covid-19 are independent to the exposure of greater health threats, financial exposure, poor residential conditions during the lockdown periods. [29]. These nations have limitations because of debts maximization [30]. The entire world's population has been impacted by Covid-19 and employing a distinctive effect on the US or other national health system or education system [31]. Rural students faced education loss and this plague impact them emotionally and mentally in a longstanding [32]. Numerous scholars highlight that parents having maximum resources and skills can handle this plague and reimburse the adverse impact of school closure [19]. Moreover, the students having sophisticated and skilled parents get the advantage of them because they can employ a tutor and teach them separately in homeschooling [33].

According to [34] the students from an underdeveloped nation such as Pakistani, Indian, Bangladeshi and African facing maximum education gap and school closure increases inequality among them. The students or people from underprivileged areas have a lack of learning material and unable to support their students but they have maximum motivation for success [35].

Numerous scholars stated that school closures generates major drawback to students as well as forced towards distance education [36]. Past literature indicated that these issues impact on the students intrinsically; counting with uneducated parents and also from under-develop areas. A UK based study found that 30 % of the

population from rural areas joins distance education as compared to the learner from urban areas. It also clarifies that students from underdeveloped areas take more effort and time on learning as compared to the working class.

According to [37] other factors create discrepancy among schools across the globe such as work quality and the teacher's ability. A UK study also indicated about lunch formalities and the class difference in schools [37]. [35] provide literature about the gap between primary and secondary schools during COVID plague. This study elucidated that students from rural areas have inadequate resources and limited space at home to study. This divergence is also present in the school level as well as in indoor schooling. According to [38] indoor schooling depends on parent education and their involvement to enhance children learning as compared to uneducated parents.

A study in Netherland found that students from educated parents receive greater motivation and confidence as compared to uneducated parents [39]. However, the recent Irish literature based on 2808 primary schools principals argued that 40 % of parents having minimum qualification support their children, whereas 75% having higher qualification motivate their children for learning. [40] found that 63% of principals stated that school closure has a drastic impact on students. While 71% reported that it has not a major drawback and 79% believe that it has an adverse impact on students especially in rural areas.

[41] reported that schools closure creates difficulties for rural students and their parents and who lived in a congested place. They were also mentioned that the lack of digital resources impact on the student's learning and the parents having numerous responsibilities also effect on the learning [42].

**Role of Digital Technology**

Contemporarily, digital technology is one of the most crucial factors in people's activities i.e educational research. According to [43], the information can be stored, share and form on digital media. Today is the era of internet and the digital media platforms are CMS (course management system), Facebook, LinkedIn, Modular object-oriented dynamic learning environment (Moodle) and virtual database. These digital platforms help the students and teachers to continue their research, knowledge and support in academics in Covid-19. Scant research claimed that there is a greater improvement in academia due to technological innovation [44]. On the contrarily, Covid-19 incident increases the dependency of digital technology and the students completely depend on the virtual platforms to communicate, information search, research and manage the work to stay productive. This is also a drawback for rural students and teachers because of the lack of technological resources.

[45] testified Covid-19 in China and then widespread all over the world. The extent of virus covers all developed and underdeveloped nations till March and in April 1.5 million people were reported COVID-19 positive [45]. After that, the death ratio was around 450000 and 9 million were positive without treatment. The nation has been suffering from drastic issues including closure education, mental and physical health issues. It creates fear among teacher to travel from city to rural areas for teaching students. So, the education system was completely converted into digital classrooms, radio chat room and mailed curriculum. For example, native teachers in Mexico used DVD's and radio to teach rural area students because it is economical to purchase TV as compared to hire foreign ESL teacher.

In Lockdown government has imposed restrictions to the public or bound them in home and frontier their access towards institutions. Consequently, teachers and students innovate new methods of teaching and learning to be productive because of institutes' closure. Moreover, digital technologies play a vital role to facilitates both teachers and students in different ways i.e. CMS, radio recording, TV channels, video conference through Zoom, Text and video application, CMS, Moodle, WhatsApp, and virtual research database.

Government has announced teaching standards and curriculum for students. Teachers deliver or record the lectures via DVD, radio and cable television. Although, rural students can access those lectures and materials while it is applied in public or private sectors or those with no admission to any school [36]. According to [46] lack of assistance and interest in the education field can create conflict in groups to maintain their position. These pieces of evidence investigated the group factors that impact on the educational sectors, particularly to enhance the knowledge and abilities of students and teachers .In the meantime, other scholars argued about remaining factors such as social condition, safety, authority, interpersonal, intrapersonal, house condition and technology access motivate or de-motivate students and teachers to adapt changing in different circumstance ( [46]. Numerous scholars highlights that Covid-19 impacts on students learning as well as on teaching methods and explained about the disturbance in social life due to homeschooling[10]. The quality of education has been minimized and lasting drawbacks inequality because of different online ways of learning and evaluation [47]

According to [48], the education quality intensifies the need for online teaching methods that creates coherence among teaching and learning program. Additionally, the rural population has been influenced more due to lack of resources in Covid-19 pandemic. In advantage areas the people from below 30 reportedly

maximum levels of internet user and above thirty are the least internet users. Approximately, 95% of consumers utilized internet on daily basis and 65 % having an internet connection at home [14].

According to numerous scholars earlier the technology has an extreme impact in the educational institutions and its influence has been examined in the progression of education field and on students learning and enhanced the growth of teachers [32, 47]. So, the technology and IT facilities have been sustained, widely incorporated and promoted world widely [49].

The employment of ICT (Information and communication technology) in the learning manners improve the students' abilities and make them more responsible and flexible towards adapting novel learning ways to attain their goals [27]). According to [50] these types of prospects encourage teachers to maintain and deliver dynamic learning ways to facilitate learning methods. Elements influencing the quality of online education

Internationally, many education institutions transfer their education systems from traditional format to online learning [47]. According to [41] it is mandatory to identify the collaboration among students, teachers and technology. If teachers considered students centered methodology and considered learning process to encourage students by evaluation form, debates, discussion to analyze the conceptual change [18]. In traditional schooling, the incorporation of technology impacted the teaching approach and influences the integration of online teaching as well as flexible learning. [50] stated that the online teaching approach should meet the student's need and encourage the methods and ways of learning.

These modifications entail resistance and un-acceptance from the stakeholders[47]. According to previous literature, the teaching field contains maximum confrontation among professionals due to their lack of interest, status consciousness and absenteeism [46]. He also suggested numerous factors that influenced the modification in the education system and to enhance the teachers and student's knowledge, information and skills. Temporarily, many researchers identify other factors such as safety, social condition, employed condition, position, responsibility, and satisfaction, dedication and motivation play a vital role in changing adaption and implementation [46, 47].

Scant literature mentioned about the factors associated with teacher's mental, personal and legislative condition to stimulate their resistance. Meanwhile, [46, 50] pointed that numerous psychological factors such as anxiety, fatigue, mentally absenteeism or tiredness, worriedness and comfortability interchange their thinking toward change adaptation and insignificantly impact on their performance and satisfaction.

According to[18] in the school system, the change reception and elimination have been influenced by the teacher's commitment level with the students and parents. Moreover, the organizational factors are associated with their norms, culture, working condition, social connection and interpretation of requirements in change influence the teacher's approval and rejection of change[46]. Additionally, the adaptation of online learning has been influenced by providing clear guidelines to operate IT facilities and through motivation and involvement in remote learning[46].

**Homeschooling**

The education systems are responsible to polish the knowledge, abilities and capabilities of the students [35]. Deprived students attain prestige for education institution whereas they prevent the probability of prosperous students to secure respectable spots. On the other hand, education institutes play an essential role to create equality and provide opportunities equally to both privilege and under-privilege students ([48]

Due to extent information regarding the new ways of teaching and learning methods in distance education during school closure and how institutes are planned to monitor students in homeschooling. The maximum school's contribution minimizes the disadvantage of school closure and drives them towards learning and information. Moreover, the background of parents might un-influenced or meditate the student's learning due to home-schooling. To restrict the impact of school closure, teachers could start novel ways such as online lectures, DVD or radio recording, online channels, Zoom or other cloud-based materials to continue or monitor their students specifically in ESL.

It also controlled the inequality among rural and urban students and minimizes the gap in learning and teaching. Nevertheless, the online teaching methods and guidance varies from schools to schools and differ from resources such as online teaching knowledge, IT/Internet facilities, Computer learning, teaching quality and methods and staffing. Moreover, these resources impact on student's result and learning [35].

[51]elaborated about the UK school systems and they publish their performance yearly. So the decision of parents for deciding their children's school based on the report. According to [35, 52] the structure of Quasi-market influence the student's admission and wealthy parents move their children to praiseworthy institutes. Besides, poor students received un-trained, inexpert, unskilled and out of the focus staff probably in schools [38] .As a result, the students from underprivileged areas and disadvantage background receive minimum support from their schools in Covid-19.

Globally people made choices to educate their children while staying at home and this process encourages them to adopt digital technologies. In 2019 the ratio of students was almost 1500 in some of the

countries that preferred homeschooling due to lockdown in Covid-19 [42]. Due to this pandemic, all obligation of teaching and learning fell onto parents and blood relation. In Ireland, most of the parents also fulfil their responsibilities before Covid-19 and involved into their children homework and assist their formal learning [53] but this was not common for underprivileged areas. In some studies, it was also mentioned that students at the age of 15 did not need support from their parents [54].

Parents played an essential role in the children life and the standard and age of schooling require input from parents in their learning matters. In scant literature, the parent's educational background has also a significant impact on homeschooling in school closure [21]. If parents have a higher education level than they significantly demonstrate their children and support their learning outcome. This study also explained that adult students always prefer learning at school while younger always prefer homeschooling.

The IFS (Institute of Fiscal studies) made a comparison of 2 UK studies and found the impact of careers investment in homeschooling and conclude that high-income parents spent almost 5.8 hours on learning activities and poor income parents spent 4.5 hours in students learning activities [19]. According to [43], 73 per cent of parents provided IT facilities for their children and they spent almost 11 hours a week for learning. The 61% of digital resources and platforms provided by educational institutes, 49% of digital resources establish by parents and 39% of children face demotivation.

The students that participated in additional programs from school such as learning support, ESL (English as a second language) and literacy through DESI programs significantly influenced from school closure. Moreover, rural students require additional needs and support from schools and homeschooling particularly affect those needs [11]. Another study found that students from any special need such as mental and intellectual disability, behavioural issues, poor consideration abilities and need teacher's support rather than carers face difficulties in homeschooling [41]. So, students from any disabilities face difficulties and challenges to start their school again due to cancellation and rescheduling in their HSE therapy in Covid-19.

However, a dearth in evidence on the education of students from a poor background such as rural, migrant and special need children in current circumstances [55]. Majority of children have complications to restart their school because of a lack of resources or poor IT facilities in online learning. According to [11] learning commitment and academic development considerably affect the distance learning through the opportunities provided by schools. Another UK study found the gap through the schools' development for distance learning in Pakistan and Bangladeshi students [35]. Due to homeschooling or parents work condition created a challenge and impact on the student's mental condition.

Globally, the educational institutes cancelled the exams and initiates a new system to the entrance in schools and colleges and follow the school-based valuation program. It creates a challenge for underprivileged students or lower social-economic background because of the concern on award grades instead of exams [37]. The performance of students in schools created grades criteria in school reports and adjusted in examinations in lockdown. The education authorities face challenges to cope with the student's engagement and motivation in a new education system particularly in DESI schools [36].

In a prolonged period of school closure, the educational authorities and teachers perform expeditiously to continue the students' education program. A recent survey found that the majority of the parents received messages from teachers and 80% receive resources such as emails and messages directly from schools [42]. Although, one-third of students employ apps to communicate with teachers regarding their schoolwork and upload their task on them whereas the quarter of students do a login on online classes. Teachers did not focus on the students with parents having poor education level and receive fewer resources from them such as RTE's home school hub and online apps. Another research on the primary school elaborated that 70% of teachers reported that they contact with students daily [40, 41]. Most of the schools rely on online platforms such as emails, Zoom, Whatsapp, Tv channels and radio to communicate with students [42]. However, it creates challenges for students to adopt new technological ways of learning.

The educational institutes employ online sessions and other online platforms but pointed about the areas that face challenges due to the minimum speed of internet, lack of internet facility and poor income [36]. The immediate shift from face to face learning towards online learning influenced some actions more than others such as group discussion on an everyday basis. This was particularly associated with the areas having minimum internet speed and poor income . There are inequalities in the institutional practices among several nations and the IT facilities are rare in some countries[36] . In Netherland, parents want to take an online interactive session with teachers every week.

In the UK, students use online platforms or video conferencing to communicate with teachers daily [19, 37]. In the US, high-income people stated that they received much assistance from schools as compared to low-income people. In China, teachers ensured that students receive considerable guidance and support in an online education program and follow their government slogan '*School's Out, But Class's On'*.

According to [56] government and schools supported the parents and provide resources during the lockdown and coordinate with parents to educate their children at home. Another Changyuan country has

implemented several online methodologies and six-step method to assist their students and also guide their parents [44]. Moreover, all online teaching material has been provided with several procedures and recommendation. However, It may be a challenge for school authorities to continue their education system in an online way.

In Ireland, schools that have already established online procedure in their education delivery faced little difficulties as compared to schools that require a completely new system and face challenges to accommodate the change [36]. It also includes some barriers such as teachers skills and expertise to adapt online learning ways, digital access in DEIS and non-DIES institutes and the inequality among urban and rural areas on the internet speed.

In Poland, parents request to authorities for the training of teachers to enhance their abilities in the utilization of internet platforms and criticized about students learning in the lack of online platforms. The distance education and the training of teachers for the use of digital media has been also underlined in Ireland [36, 41]. Additionally, the amount of work has been increased on the teachers as compared with administration and found minimum interest in all extents [40].

To enhance the delivery of education in homeschooling, the school need to support parents and provide resources and guidelines. In privilege areas, the parents have already educational resources in homes such as a computer, internet and books and these resources postulate about education background and social class[27]. The school principal reported that numerous students do not have access to participate in online learning due to lack of internet resources at home and unable to get support from school due to Covid-19 restrictions[40]. Another scholar stated that some students from disadvantage background not received support from families because of poor income and does not have digital facilities such as a computer, internet, mobile and printer at home.

COVID-19 creates a difference among people worldwide and arising educational and technological inequalities. The students from developed countries have information technology access and exposed online learning methodologies outside or inside the schools [57]. The digital technologies widen the gap between disadvantage and advantage of people and nations[20] . During this pandemic in different regions, 45% of students own a computer and 55% were unable to complete the task because of sharing a computer at home with siblings and parents.

According to the GUI data, digital resources depend on the family social class, school status and students from high social class significantly have access to all digital resources at home and in schools (Cohort 08, wave 5). According to a UK based study in the underprivileged areas, 75% of students have inadequate access to digital devices reported by 15% of teachers [37]. Approximately 2% of SEN parents do not have internet access at home during a pandemic. A shred of evidence from a recent study indicates that distance education was not found suitable for students who are unable to start their education and have a lack of resources[41]. Moreover, students from disadvantage background face difficulties to meet the deadlines and unable to complete the online projects because of their house circumstances[57].

This study also stated that in low-income families or rural areas, grownup (15%) does not have private space or proper accommodation in house and parents does not have abilities to fulfil their basic need. Due to school closure, the situation is being intensified because of the closure of public space and libraries that student might use for their study purpose. In England based study 50% of teacher reported that they receive 8% of completed homework from the underprivileged state schools while 27% were received from privilege state schools. The quality of work has been declined by 15% to 6% from the underprivileged students [58].

**Educational inequalities**

[35] stated about the connection between learning achievement and teacher methodologies and life hazards. The teachers having maximum qualification attain maximum income and good quality of life. In many countries, many researchers found a correlation between education and earning and its impact on overall student's learning [18]. Past scholars exposed unwavering inequalities regarding educational attainment and found the impact of socio-economic background on student's outcome[59].

At the start of school, the differences in the social background become noticeable from the student's vocabulary, test results, proficiencies and learning ways [54]. In the primary school level, the results of English and math subjects cleared the differences in social background [35]. Some studies found a gap among the performance of junior teacher grade and socio-economic background and the relative subjects [25]. Most of the people from rural background left the schools before completing their studies and created the gap among advantage and disadvantage background. Moreover, It also created a performance gap in disadvantage people. In the higher education system the participation rate of people having educated background always maximum.

According to [54] the parents who have A-plus grade 86% education level have relatively high performance as compared to 48% junior grade education. The outcome of disadvantage people has also impacted by their education level (Smyth et al., 2015). Although, they attained fewer test results and grades and

unlikely to move further education due to their disadvantage social background[16]. Rural students always rely on school support and guidance in their study pathways and unlikely to create prosperous alteration [16].

In the Irish education system apparently, the linguistic background found to be a dominant factor to stimulate inequality among students. In schools, the student's having fluent English background significantly gained maximum result comparatively from non-speaking English background[54]. The student who speaks the Irish language at home attained high reading score as compared to Immigrants.

Some Irish scholars also stated that one per cent of immigrants completed their education and eight per cent professional worker completed their studies among other population. Due to Covid-19 special children (SEN) also facing challenges and requires a lot of concentration in their studies . Covid-19 intensified inequities due to school closure and this issue arise a lot of question to the education institution.

**The impact of early-year education**

School education has created a significant impact on societal movement and constricted the achievement gap [37].According to the US study on *"Early Education Use and Child Outcome,"* the students at four year age significantly influenced by their school participation and it stimulates their intellectual and socio-emotional abilities[48]. At kinder Garten (KG) and pre-primary school level the physical, emotional and non-verbal abilities were found at a formal group level. The student's linguistic abilities significantly influenced through the social interaction with friends and relatives while the time spent with childminders having minimum association emotionally.

The pre-primary education system in Ireland addresses the proper procedure for preliminary childhood care by ECCE (*Early Childhood Care and Education Scheme*) although this is only for 2 years children before relocation to primary school. In some countries, many schools offered free pre-primary services and family can provide preliminary childhood care. [60]. stated that at the age of three children's socio-emotional condition approximately below 1% have been influenced by the time and hours spent on the care of children.

The remaining aspects that can influence socio-emotional progress of students are i.e. family background, demographics, health, interpersonal and parents behaviour and style. Numerous scholars also discussed that the financial condition and unsafe living area of students also influenced their outcome [48]. In Covid-19 incident, the teaching obligations fell primarily on parents and gender inequities significantly maximized during this time. The work routine of parents predominantly influenced by this pandemic and almost 22 % of people make their work in Ireland[41].

**Role of parents in student's learning**

There has been a dearth in pieces of evidence to explore the satisfaction of rural parents with the practical education of children by schools. In the lack of resources, parent support has been created a drastic impact on the outcome of students. In Ireland, some scholars indicated the special learning needs and maximum satisfaction level particularly related to student's progress [36]. Due to Covid-19 the educational authorities provides training to teacher worldwide and ensure the educational continuity by providing digital resources to parents, teachers and students. Although in rural areas, parents don't have much knowledge regarding the use of digital devices and lack of internet facility; So the students did not get much assistance from their parents. The internet resources and access to high-speed internet, devices and abilities impact the teaching method and initiate the challenges for teachers[10].

The rural parents did not get much assistance and resources from schools due to their low educational background as compared to urban parents who have high education and confidence level. A recent survey found that in homeschooling 94% of parents employ digital methods and almost 99% use email, SMS or other social media channels to communicate with teachers. Although, 77% of parents from high educated background face less challenge in communication with teachers usually from urban areas[38]. In urban areas, the schools employ digital media such as computer, libraries and internet facility and most of the students (80%) have access to the internet. However, 75% of parents from rural areas reporting about hurdle in the dearth of online education material, minimum guidance and clarity and face challenges to operate the online ways[40]Government starts to deliver the lectures through DVD's, TV channels and radio recording to maximize the extent of education, particularly for rural students [41]. These resources must support all students and parents especially from an underprivileged background and those with special needs.

**Schools reopening contemplations**

To facilitate distance education the strategies and structure should be in place to minimize inequity or improve the learning system and also formulate circumstances to manage distance learning in this time. According to [18] in the education system, the pieces of training and structure should be considered and need to address. Scant research highlights that government and other private institution should emphasize on the

teachers training and enhance their professional enlargement and expertise .[40, 61]. Several steps need to be considered by education institution in demand to reopen them after this pandemic.

According to recent literature, there are some essential aspects need to be considered before schools renewing such as COVID testing facility for students and teachers, required standards and procedure for students and possibilities of risk for teachers to effect from the virus [62] . It was also noted school closure does not bound students from social interaction or they did not follow safety standards or protocols and actions. Several literature advocates about key factors that formed inequalities from school closure or institutions.

According to [14] the innovative teaching method should need to be addressed and utilization of complete novel learning methods. Moreover, [1] suggested that government or institution should arrange online camps and improves teaching system by hiring skilled trainers to enhance student's learning. Rural or other underdeveloped areas of nations has been impacted through this pandemic and face education loss due to lack of resources [14]. Facilitates insignificant impact that created from exam cancellation although predictable grades moderate such type of impacts [58].

## II. Method of Study

The design of the research is a structural mapping of the research work that helps and guide the method of the exploration that is going to take place as well as the means or the tools with the help of which the information is gathered and analyzed [63].

Taking into consideration of the present study, exploratory design is opted by the researcher as it seems logical as the present study has aimed to review the literature on the possible factors that have been seen to impact the rural education because of the coronavirus pandemic [63]. To review the literature, the selection of literature is important and to select the literature AMSTAR tool [64] is utilized so that the quality of the literature is assessed [65].

**Sampling**

Sampling is done based on convenience sampling in which data is collected from the sources openly available and accessible. The reason behind convenience sampling is that the data is not huge in number as the issue of Covid-19 outbreak is current in nature that require further exploration. The articles are downloaded from the internet and e-libraries. 41 articles have been cited in the literature and reviewed. After the reporting of the data in the literature review, the articles are analyzed based on the Amstar tool and then the results are reported in the chapter 4. Only those results are taken significant from the literature which have been validated by the Amstar checklist [63, 64, 66].

**AMSTAR tool**

AMSTAR is a tool to analyze and assess the quality of the systematic reviews so that the randomized and non-randomized studies can be evaluated based on the excellence of the issue they are explaining. Systematic reviews are a necessity when considering them to evaluate the decision making behavior such as in case of present study to decide and select the literature to understand the rural education getting influenced by covid-19 outbreak. To assess the method based excellence of the review is necessary as to extract the data from the literature so as to evaluate the aim of the research of understanding the governmental intervenes (different countries) in the development of edtech in rural areas of the world. SLRs are viewed as bar none in the chain of command of proof and are progressively utilized for proof based dynamic. These are ought to sum up the writing on a given point utilizing thorough philosophy. One of the standard highlights of SLR philosophy is the appraisal of the nature of included essential examinations, by utilizing different apparatuses. Notwithstanding, there are likewise instruments for evaluating the methodological nature of SRs themselves, for example, the Assessment of Multiple Systematic Reviews (AMSTAR), created in 2007. AMSTAR was discovered to be a dependable and legitimate estimation apparatus for evaluating the methodological nature of SLRs [64, 65].

There is a checklist for the articles selection given by AMSTAR tool guide to check whether the selected literature is valid and according to the given criteria of the tool so that the factors that are extracted from the review of the data are quality wise accepted. The articles are first searched via search engine line semantic scholar, google scholar and research gate. The articles that are part of this literature review have been selected based on the checklist of the AMSTAR tool and thus the excellence of the present research work is maintained. The AMSTAR checklist guidelines is given in the appendix A. Data in case of the present research work is the secondary information available on the related area of the education sector as well as covid-19 pandemic affecting the world in the scenario of education. The rural and urban education and how the rural education get affected the most being the non-digitalization of the rural areas for the provision of edtech [65, 67, 68].

## III.    Results

Past scholars concentrated on the impact on learning due to school closure. While certain authors focused on the school association's validity through the learning gap and pointed out some policy-making areas. Furthermore, previous statistics stated that in three months the students faced six per cent impairment in learning. In this study impact of school closure on education in general and on rural areas in specific is seen and investigated. The results from the review of the literature is presented in this chapter. The possible factors are extracted from the critically reviewed studies to be explored further in the future.

**Selection and screening of literature via Amstar tool**

Almost 60-70 articles from different journals have been collected to satisfy the sample of 50 articles to be reviewed in accordance with the AMSTAR checklist. 50 articles are sampled in the sampling frame which are then converged to a main theme (a prospect impact factor of Covid-19 on rural education). It is because of the reason that the articles can be defined under a certain concept or construct that influence the rural education during the pandemic and can be specified under a main theme. Table 4.1 is demonstrating the main theme, articles in that theme, authors of the articles and journal name. A summary and future research recommendations are also mentioned.

**Table 4.1: Summary of SLR and results**

| Sr. No. | Theme | Author | Summary | Limitations/future research | Publishing org/Journal |
|---|---|---|---|---|---|
| 1 | School Closure | Burgess & Sievertsen, 2020 | The school closure has not seen a major bang in the economically subjugated areas but a clatter is seen due to IT crash in economically under developed areas. | The economic comparison region wise can be studied to investigate the impact of Covid-19 crisis on the education sector (rural versus urban areas' educational impairment) | VOX organization (an economic policy analysis organization) |
| | | Kuhfeld et al., 2020 | US students have been engaging in studies more during the lockdown and their learning capacities have been increased up to 60 percent. | The students in IT developed areas have become closer towards reading the lessons during lockdown and school closure because of the easy availability of learning material. The lack of resources in rural or unprivileged areas must be investigated further. | Annenberg Brown University (Edworking Paper) |
| | | Dorn et al., 2020 | Education system in developed economies was not worked to bargain with expanded closures like those forced by the COVID-19 pandemic. School closures couldn't as it were cause lopsided learning misfortunes for these understudies aggravating existing holes yet in addition lead a greater amount of them to quitter. This could have long haul consequences for these kids' drawn out monetary prosperity and on the economy in general. | The differences among the students with dissimilar or upper-lower disparity of income will cause the inequality among rural-urban educational development and edtech. The economic imbalance created due to school closure can have an impact on rural education. It could be researched in quantitative terms that in what way and to what extent the economic imbalances in urban and rural areas impact the education in rural students due to Covid-19 pandemic. | Mckinsey and Company |
| | | Sahlberg, 2014 | The author of the book have identified that the performance of the students when learning are more related with the accessibility to the knowledge rather than face to face education. The institutions also are delivering online classes and the real success is the attainment of the developed IT in the institutions. So performance is not related to the institutional time of the student. | In case of rural students, institution is everything in the name of knowledge and capacity building. The technological advancement is not present in several rural areas and where there is the presence of the IT development the maintenance has not been the part of the progress. Thus the institutional time is all that a student have in rural areas and if it closed it would have an impact on rural education. Therefore, for rural education reforms during Covid-19, investigation of institutional time and its impact on performance of the student is required. | Teachers College Press |
| | | Andersen & Nielsen, 2020 | Bad performance due to school closure leads to exam cancellation because of poor learning and it creates an impact on the underdeveloped population because such students get promoted to the next study semesters without being examined properly. And the lack of check and balance on their educational set up would made them | Performance management in students is a must whether for urban and rural students. There is a grey area in the performance management of the rural students that has been identified during Covid-19 lock down situation which should be investigated further and students should be given opportunities to be monitored for their educational career. | Journal of Public Administration Research and Theory |

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| | | | irresponsible of their educational career. | | |
| | | Larkins, 2020 | Students from a poor background, having disability, migrant, facing poverty and lack in resources and support may consider alternative measures from schools. The present situation intensifies the inequalities in the current school system and they enhance the remaining challenges of teachers and students. The remaining factors that can impact the home learning are home environment, parent's behavior, food, resources and the overall home condition. | The mental and physical wellbeing of students is associated with food security and influence their education attainment. Because of the school closure man of the food provision activities have been stopped and the keenness of the parents as well as the children to attain education also vanished with this suspension of food. | Discussion Paper: UNIVERSITY OF CENTRAL LANCASHIRE |
| | | Atteberry & McEachin, 2020 | There have been considerable arguments in the US on education loss especially in summer break because of decay in expertise and abilities and most of the summer camps focused on socio-economic gaps or cultural/race. | The socio-economic gaps leads to impact the rural education. Therefore, it should be examined that other than technological barriers, how the social class, race, ethnicity and economical gap be minimized or controlled to make the rural education suffer less during the time of Pandemic. | American Educational Research Journal |
| | | Eyles et al., 2020 | During this pandemic in different regions, 45% of students own a computer and 55% were unable to complete the task because of sharing a computer at home with siblings and parents. In Covid-19 incident, numerous developed nation initiates a digital strategies and invests on the IT department in all educational institutes. So, these IT facilities facilitate the school's teachers, students and administration and enhance the education system of DEIS and non-DEIS schools. | The digital technologies widen the gap between disadvantage and advantage of people and nations. To analyze the gap ad to further making a policy intervention for the rural students, it is recommended to investigate the region wise disproportion of resources and facilities and to put right these areas for rural students. | Economic and Social Research Council; London School of Economics and Political Science |
| | | Viner et al., 2020 | Researchers indicated about the effect of virus extent through the closure of schools and particularly prolong consequences of school closure for underprivileged students. They also claimed that following education losses creates a significant impact on the student's achievement and positions. Moreover, it widens the gap between privilege and underprivileged students and contributes to exceeding the dearth in education. | Being the policy making team the strategy creators should know about the dubious proof when considering school terminations for COVID-19, and that blends of social separating measures ought to be thought of. Different less problematic social removing mediations in schools require further thought if prohibitive social separating strategies are executed for significant stretches. | The Lancet Child & Adolescent Health |
| 2 | Traditio nal and new standard s of educatio n | Sakellarid es, 2020 | The mindset of people has been changed because of the pandemic and it changes from intimidation to originality. So, novel ways of teaching methods are going to start. Past research also investigated that the current education governance considered universal mindset. | It is stated that the nations have not faced such type of plague earlier however the education system adapts the preemptive approach for future learning. Novel ways of learning and teaching are required and the teachers are parents should be made aware of these methods by time. | Acta Médica Portuguesa |
| | | Liguori & Winkler, 2020 | The traditional mindset evaluates and resolved the matters alternatively extending them because of old ways. It is also indicated that the adjustments in experiences, viewpoint and circumstance created from preparation in advance level. The past experiences of teachers ignite their desire to the effective and efficient delivery of education to people. | Traditional ways are appreciated but during Crisis situation the demand of the condition is to put novel ways of making the rural students learn because urban students have the perk of technological advancement. | Entrepreneurship Education and Pedagogy |
| | | Ancho, 2020 | The government has identified several new ways to education delivery such as TV channels, radio | If the education system still follows the traditional ways of teaching in the current scenarios then the innovative methods | Jayapangus Press Books |

| | | | recording and other online ways to reach children worldwide. Covid-19 exposed teachers who can manipulate novel ideas, methods and come with a balance of philosophy in this digital era. | become in vain. | |
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| | | (Rogers & Blonski, 2010 | A universal mindset of teaching the students at any area is present and is quite successful. | There is a need to make the teachers aware that students of different economic and social background have to be first equalized by the mind and then to teach them equivalently. | Chief Learning Officer |
| 3 | Rural education | Jacob, Abigeal, & Lydia, 2020 | Covid-19 has approximately influenced the overall world's education system and around 1.25 billion population including students. Different education sectors such as schools, colleges and universities have been closed and suspending their exams, interrupt the overall education calendar, national and international exams cancellation, the decline in admissions and it creates education gap. Moreover, it minimized the education budget corresponding to learning manpower. This changes the traditional education system into digital learning and exposed the helpless students conditionally into lack of internet and accommodation. | Policy interventions for rural students is required where lack of resources and institutional time has impacted the rural education drastically. | Research Journal of Social Sciences and Humanities |
| | | Cullinane & Montacute, 2020 | In the rural education system, students are facing emotional, mental disturbance and financial chaos due to loans. | The government has planned to take steps for students education funding, provides facilities to students who are suffering emotional and mentally. | Sutton Trust |
| | | Bergamini, 2020 | Covid-19 exacerbates inequalities e.g. the more susceptible socio-economic groups which suffer from the Covid-19 are independent to the exposure of greater health threats, financial exposure, poor residential conditions during the lockdown periods. | It creates or increases inequity among the US and other nations and dignified the sustainable development goal 10 i.e. societal, economical, inequality in politics, right consumption of money, wage and communal security to attain equity among nations. Thus policies should be made to control this inequality. | Bruegel |
| | | (Iwuoha & Jude-Iwuoha, 2020 | Due to Covid-19 these policies are going to be instable and impact on especially underdeveloped areas of the countries and minimized the literacy rate. The poor countries such as Africa and other poor nations have affected mainly due to lack of facilities and unhygienic situations. These nations have limitations because of debts maximization. | If people are studying at home they might not attain the other benefits and it minimizes their confidence level. Moreover, it is a challenge to the educational system to engage the students by staying at home. | Electronic Research Journal of Social Sciences and Humanities |
| | | Shah, 2020 | The entire world's population has been impacted by Covid-19 and employing a distinctive effect on the US or other national health system or education system. This pandemic disturbed thousands of people and caused blaspheme disaster in worldwide proportion. Besides, the condition of harmony has been emerged internationally by miserable sentiments. Teachers has actively participated and responded to improve or maintain the education system via online networks. | The condition of harmony is the most affected one among the students of different economical and race background as well as teachers. Therefore government should also focus on creating harmony by delivering equal medical, health as well as educational opportunities to the rural people as well. | Marshall Journal of Medicine |
| | | Brown et al., 2020 | Rural areas may get the hardest hit because they are not well equipped and having minimum resources. Most of the people have not well-maintained home or other living conditions. Many people such as academician, practitioner, teachers and parents concerned regarding | For the emotional Well-being of rural students due to lack of education and health facilities further investigation is required. | Independent Rapid Response Report |

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| | | | insignificant impact of schooling at home due to Covid-19. Consequently, rural students faced education loss and this plague impact them emotionally and mentally in a longstanding. | | |
| | | (Ranscombe, 2020 | The student from disadvantage background having minimum resources to study and lives in poor condition. Due to lack of resources such as the internet, proper living room, unhygienic situation they cannot concentrate on learning. Additionally, underprivileged students have limited access to distract them and have partial parent's involvement in their learning system. Previously, the parent's involvement enhances the student's achievements in their school system.  Teachers and parents monitor student's work in homeschooling to make them competitive. | The parents and teachers involvement might be less due to their intellectual ambition and capabilities to understand the educational significance for their future. Several researchers indicated that students from uneducated background feel unconfident and demotivated in learning in Covid-19. | The Lancet Infectious diseases |
| | | Hutchinson, Bonetti, Crenna-Jennings, & Akhal, 2019 | The students from an underdeveloped nation such as Pakistani, Indian, Bangladeshi and African facing maximum education gap and school closure increases inequality among them.  The students or people from underprivileged areas have a lack of learning material and unable to support their students but they have maximum motivation for success. | The motivational factors for success are not yet identified clearly. The researchers should evaluate those factors and make policies to attract the students for career development based on these motivational factors. | Education in England; Annual Report 2019. |
| 4 | Technology and digitalization | A. Lee, 2020 | Digital technology is one of the most crucial factors in people's activities i.e educational research. digital platforms help the students and teachers to continue their research, knowledge and support in academics in Covid-19.  Scant research claimed that there is a greater improvement in academia due to technological innovation. | Covid-19 incident increases the dependency of digital technology and the students completely depend on the virtual platforms to communicate, information search, research and manage the work to stay productive. This is also a drawback for rural students and teachers because of the lack of technological resources. Resource planning is required. | Public Health |
| | | Mohan et al., 2020b | The education system was completely converted into digital classrooms, radio chat room and mailed curriculum. For example, native teachers in Mexico used DVD's and radio to teach rural area students because it is economical to purchase TV as compared to hire foreign ESL teacher. In Lockdown government has imposed restrictions to the public or bound them in home and frontier their access towards institutions. Consequently, teachers and students innovate new methods of teaching and learning to be productive because of institutes' closure. | Although, rural students can access those lectures and materials while it is applied in public or private sectors or those with no admission to any school but the waysa re not made easy for them or defined properly. Resource planning is missing for the rural education and students during the pandemic that is required for equal educational provision. | Economic and Social research Institute, Research Series |
| | | Hyseni Duraku & Hoxha, 2020 | The rural institutions have minimum access to IT facilities and it was not integrated with the education sectors, although the execution was intended since 2011 to onward. The student's future has been influenced by the lack of technology integration, although the evaluation has not documented after this phase so the technology integration remains significant in the prospect education strategies. According to the Kosovo | Managing resources and competency is not defined from early of the present decade. The further investigation on technology integration in teaching methods is to be investigated. | Research Gate |

| | | | pedagogical institute, approximately 40 % of teachers have adequate knowledge and information regarding the utilization of computer in the study. | | |
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| | | Iyer, Aziz, & Ojcius, 2020 | The education quality intensifies the need for online teaching methods that creates coherence among teaching and learning program. Additionally, the rural population has been influenced more due to lack of resources in Covid-19 pandemic. In advantage areas the people from below 30 reportedly maximum levels of internet user and above thirty are the least internet users | The quality of rural education is to be tested via performance management system to evaluate the excellence rural students have been given by the teachers in the name of education. | Journal of Dental Education |
| | | (Huang, Liu, Tlili, Yang, & Wang, 2020 | The technology has an extreme impact on the educational institutions and its influence has been examined in the progression of education field and on students learning and enhanced the growth of teachers. | These types of prospects encourage teachers to maintain and deliver dynamic learning ways to facilitate learning methods. Furthermore, in flexible education, the main consideration is the student's highlighted approach that encourages both students and teachers in the information transmission by the technology improvement. | Beijing: Smart Learning Institute of Beijing Normal University. |
| | | Dempsey & Burke, 2020 | It is mandatory to identify the collaboration among students, teachers and technology. Moreover, they identify the educational opportunities that can be influenced by the integration of technology to attain a significant teaching outcome. The teaching method of the teacher has created impact and influence on student's learning by incorporating technology to deliver lectures. Teachers transmit the knowledge by utilizing teacher's centered methodology and employ numerous valuation techniques to connect with students. | Students centered methodology are not considered and thus should be investigated and considered learning practice to encourage students by evaluation form, debates, discussion to analyze the conceptual change | Maynooth University Ireland, a two month follow-up |
| 5 | Home-schooling | Bayrakdar & Guveli, 2020a | Deprived students attain prestige for education institution whereas they prevent the probability of prosperous students to secure respectable spots. On the other hand, education institutes play an essential role to create equality and provide opportunities equally to both privilege and under-privilege students. | The maximum school's contribution minimizes the disadvantage of school closure and drives them towards learning and information. Moreover, the background of parents might un-influenced or meditate the student's learning due to home-schooling. To restrict the impact of school closure, teachers could start novel ways such as online lectures, DVD or radio recording, online channels, Zoom or other cloud-based materials to continue or monitor their students specifically in ESL. | Institute for Social and Economic research |
| | | Burgess & Sievertsen, 2020 | Due to Covid-19 the educational authorities provides training to teacher worldwide and ensure the educational continuity by providing digital resources to parents, teachers and students. Although in rural areas, parents don't have much knowledge regarding the use of digital devices and lack of internet facility; So the students did not get much assistance from their parents. | The rural parents did not get much assistance and resources from schools due to their low educational background as compared to urban parents who have high education and confidence level. A recent survey found that in homeschooling 94% of parents employ digital methods and almost 99% use email, SMS or other social media channels to communicate with teachers which is not possible for rural parents. | VOX organization |
| | | Bayrakdar & Guveli, 2020b | Poor students received un-trained, inexpert, unskilled and out of the focus staff probably in schools. As a result, the students from underprivileged areas and disadvantage background receive minimum support from their schools in Covid-19. | Rural educational facilities need planning and management of human as well as non-human resources. The study explained the less support from the school management but not from the governmental policies. | Journal of Ethnic and Migration Studies |
| | | Anders et al., 2020 | Due to Covid-19, the school closure affected all level of education system | Perks of homeschooling have not been included. However in case of rural | London School of Economics |

| | | | such as primary, secondary and higher level globally. So, face to face education exchange into online learning and all the activities has been monitored through the online system. Although, the parents work commitment replaces with students homeschooling requirements. | education homeschooling is impacting differently than urban education where proper technology and awareness in parents is present. | Library |
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| | | (O. Doyle, 2020 | Globally people made choices to educate their children while staying at home and this process encourages them to adopt digital technologies. In 2019 the ratio of students was almost 1500 in some of the countries that preferred homeschooling due to lockdown in Covid-19. The people from underprivileged areas and disadvantage background or SEN significantly influenced by Covid-19 and face challenges in homeschooling due to the lack of resources to assist their children and less educational background. Parents played an essential role in the children life and the standard and age of schooling require input from parents in their learning matters. | Homeschooling is impacting the rural education negatively as compared to the urban education. A future investigation is suggested to evaluate hoe homeschooling effects the rural students and the ways to improve as well as assist the rural parents teaching methods. | University College Dublin, Public Policy paper |
| | | R. Doyle & Conboy, 2020 | Parents from a good educational background and low educational background consumed 1-2 hours in homeschooling while some spent less than an hour in a day. Moreover, these figures are relatively less and going to be into focus due to Covid-19 at the primary and secondary school level. Besides, the concept of homeschooling varies worldwide and significantly influenced by the parents having a dissimilar social background. | Dissimilar social backgrounds of parents is seen to have impact on schooling of the children. It is required to investigate the extent to which rural education is getting affected by the dissimilar socio-economic background of parents. | International Journal of Information Management |
| | | Organizati on, 2020 | The study indicated Covid1-9 extremely interrupt the 46% of parents having dependent children and their education although 43% normally influenced by this pandemic | It is not mentioned that how the rural student will be going to restart their education with such poor availability of resources. A future study is required for this examination. | WHO scientific brief |
| | | Sokhulu, 2020 | A dearth in evidence on the education of students from a poor background such as rural, migrant and special need children in current circumstances. Majority of children have complications to restart their school because of a lack of resources or poor IT facilities in online learning. | | |
| 6 | Educati onal Inequali ties and society | (Blodgett & Lanigan, 2018 | Unwavering inequalities have been exposed regarding educational attainment and found the impact of socio-economic background on student's outcome. | In rural students how the inequalities impact the mental health as well as the educational performance due to the Covid-19 pandemic is required to be investigated | School Psychology Quarterly |
| | | Smyth et al., 2019 | At the start of school, the differences in the social background become noticeable from the student's vocabulary, test results, proficiencies and learning ways. In the primary school level, the results of English and math subjects cleared the differences in social background. | A gap is found among the performance of junior teacher grade and socio-economic background and the relative subjects as not only rural students but the rural faculty too is facing unequal distribution of facilities. | Economic and Social Research Institute (ESRI) Research Series. |
| | | McCoy et al., 2012 | Rural students always rely on school support and guidance in their study pathways and unlikely to create prosperous alteration. In the Irish education system apparently, the linguistic background found to be a | Language based inequalities are also seen. To investigate how these inequalities further boost up the negative impact of Covid-29 on rural education is required. | Learning: Home, School and Community: Child Cohort |

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| | | | dominant factor to stimulate inequality among students. In schools, the student's having fluent English background significantly gained maximum result comparatively from non-speaking English background. | | |
| | | Pottegård et al., 2020 | There are some essential aspects need to be considered before schools renewing such as COVID testing facility for students and teachers, required standards and procedure for students and possibilities of risk for teachers to effect from the virus. | The teachers and students of rural areas should be cared as same as the students in developed areas. Policy interventions are required for such purpose. | Clinical Epidemiology |
| | | Bayrakdar & Guveli, 2020a | The teachers having maximum qualification attain maximum income and good quality of life. In many countries, many researchers found a correlation between education and earning and its impact on overall student's learning. Research has stated about the connection between learning achievement and teacher methodologies and life hazards. | How teachers can be provided facilities in the rural area to be safe from the virus spread is to be considered. | Institute for Social and Economic Research University of Essex |

**School Closure and rural education**

The literature has reviewed that in three months the students faced six per cent impairment in learning. One of the studies in Sweden argued that International student assessment (PISA) test score and face to face learning has a significant connection [12]. According to a recent US study, two to nine per cent of rural students left the high schools due to school closure because of lack of resources [1]. For rural children, the loss in learning is related to bad performance and this leads to exam cancellation because of poor learning and creates an impact on the underdeveloped population [58].

The study in Ireland showed that outdoor activities between students enhance academic performance and effect on the characteristics of socio-economic (McCoy et al., 2012). In addition to the routine getting upset the aftereffect of a pandemic on mental health of the rural students is seen and rural schools conditions can be ignored in some underdeveloped countries [17]. The central statistics office has studied on the satisfaction level of students studying in COVID plague and confirmed that the people between 18-34 have minimum satisfaction level [18].

**Changing standards (traditional versus new mindsets)**

According to [25] the mindset of people has been changed because of the pandemic and it changes from intimidation to originality. The teachers as well as students in the rural areas have not the facilities and awareness of the novel ways of teaching and learning as they are more related to traditional way of schooling. The mindset imparity in the rural students is seen that has explained that urban students would get all the perks of edtech as compared to rural ones.

The traditional mindset evaluates and resolved the matters alternatively extending them because of old ways. [27] indicated that the adjustments in experiences, viewpoint and circumstance created from preparation in advance level. Thus, traditional and new mindsets comparison is also an accredited factor that could be considered significant to study further the extent of the impact of Covid-19 on rural education.

**Digital technology and rural education**

Research claimed that there is a greater improvement in academia due to technological innovation [44]. In Lockdown government has imposed restrictions to the public or bound them in home and frontier their access towards institutions. Consequently, teachers and students innovate new methods of teaching and learning to be productive because of institutes' closure.

**Homeschooling and rural education**

The literature has revealed that homeschooling is quite effective during the time of lockdown. According to Borman and Dowling (2010), the student's outcome remains substantial by adjusting their parent's background and the impact of schools are a consequence of learner's assortments. To enhance the delivery of education in homeschooling, the school need to support parents and provide resources and guidelines. In privilege areas, the parents have already educational resources in homes such as a computer, internet and books and these resources postulate about education background and social class [27]. The school principal reported

that numerous students do not have access to participate in online learning due to lack of internet resources at home and unable to get support from school due to Covid-19 restrictions [40]. COVID-19 creates a difference among people worldwide and arising educational and technological inequalities. The students from developed countries have information technology access and exposed online learning methodologies outside or inside the schools [57]. The digital technologies widen the gap between disadvantage and advantage of people and nations [20]. However, homeschooling has advantages as it controlled the inequality among rural and urban students and minimizes the gap in learning and teaching. But the key issue regarding this aspect is the illiteracy of rural parents or traditional mindset of syllabus that is now became modern.

**Educational inequalities and rural education**

The rural students that have been studying in the urban institutions are also get impacted negatively more than the prior conditions of inequality. At the start of school, the differences in the social background become noticeable from the student's vocabulary, test results, proficiencies and learning ways [54]. In the primary school level, the results of English and math subjects cleared the differences in social background [35]. Some studies found a gap among the performance of junior teacher grade and socio-economic background and the relative subjects [25]. The financial condition and unsafe living area of students also influenced their outcome [48]. In Covid-19 incident, the teaching obligations fell primarily on parents and gender inequities significantly maximized during this time. The work routine of parents predominantly influenced by this pandemic and almost 22 % of people make their work in Ireland [41]. Therefore, it is seen that educational inequalities have been intensified during the Pandemic. Also the factor is accredited to be a significant one as per the outcomes of the review suggests.

**Role of Parents and rural education**

From the results it has been cleared that there is a lack of resources for proper education in the rural areas due to the lock down situation. In the lack of resources, parent support has been created a drastic impact on the outcome of students. A recent survey found that in homeschooling 94% of parents employ digital methods and almost 99% use email, SMS or other social media channels to communicate with teachers. Although, 77% of parents from high educated background face less challenge in communication with teachers usually from urban areas [38]. However, the governments of different countries have shaped policies for edtech but parents don't have much knowledge regarding the use of digital devices and lack of internet facility. Thus, the students did not get much assistance from their parents. The internet resources and access to high-speed internet, devices and abilities impact the teaching method and initiate the challenges for teachers [10]. The rural parents did not get much assistance and resources from schools due to their low educational background as compared to urban parents who have high education and confidence level. , 75% of parents from rural areas reporting about hurdle in the dearth of online education material, minimum guidance and clarity and face challenges to operate the online ways [40].

Government starts to deliver the lectures through DVD's, TV channels and radio recording to maximize the extent of education, particularly for rural students [41]. These resources must support all students and parents especially from an underprivileged background and those with special needs.

## IV. Discussion

Social isolation and changes in educational strategies as a preventive measure against the COVID 19 make the community more concerned and can cause more depressive circumstances [69]. Furthermore, these concerns may also be influences by inexperienced teachers and parents to educate and support the children in their learning process [70].

The execution of online learning also determines the rural student's and teacher's struggle to continue the virtual learning process. According to the previous scholars, there is a possibility of incorporation and execution of technology into teaching methods and also reassure the positive outcomes from former literature that signify that almost 77% of European people are internet users although with limited technological equipment in house, income, education level and other factors [71].

These pieces of evidence suggest that these type of inequities arises from the impact of Covid-19 and the results are dual [72]. Initially, the insignificant impact on mental health and physical welfare has been endured by disadvantaged groups and younger groups. Children from disadvantaged groups are extremely prejudiced by depression and parental anxiety [73]. The students experience troubles due to the minimum wellbeing of their parents and the impact is maximum for rural children. Secondly, inequality has arisen from the jobless people and a sharp shock wave relates to the restrictions due to the pandemic. Most of the people losses their jobs are from low-income groups [74]. Though PUP (pandemic unemployment payment) and the TWSS (temporary wage subsidy scheme) helped the low-income groups and the studies indicated that it leads to poor living standards among families and creates unemployment for the rural groups [75].

Few researchers indicated that this recession creates an insignificant impact on socio-economic susceptibility and reduced the outcomes of students [73, 75, 76]. Although some studies still unable to find the scale of recession, the prolonged descent of living standards and parental stress have a poor impact on student's wellbeing. The long-term impact of this Covid also influences the long-term career of people [77]. This also restricts the higher graduate students to continue their studies in other countries.

## V.    Conclusion

The government should take preemptive measures after the covid-19 incident specifically for students and developed local health planning with the help of the world health organization (WHOM) to control the extent of this incident. This program should support the female married students and the students who were not interested in studies during the school closure. The authorities should reach out to the students who face difficulties in remote learning and try to re-engage them to continue further. The authoritative and non-authoritative struggles motivate students to reoccurrence in institutes after the reopening while the students who were omitted from schools due to further reasons before COVID-19.

The government should take steps to ensure access to free education for rural students after the schools reopening, and certify that all education is permitted and free for all. They should also offer financial support to other students that cannot manage the expenses related to schools and belong to poor families and unable to join the schools again. In different countries where females are in minority especially in schools as compared to boys, in this case, the government should support the girl's studies and provide incentives to endorse parents that can help girls to reoccurrence to schools. They should also consider the students who cannot continue distance education and provide them a remedial education system. The students who are disabled and belonged to rural areas and are at risk for instance living in dearth, migrant, who do work as well girls from these groups required consideration.

The education system should implement technology for online learning and should protect the privacy rights of students. They can include clauses regarding privacy in the school contract with the company that provides technology for data protection. They should establish data protection laws for students.

They should distinguish that digital education and internet access play an essential role in recent studies and should provide them internet access at an affordable rate to all students. There is a need to take steps for rural students due to consistent hardship and disregarded population and provide free internet service and laptops to them.  They should also approve and implement the nontoxic affirmation to defend schools in conflicts. Although, the education budget should be saved to endorse the local education structure and to perform adequately in present and evolving needs for inclusive education. All schools should have experts, trained teachers, and good infrastructure. Mostly the expert of African committees' works on a child's human rights and welfare in this regard to the robust assumption of any degenerating measures, especially in the education right.

Rural communities can evaluate data and other sources to enhance the understanding of the student's loss in the rural community. Moreover, collaboration among institutes and government can facilitate the education system. If the management makes plans to access resources such as a computer, mobile, internet, and other assets, it can be helpful for the students and the parents. If they work with encouragement and along with other educational organizations to enhance the knowledge during Covid-19 and minimizes the barrier.  By containing authorities who are associated with ethnic minorities and with the children having disabilities the after-effects of the incident can be controlled. The advanced strategies can be introduced about communicating and sharing with the rural people regarding Covid-19 and educate them the ways of protecting themselves. The methods can be organic food and diet, physical and mental activities, stress management techniques, and prolong infection management. The government should share messages and informative materials that are related to health issues, care, and lifestyles of people that they can be adopted in a pandemic.

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