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Historical impact of COVID-19 on education

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Abstract--The corona virus, also known as COVID 19, was one of the earliest viral infections detected in Wuhan, China, according to the World Health Organization. According to the WHO, it is a newly discovered virus. The widespread spread of the coronavirus known as COVID-19 has caused disruptions in the world's educational system. Students have a tough time making plans for their futures because of the unpredictability of the disease's course of advancement and the impact it would have on both their health and their education if they were to contract it. Because of the sickness, several educational institutions had to close, which resulted in a loss of revenue for those who worked in those institutions. It was ultimately revealed to us that COVID-19 provided learners with a door-to-door chance to study. Education, one of the most important societal systems, has been badly disrupted as a result of the current worldwide epidemic. Despite its indisputable importance for both a nation's overall well-being and the personal growth of its citizens, the development of Covid-19 has placed education in jeopardy. It has had a tremendous impact on the lives of millions of children and teenagers all over the world. Since the lockdown was first implemented, there have been a number of rigorous goals that have required to be completed in order for the situation to be resolved. Another sector that was adversely affected by the economic crisis was the education sector, which saw a decline in the quantity of its output as a result of the crisis. According to recent research, the epidemic has stopped more than 32 crore pupils from attending school. As a direct result of what is being described as a crisis on a national level, there has been an increase in the number of people who are seeking for job.

Keywords--COVID, Education, Institutions, Learning, Online, Resources.

1. Introduction

As a direct consequence of the COVID-19 epidemic, educational institutions all around the world have been abruptly pushed to harness and utilize the suite of

accessible technology resources in order to provide content for students in all sectors that can be accessed remotely through online learning. New options are emerging for educators all around the world to accomplish things in a different way and with greater flexibility, which may result in possible benefits for the accessibility of education for students all over the world. These are innovative methods of education that have not been utilized to their full potential in the past, notably in the field of kindergarten through grade twelve. Unprecedented and imminent obstacles have arisen in the realm of education due to the coronavirus pandemic. More than 185 nations had enacted or announced school and university closures. There was a worldwide halt in the education sector.

The problem has affected about 1.5 billion children and youngsters. Schools in India were among the first organizations to shut down as a preventative step to prevent the virus from spreading. All of the education system was thrown into turmoil as schools were forced to close due to the crisis. As a result of the lockdown, corporate and state schools throughout India have been compelled to postpone courses indefinitely. Because it is an important predictor of a country's economic future, higher education has been particularly hard hit by the pandemic. Our world and our view of the globe may be altered by the COVID-19 dilemma, and we may learn about the ways in which education must be reformed to better prepare our young children for the future. The COVID-19 epidemic demonstrates how internationally interconnected we all are, highlighting the fact that there is no longer such a thing as isolated problems or acts. People who want to be successful in the next decades will need to have the ability to comprehend this interconnectedness and traverse across boundaries in order to capitalize on their uniqueness and operate in a manner that is internationally collaborative.

2. Objectives:

Since students all over the world have been forced to switch from traditional classroom instruction to online learning due to the unprecedented lockdowns caused by the novel corona virus, the primary goal is to identify the most significant challenges, opportunities and effectiveness of online courses as observed by students. Studies into the effectiveness of online education will be conducted in this paper.

3. Methodology

An effort has been made to summarize previous research on online instruction both in light of the shutdown caused by the Corona virus and before that, as well as news on the efforts that educational institutions all over the world are making to prevent the virus from causing any further damage to education. A discussion of the institutional steps that have been taken to prevent lockdowns brought on by the coronavirus, as well as technological impediments, interactions with and by students, and comprehension are mentioned in this paper.

4. Discussion

There are a few ideas that could improve COVID-19's capacity for lifelong learning. These ideas include investigating the potential of digital learning,

assisting teachers and students in making the transition to a digital world, adjusting to a new school system in order to gain more knowledge about the various types of online educational resources, and taking the necessary steps to lessen the impact of the epidemic on job opportunities, internships, and other academic endeavors such as distance learning programs and the incorporation of technological advances.

In an effort to halt the progression of the covid-19 epidemic, the majority of nations' governments have temporarily shut down educational institutions. More than two-thirds of the world's student population is affected by these national school closures. In addition, several other countries have implemented regionally customized closings, which have had a significant impact on millions of more students. UNESCO is aiding governments in their efforts to mitigate the immediate effects of school closures, especially for populations who are more vulnerable and disadvantaged, and to encourage the continuation of education for everyone through the use of distance learning. The information presented here is derived from observations made by UNESCO. For many educators and academics, the Internet has opened up new possibilities for online learning, which they hope will help students learn better while also reducing the strain on limited educational resources, particularly in higher education,(1)

The effects were even more severe for underprivileged children and their families. This resulted in disrupted learning, reduced nutrition, difficulty with child care, and economic costs for families who were unable to work as a consequence. The findings of a recent study suggest that closing schools may help to halt the spread of an outbreak. A child's ability to learn depends on his or her social interactions outside of school. When schools are closed in response to an epidemic, they are less effective and may even have no effect at all if the decision to close schools is made too late. Closing schools quickly increases the likelihood that they will be effective. In certain instances, an increase in infection rates has been seen after the reopening of schools following a time during which they were closed. Because school closings typically occur at the same time as other measures, such as prohibitions on public gatherings, it can be challenging to quantify the exact impact that school closings have had.

The months of March, April, and May were crucial in the educational industry because of board tests, competitive and semester exams, and school admissions. Not only will the closure of schools and universities disrupt the education of future generations of students throughout the world, but it will also lead to an increase in effects for the economy and society as a whole. The initial teaching methods used were the ones that were applied. First, those who will be impacted are those who still feel that pupils should have direct interaction with them. However, teaching is always rewarding. Only a few educational institutions in India are equipped to use online learning. While many of them are still from low-income families that cannot even pay e-learning options there is a tremendous impact on mid-day meal programs throughout this period of time. Many villagers and city dwellers are reliant on the resources of our country. Another location that has been impacted is the south eastern part of the country. Our country's future is at stake because of a breakdown in our nation's higher education

system. Placements and internships are going to be affected, and there may be a delay in getting them started.

There is a significant rise in the likelihood that students will go on to pursue higher education outside the United States. The policies in place might also be to blame for the downturn. Along with the steps taken by other governments in light of the same circumstances. Another possibility is that the entrance requirements for the next academic year at various higher education institutions, based on local conditions state.

Restoring the educational system can be helped by a number of approaches. When working from home and learning from home, data privacy is a big problem, and the IT sector as well as educational institutions must take care to assure compliance in this respect. It is imperative that the federal government work with private sector partners to conduct vulnerability scans and risk assessments to address the existing state of affairs. It is necessary to deploy and improve digital platforms related to learning methodology software and management software. COVID-19 is spreading rapidly, and governments throughout the world have been obliged to shut down schools as a preventive measure. Because of this, all educational institutions and businesses in India will be shut down on March 16, 2020. Around 70 percent of the world's students will be affected by these global closures in some way. Numerous other countries' education systems have been adversely affected by regional school closures (UNESCO).

Higher education institutions can benefit from adopting innovative and mobile-based learning methods. We must take immediate action to limit the impact of the epidemic on ongoing research projects, internships, and career opportunities. Yoga, metallurgy, agriculture, and pharmacy are all examples of old knowledge systems that need to be included into today's mainstream education. It is imperative that government first ensures that the basic per capita income of a common man rises in order for the above-mentioned measures to be put into place. Even if most of our educationalists, economists, or government perceive online teaching as a breakthrough in technology or a step toward digitalization, we may see a different effect from the student's perspective. According to the findings, Indian students aren't truly happy or feeling like they're making a difference in the country. Instead of seeing these online programs as a viable alternative, they see them as a temporary stopgap measure that they have no intention of maintaining after lockdown. As a result, even if online classes are being seen as an alternative to bridge the academic gap caused by the unexpected lockout, they are not serving the fundamental objective of education. As a result, most students choose face-to-face classroom instruction over these online courses.

The goal of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) is "to assist countries in their efforts to minimize the immediate impact of school closures, particularly for the most vulnerable and marginalized communities, and to facilitate the continuation of education for all through remote learning. Learning over the internet has emerged as an essential support system for the educational system as institutions work to reduce the risk of for distribution within the community. It was hoped that public health professionals'

suggestion of social distance would assist to limit the total number of deaths from the COVID-19 epidemic by closing down universities and institutions worldwide.(2) "It is imperative for educational institutions to re-evaluate the existing methods of distribution and instruction in schools and educational institutions of higher learning by seamlessly integrating ET recommends integrating traditional classroom instruction with other forms of online learning in order to create a unified learning system (Economic Times). ET explains how, in response to the epidemic, a large number of educational institutions switched to online distance learning using various platforms like Zoom.

Technical distance refers to the differences in students' access and technological ability across regions of the world. There have been several researches to examine how technology affects online learning and the role it plays in preventing students from completing their education. There have been very few of these investigations. They were more concerned with how far they could go technically. It might also relate to the differing levels of technical proficiency among people. Thanks to Internet learning, researchers and teachers are increasingly interested in using the phrase "electronic" or "online" to refer to online courses. reduce the amount of resources available while increasing the overall learning outcomes for pupils, especially at more advanced levels of education.(3)

Students and teachers can engage in face-to-face or online contact, with teachers supporting learning, offering information, answering questions, and providing prompt feedback. Individual pupils, on the other hand, are encouraged to raise questions or seek clarification from their teachers. Student-to-student interactions allow students to share their diverse perspectives and experiences with one another. The exchange of information and expertise that takes place between students in the course of group projects and debates, in the course of case studies, and in a variety of other settings can be beneficial to the future generation of leaders. It is essential for successful online education that instructors and students engage in frequent dialogue with one another. When there are more opportunities for engagement, students become more involved in the subject. (4)

According to their research findings, instructors need to keep students engaged in their online courses by pushing them with questions that require further explanation and by responding to their inquiries in a timely manner that is both clear and succinct. Lockdown in India's education system, economy, and environment.(5)

Studies on online learning undertaken during the pandemics show that only a small number of studies were done to address the rapid halt changes that affected the students at large, resulting in a shift in education worldwide. .Qualitative research was used for the majority of this study, Using primary data from the sampled pupils, the researchers conducted their investigation.

These days, there is an abundance of software and online courses that can be utilized to personalize the educational experience of students, and educators are making advantage of these resources. Students who receive their education in a hybrid format "pay no price" for this method of instruction in terms of pass rates,

final test scores, and performance on a standardized assessment of statistical literacy. These metrics are measured over the course of the student's entire educational experience. This is because these students do equally well in all three categories. The answers to these equations of zero difference have been computed with a great deal of accuracy, and their values are as follows: The results of the speculative cost calculations that we also perform show that the use of hybrid models of instruction has the potential to significantly reduce the costs associated with compensating instructors over the course's lifetime. This is shown by the fact that the use of composite methods of instruction in large beginning courses has the potential to significantly reduce the costs associated with compensating instructors over the course's lifetime.(6)

At the same time, nations that lack access to effective teaching in distant areas aim to exploit this capability for education development, both by employing the older and proven methods such as radio and television transmission, and harnessing the promise of ICT. This is where teacher training with digital technology and apps becomes vital. As a precaution, teachers should remove students' unwarranted fear that the epidemic may adversely affect their academic performance. Proper guidance on mid-semester tests, assignments, and projects is required. To help those students who do not have internet access, we must not become enamored with the idea that everyone will be able to use the internet eventually. Because of the need to take into account a student's health when determining their grade, it might be difficult to follow up with an online class. Disciplines that involve working in a laboratory or the fine arts cannot be taught online. As a consequence of this, it is more rational to carry out an evaluation according to the student's present performance.(7)

In India, educational institutions such as high schools, colleges, and universities rely solely on antiquated methods of instruction such as face-to-face lectures in a classroom setting. This is not the case in other countries. Blended learning has been adopted by a number of academic institutions, however many are still reliant on outdated methods. Anxiety in the education sector has already extended to other countries as a result of the disaster. Due to the outbreak of the Covid-19 virus, many schools and other institutions around the country were required to close for a short period of time. Concern that they won't be able to complete the current semester, let alone more in the future, is shared by a great number of individuals all around the world. The practice of lecturing to students in person is being abandoned by an increasing number of educational organizations. A return to traditional classroom learning is unlikely in the foreseeable future, according to academics. An individual's educational prospects will be harmed by social exclusion when they are still young. Creative answers to this confusing issue are being sought by educators.(8)

The provision of online lecture sessions to all of the students, beginning with those in the first grade of school and continuing all the way up to those who have graduated with professional degrees. These appointments are coordinated through the use of several videoconferencing applications, such as Skype, GoToMeeting, Zoom, and Google Duo, amongst others. The monitoring of the pupils takes place through dialogue with everyone, including the components of a questionnaire for the purpose of clearing up any misunderstandings. The

dissemination of the content as well as the administration of the tests that have been assigned using the many platforms that are accessible, such as "Google Classroom," "WhatsApp," and so on, with the deadlines being specified. For students, learning access might begin with the creation of their own study materials or presentations on the themes they are studying in school. Students are also encouraged to participate in various competitions or activity sessions that focus on extracurricular activities in addition to their academic studies.

India has seen an increase in the use of e-learning over the last several years. A large variety of low-cost courses are available to students through the medium of massive open online courses. In India, there were still many educational institutions that were hesitant to embrace online teaching and learning. However, the challenges brought by the outbreak caused by the Corona Virus exposed everyone to a new world of online education and teaching from a distance. Teachers used Google Hangouts, Skype, Adobe Connect and Microsoft Teams to conduct remote instruction, but ZOOM emerged as the clear winner. To guarantee the proper operation of teaching and learning programs, students were supplied with a guide to appropriate online behavior and specific instructions on how to attend classes. (9)

Students are expected to take use of the time they have throughout the semester to compile learning portfolios. In order to get students excited about the course, methods like quizzes, multiple-choice questions (MCQs), and classroom software like 'Testmoz' might be employed. Use of Google Docs, a collaborative writing tool, may help students improve their writing abilities and contribute to a larger body of research. Students may view and learn about a topic more easily and thoroughly by using educational videos accessible on 'YouTube.' This option is available to faculty who wish to create videos or presentations for students to use as preparation or learning aids of the curriculum. The short-term course offered by Massive Open Online Courses (MOOCs) can serve as a foundation for students who want to continue their education, since they will get credit and certification for their efforts. SWAYAM NPTEL is one of several MOOCs offered to students all over the world.

Students will be able to acquire collaboration abilities and flexibility if medical education incorporates technology in a novel method. Virtual communication with their peers offers up a unique practice and parallel to what inter-professional cooperation and telemedicine could look like in the future. Think outside the box and challenge preconceptions about how medicine should be performed by students who are better prepared to adapt to the unique scenario of COVID-19. This shows a student's capacity to adapt and innovate. As a result, students will have to come up with unique ways to demonstrate their dedication to their studies, work ethic, and ability to work well with others. Perseverance and adaptability will be increasingly evident in the face of these new challenges and the innovative approaches to solving them. E-learning has received a lot of flak over the years. Accessibility, affordability, flexibility, lifelong learning, and policy are just a few of the reasons for online pedagogy. Online education is believed to be available to everyone, even those in remote and rural areas. A more economical choice for higher education because to decreased expenditures of transportation, accommodation, and overall classroom expenses. Another exciting aspect of

online learning is the freedom it provides to choose one's own schedule for completing a course. By mixing face-to-face education with technology, blended learning and flipped classrooms can help students learn more effectively. Students may access educational resources at any time and from any location, allowing them to continue their education for the rest of their lives. The importance of online education is being recognized by an increasing number of countries. (10)

The desired end result was for students to be able to make use of contemporary information and communication technology within the framework of a more traditional educational environment. Along the lines of how a classroom is organized, teachers have begun constructing explanations, modules, and frameworks on whiteboards in an effort to capture the attention of their students. Because doing so lays the foundation for an emerging approach to educational development, one of the primary responsibilities that will fall on the shoulders of adults in the years to come will be to implement the appropriate safety measures to protect children while also involving them in educational activities. In today's digital environment, online education has become a need for students of all ages, from nursery to post-graduate and doctoral levels. It spread its wings across the board, landing in every educational establishment. The utilization of remote learning technology makes significant use of Google classroom, Blackboard, ZOOM, and Microsoft Teams and WebEx, amongst other similar platforms. Students have grown proficient in the use of technological tools (ICTs) as a result of the utilization of educational tools such as video games, hard puzzles, simulations, animations, and other learning aids (ICTs). Students in metropolitan areas frequently make use of applications such as SUGAR MATHS, BYJUS, and VEDANTU in order to evaluate and improve their existing abilities and capabilities. There is a gradual trend toward student-centered teaching and a variety of online modes of engagement by professors in order to make students more comfortable as well as pique students' interest in digital classrooms.

Many people's educational experiences have been affected by COVID-19's epidemic, according to the World Economic Forum (WEF). It's possible that we'll need to make some changes and try out some novel strategies in order to find original answers to the challenges we face. Due to the fact that they have been accustomed to more conventional instructional strategies, such as face-to-face lectures, it might be challenging for teachers to adapt to new pedagogical approaches. In spite of this, in the midst of this crisis, we are left with no other alternative than to conform ourselves to the changing circumstances and be open to the transition. It will be beneficial to the area of education and may result in a number of unanticipated advances in the profession. We must overlook and forget about the pupils who are unable to use all of the internet technology that is available. Because these students come from less well-off homes and have less exposure to technology, as well as limited financial means, they stand a greater chance of falling behind academically when programs are offered online. Digital gadgets and internet data subscriptions are expensive, and this may put them at a disadvantage. The digital gap may aggravate existing social inequities. (11)

During the period of lockdown caused by the newly discovered coronavirus virus in 2019, there has been a complete breakdown of the educational system around

the globe (COVID-19). There has been a shift in online education because of the COVID-19 incident from traditional techniques to the present approach, which combines classrooms and webinars alike. Even while online courses, correspondence courses, and other non-traditional forms of education have long been associated with non-formal learning, the current state of affairs suggests that they may eventually displace the traditional educational system altogether if current trends continue.(12)

Because to the COVID-19 epidemic, all educational institutions throughout the world have been forced to close, putting future academic plans at danger. The bulk of educational institutions have shifted to online courses in order to continue academic activities. As a result, there are many unanswered issues concerning e-potential learning's to be developed, designed, and implemented in developing countries like India.(13)

The increasing use of online courses is causing significant shifts to occur in the learning and teaching practices that are utilized in higher education. Numerous empirical studies have been conducted on the topic of the delivery of online courses; however, relatively few of these studies have merged their findings in order to create a complete view of the challenges that are involved. Cooper's approach was used to identify these concerns in a literature study. The findings were broken down into three primary categories: online learners, instructors, and content production. Learners' difficulties were among the many concerns of students.(14)

According to data compiled by the UNESCO, the introduction of the Coronavirus has resulted in more than 1.5 billion children and young people in 188 nations throughout the world being prevented from attending school or university. In light of the present state of emergency, a number of countries have shifted away from the more traditional face-to-face teaching methods and toward the use of electronic learning. Even in the face of difficulty, the ability to pursue further education is one of the most fundamental rights that humans are endowed with. This is based on the assumption that all of the students are given the same consideration.(15) When it comes to making use of e-learning, UC's academics were provided with access to two distinct sorts of assistance. These included the provision of assistance from academics who were recognized as leaders in the field of e-learning implementation as well as an e-learning support staff that was supported centrally and then outsourced to individual colleges.(16)

When evaluating the overall quality of an education that is acquired online, one of the most essential things that should be examined is the individual educational experiences of students. A substantial proportion of the student population is of the view that the in-person and online classes were quite similar to one another, to the point that it was difficult to tell which was which. On the other hand, there are some people who are of the opinion that students need a little bit more time to get used to taking online lessons, which require a higher level of self-discipline on the part of the student in order to maintain a connection with the instructor while the session is in progress. On the other hand, there are some people who are of the opinion that students need a little bit more time to get used to taking online lessons. When compared to the more conventional mode of instruction, several

students felt that the online approach was more participatory. Online learning is seen as more empowering by many students since they may access the content on their own personal devices, such as computers and smart phones, rather than through the conventional classroom environment. In light of the current COVID-19 problem, online education has been given a good opportunity.

Conclusion

COVID-19 has disrupted the students' normal learning regimen. Due to this COVID-19 shutdown across the country, students are spending their active learning hour at home, which has pushed them behind in their daily routines. When students are given the opportunity to actively participate in their education by using these online engagement tactics, they are more likely to develop good study habits and succeed in their future careers. Good learning outcomes need the engagement of academics, the selection of appropriate digital learning platforms, the development of educational activities and meticulous scheduling based on the intended learning experiences. The traditional chalk-talk teaching methodology has been replaced by a digital platform as a result of the epidemic. As a result of this disruption in the delivery of education, academicians are being forced to figure out how to increase participation at scale while ensuring that online teaching platforms are inclusive. The pandemic Covid-19 crisis has had a profound effect on human existence, giving us valuable lessons for the rest of our lives. Teachers' jobs and education have been particularly hard hit. Lessons in the traditional classroom are being replaced with lessons based on technology, and as a result, instructors are required to keep up to date with educational technology. ICT had never been an option for many teachers before it became mandatory to teach online. Despite the fact that the duration of the pandemic's spread is unknown, educational institutions have been able to provide teachers with the necessary training to keep classes running smoothly. A teacher's aptitude for keeping up with technological advances will undoubtedly be an important consideration in teacher hiring decisions in the future. As a result, teachers' jobs and livelihoods are being threatened. Teachers need to be trained and their technology difficulties addressed, or they risk generating a generation of pupils who are ill-prepared for the digital world.

We'll need to be well-prepared in the event of a pandemic like Covid-19 so that we can respond quickly to changes in the environment and adapt to new delivery modes. Some examples of these new delivery modalities include remote learning and online learning. Students have gained a higher sense of wonder and have become more enthusiastic about studying as a result of their increased exposure to technology. Many educational institutions have been able to successfully transition from traditional to online learning, despite initial obstacles.. This paper provides an in-depth analysis of online teaching and learning activities that took place during the shutdown. The aim of this study is to ease the current academic disturbance and, as a consequence, guarantee that educational activities and discourses resume as a regular course of action in the education system. Transformational leadership and online teaching-learning activities should be linked during the COVID-19 outbreak. Furthermore, the inquiry provides an in-depth look at the current state of online teaching and learning. Online digital technologies that promote an active, dynamic learning environment are being

used by new generations of academics to rethink and implement classic classroom teaching methods. This creates a more dynamic and active learning environment. If fundamental adjustments in mindset, policy, and perception are made, online education will rise to prominence and become more prevalent. It is not yet known whether the Corona quarantine will result in an increase in the number of people pursuing their educations online.

References

1. Tuan Nguyen, The Effectiveness of Online Learning: Beyond No Significant Difference and Future Horizons, MERLOT Journal of Online Learning and Teaching Vol. 11, No. 2, 2015,p- 309 .
2. Michael P. A. Murphy, COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy, Contemporary Security Policy , Volume 41, 2020 - Issue 3, pp 492-505.
3. Farinella J. A., Hobbs, B. K., & Weeks, H. S., Distance delivery: The faculty perspective. Financial Practice and Education, , 2000, pp 184–194.
4. Rao, Kavita; Tanners, Adam Curb Cuts in Cyberspace: Universal Instructional Design for Online Courses, Journal of Postsecondary Education and Disability, 2011, pp 229.
5. Jane E. Brindley and Christine Walti, 2009 Creating Effective Collaborative Learning Groups in an Online Environment , International Review of Research in Open and Distance Learning Volume 10, Number 3.
6. Bowen, W. G., & Ithaka, S. (2012). Interactive learning online at public universities: Evidence from randomized trials. Ithaka S+ R.
7. Olaganwantte Chandasiri, The COVID-19: Impact on Education, Journal of Asian and African Social Science and Humanities, Vol. 6, No. 2, 2020, pp 38-42.
8. Shivangi Dhawan¹, Online Learning: A Panacea in the Time of COVID-19 Crisis, Journal of Educational Technology Systems. 2020, pp 5–22.
9. Saxena K. (2020). Coronavirus accelerates pace of digital education in India. EDII Institutional Repository.
10. Shivangi Dhawan¹, Online Learning: A Panacea in the Time of COVID-19 Crisis, Journal of Educational Technology Systems. 2020, pp 5–22.
11. Mishra L, Gupta T, Shree A. Online Teaching-Learning in Higher Education during Lockdown Period of COVID-19 Pandemic, International Journal of Educational Research Open. 2020; pp 1–8.
12. Mufidah, N., Suhron, M., & Wahyudi, R. (2021). Analysis of post-stroke anxiety (PSA) factors during the COVID-19 pandemic in Indonesia. *International Journal of Health & Medical Sciences*, 5(1), 1-6. <https://doi.org/10.21744/ijhms.v5n1.1807>
13. Muthuprasad T, Aiswarya S, Aditya KS, Jha GK ,Students' Perception and Preference for Online Education in India During COVID -19 Pandemic, Social Sciences & Humanities Open. 2020, pp 1-38.
14. Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2022). Post-pandemic health and its sustainability: Educational situation. *International Journal of Health Sciences*, 6(1), i-v. <https://doi.org/10.53730/ijhs.v6n1.5949>
15. Kebritchi M., Lipschuetz A., Santiago L. Issues and challenges for teaching successful online courses in higher education. Journal of Educational Technology Systems, 2017, pp 4–29.

16. Affouneh S., Salha S., N., Khlaif Z. Designing quality e-learning environments for emergency remote teaching in coronavirus crisis. *Interdisciplinary Journal of Virtual Learning in Medical Sciences*, 2020, pp 1-3.
17. K Ayebi-Arthur, *E-learning, resilience and change in higher education: Helping a university cope after a natural disaster*, E-learning and Digital Media, 2017.