

Jain E., Sharma S.K., & Kumar A. (2021). Reimagining Education in New Normal Post Covid-19 Era: The View point of Higher Education Institutions. *Prestige International Journal of Management & IT Sanchayan*, 10(2), 14-28.

REIMAGINING EDUCATION IN NEW NORMAL POST COVID-19 ERA: THE VIEWPOINT OF HIGHER EDUCATION INSTITUTIONS

Eti Jain

Research Scholar, Dayalbagh Educational Institute, Agra
Email: etijain8194@gmail.com, Mob. : 93546-97434

Shiv Kumar Sharma

Professor, Department of Management, Faculty of Social Sciences,
Dayalbagh Educational Institute, Agra
Email: Shivkumar_dei@yahoo.co.in

Arvind Kumar

Faculty of Social Sciences, Dayalbagh Educational Institute, Agra
Email: arvind.banger@gmail.com

ABSTRACT

The COVID-19 pandemic has ravaged all sectors, including education. After COVID-19, we need to rethink education in light of new prospects and challenges. The COVID-19 outbreak necessitated the closure of educational institutions globally, including student fraternities. It has emerged as the closest substitute for face-to-face instruction in the unavailability of conventional methods and one-on-one interaction. It is critical to assess students' impressions of and readiness for the online learning platform used by universities during the COVID-19 outbreak. In the event of a pandemic, authorities and higher education organisations could benefit from the findings. Students preferred schools and clinics over governments and banks during the outbreak.

Keywords: Covid 19, Higher Educational Institutions, Psychological Health, India

INTRODUCTION

Some nations have introduced travel restrictions (both incoming and outgoing) as a

result of COVID-19 in attempt to stop the disease from spreading. Some public health professionals and government authorities are promoting social isolation, self-isolation or quarantine, bolstering health services to contain the disease and encouraging individuals to work from home (Bedford et al., 2020). Several states declared gyms, libraries, theatre performances, swimming pools, and other sites for mass gatherings, including colleges, closed to battle this unseen adversary.

According to preliminary studies, the virus only affects the elderly and children. Doctors have, however, recorded several cases of new born viruses (Cai, Xu, Lin, Xu, Qu, Zhang & Xia, 2020). Because a sick child has problems playing with friends and siblings and hugging their mother, the virus must be kept away from paediatricians. Attempts to limit the spread of the COVID-19 virus amongst youth and adolescents have led to the closure of educational institutions in various countries. Closing academic institutions as a strategy of decreasing the transmission of contagious diseases in the society by disrupting crucial transmission channels has received a lot of attention in the literature (Kawano & Kakehashi, 2015). In view of the current COVID-19 epidemic, an increasing number of institutions around the world have rescheduled or postponed all campus events, including seminars, conferences, intra- and inter-university athletics, and other activities. Universities have swiftly shifted from physical classes to virtual classes, affecting a variety of courses and programmes (Gewin, 2020).

The importance of information technology in education cannot be overstated because of its huge influence on human lives. Because to the shutdown of higher education institutions, which creates impediments to students' learning, the usage of information techniques has increased during the current COVID-19 epidemic. Through creativity and learning management systems, information technology is providing a solution for ongoing learning during the quarantine time (Muzaffar et al., 2021). It has given educators the option of teaching and assessing students' completion of course work utilising IT technology. Educators, learners, and officials are all working extremely hard to maximise the use of system by ensuring that the learning project goes smoothly. The end objective is to fill the information gaps that lockdown has produced. Students and higher education institutions throughout the world have welcomed and embraced the online learning platform. Its appeal is based on its simplicity of use, pedagogical flexibility, and customised environment. According to several studies, there are some downsides to online education. These include a lack of face-to-face connection between a teacher and student, as well as challenges with connectivity (Henderson et al., 2020).

There has not been a widespread acceptance of online education as a legitimate means of instruction before this continuous pandemic has compelled people all over the world to seek out electronic alternatives. A pandemic crisis has prompted

many educational institutions to investigate and use e-learning to assist pupils cope with their new normal. Additionally, teachers and educators are experimenting with various e-learning platforms in order to give their students with more convenient learning experience possible. (R & Vinayak Mahajan, 2020).

Since this is a new trend, teachers and new students alike are getting used to this growth of e learning technique. It is now more critical than ever for students to express their views on a novel educational strategy like virtual teaching, as well as any improvements they would want to recommend or their wish to reject it outright (Cao et al., 2020). During the COVID-19 blackout period, learners in university education will be questioned about their views on e-learning.

OBJECTIVES OF THE STUDY

The objectives of the present research are as follows:

- To emphasize impact of COVID-19 on higher education and mental health.
- To enlisting varied new approaches to higher education that are emerging in India.
- To enlist initiatives education that were announced during COVID-19 by UGC and MHRD for Digital higher education.
- To make recommendations for higher education's continuing educational activities in the face of Covid-19's constraints.

RESEARCH METHODOLOGY

To collect data on the current study, researchers combed through many reports from national and international bodies on the Covid-19 outbreak. Since, it is impossible to travel outside for data collecting due to the lockdown, information about the influence of Covid-19 on higher educational system of India is gathered from a variety of credible sources, websites, publications, and e-contents.

LITERATURE REVIEW

There has been a surge in research into how students view and expect e-learning in recent years (Rajkumar, 2020b). The recent use of e-learning has led to an increase in demand, according to the "National Center for Education Statistics." Per a number of studies, students in a variety of courses are satisfied with the method of instruction. However, research shows that students' perspectives are influenced by a wide range of factors (Abelskamp & Santamarina, 2021). Learning styles and prior computer literacy skills are all factors that influence how students use technology in the classroom. Studying students' perspectives using "technology acceptability" methodologies is common (Liu, Bao, Huang, Shi, & Lu, 2020). Honorato et al., 2020) have conducted country-specific study in the categories

mentioned above in Australia, the US, and the UK.

Most students have access to internet-enabled devices like PCs and cellphones, according to these studies email, blogging, and other forms of informal networking let them stay in touch with their digital devices. Students' knowledge, expectations, and perspectives on e-learning are the focus of this study. Users' perceptions of innovation are examined in relevant literature to find possible solutions. Diffusion of innovations theory (Saura, 2020) is one of the most important ideas to explore technology acceptability in higher education to date. According to Roger, the way in which customers view innovation has a big impact on whether or not they accept it. When choosing an innovation, appropriateness, consistency with the present value set-up, prior mindset and knowledge of innovation beneficiaries, and the level of difficulty associated with learning and implementing innovation are all elements to consider.

According to the "Technology Acceptance Model", User satisfaction and perceived ease of use are the two most critical factors of technology adoption (Webb, 2019). The researchers employed an online educational experience to see if the curriculum structure had an effect on student satisfaction and learning. This study showed a connection between the format of the course and the perceptions of learning by students. Students' pleasure was found to be unaffected by student contact, while the presence of an instructor was found to have a statistically substantial favourable outcome on student knowledge. Results showed that students' perceptions of their learning are strongly influenced by their level of participation in class. Students reported more happiness when an instructor was present, according to the data. It was shown that student involvement buffered the impact of instructor presence on student satisfaction marginally. Students also had a significant impact on the influence of the lecturer's appearance and knowledge on perceived student learning.

The field of online education is still in its infancy, and it is continually evolving as a result of rapid technological advancements. To boost student learning, all teacher educators must make a stronger effort to mix pedagogy with technology. For students or learners in the current web-based learning environment where knowledge transfer and profound thoughts can occur, online debate as an interaction activity could be extremely beneficial, but only if educational leaders understand how, it works and how students are taught in the digital context ("School Media Education During the COVID-19 Pandemic: Limitations and New Opportunities," 2020). Learner-to-instructor interaction appears to be the most popular form of student involvement. Even though icebreaker/introduction discussions and collaborative work using digital communication tools ranked highly in the teaching and learning changes in process, students and instructors alike found that sending regular pronouncements or email alerts and providing feedback on all assignments were the most effective engagement strategies.

Because of this, we may conclude that students' well-being and academic performance benefit from student involvement in an e learning environment. There will be 1.598 billion students in 194 nations forced to stay at home on April 1, 2020 as a result of school closures at all levels of higher education (Rajkumar, 2020b).

It has had a huge effect on learners' academic work and life practises, as well as their own economic state (loss of graduate assistantship, worries about their own fiscal climate, future schooling and career), and their mental well-being (future schooling and career worries) (Elmer, Mephram & Stadtfeld, 2020).

Although the pandemic has brought about many challenges, some positive changes in attitudes and behaviours have emerged as a result of it, such as an increased focus on personal hygiene, quitting smoking, and eating organic, locally sourced food for one's own health as well as the health of one's family members, especially those who belong to high-risk groups (di Renzo et al., 2020).

Academics around the world have already published a number of studies on the COVID-19 contagion, including its impact on health as well as well-being, business, society, and the environment. When a student's college or university is shut down, the following are the most significant shortcomings of this study: (1) data from the epidemic's early phases, (2) sample size, then (3) a focus on a partial number of facets of a student's daily lifespan were used in this study. A student's psychological well-being, the curriculum as a whole, or some combination of the two is the focus of the majority of study (Sahu, 2020). We concluded that no thorough research has been done on how pupils from the world have dealt with the unpredicted and unusual calamity of the COVID-19 outbreak and its long-term impact on their lives. Because of the worldwide health crisis caused by COVID-19 during the initial surge of the outbreak, our study offers a unique, innovative, and timely contribution to higher education during that time (Hensel et al., 2021).

There has been a substantial impact on the field of adult education via massive open online courses (MOOCs). The impact of massive open online courses (MOOCs) on higher education is now being investigated. Professors polled in this study unanimously agreed that MOOCs have a direct impact on student achievement. According to research, MOOCs have a direct impact on students' ability to learn. Due to the fact that they provide collaborative mastery tools and also enhance individuals' affective essential entrepreneurial skills, such as the ability to gain recognition, we may conclude that MOOC are an ideal platform for entrepreneur training (Alhazzani, 2020).

In order to determine how pleased participants were with their MOOC offerings, researchers looked at Swayam, Coursera, FutureLearn, and Edx. How courses are presented, what students learn, how they are evaluated, and how they might be helped have all been examined in terms of MOOC satisfaction. Swayam and

Coursera MOOC platforms were the two most popular choices among students who provided feedback, with 65 percent of them indicating they learnt a lot. The study found that more people were satisfied than dissatisfied with their MOOC experience. Course providers should therefore pay greater attention to creating high-quality content and delivering lectures on time while also doing thorough evaluations to ensure students are learning what they should be. The students will have a positive experience and may be more likely to attend additional courses in the future as a result of this (Ma & Miller, 2020).

IMPACTS ON HIGHER EDUCATION AND PSYCHOLOGICAL WELL-BEING

Many students and professionals throughout the world are fraught with the transition from physical to online education. The faculty has begun developing classes that will be delivered to pupils over the internet. Every university's current mode of dissemination is not online education. Virtual education platforms can be used as a stand-alone delivery modality or in conjunction with one-on-one instruction by the majority of faculty members. Some instructors, on the other hand, may be unable to cope with this new technology if they lack digital literacy. Due to the changeover to online mode, concerns have been raised about the faculty's competence in adapting to new technologies. Households, students, and those who work from home are all in high demand for home PCs and IT devices. Working from a distance will be a challenge for the professors. For pandemics like influenza and SARS, school closures have been found to minimise virus transmission and flatten disease incidence peaks by closing schools.

On the one hand, this technique looked to be incredibly effective in reducing student contact and protecting them from sickness, but it also disrupted the daily routines of learners and others (Wu et al., 2010). The SARS outbreak, according to various surveys performed at the time, kept many people away from social gatherings and prevented others from returning to work. In the wake of SARS's social isolation, activity restrictions, and mental illness, there was an increase in suicide attempts and attempts at self-harm (Luo, Chua, Xiong, Ho, & Ho, 2020). Reduced daily activities and self-isolation have also been found to harm people's mental well-being, according to research. During their imprisonment, the Canadian SARS patients were subjected to a great deal of distress. 28.9 percent and 31.2 percent of individuals, respectively, reported having PTSD with emotional responses. Similar research indicated that non-medical students in Hong Kong were far more anxious than medical students. The COVID-19 outbreak is causing people to suffer psychologically (Wong et al., 2004).

EDUCATIONAL ACTIVITIES GOING FROM OFFLINE TO ONLINE MODE

The outbreak of COVID-19 has led to lockdowns in a wide range of businesses, including healthcare. Stakeholders were left with a slew of issues following the

termination of educational programmes by the organisations. Due to this, many college and university events, from application processes and interviews to exams and competitions, have been put on hold. The most difficult problem in keeping the teaching-learning cycle operating while students and teachers and staff were not fully present on campus was When the new coronavirus emerged, universities all around world were forced to immediately move courses online, rendering web - based learning (e-learning) a crucial part of educational institutions' teaching and learning processes (Ali, 2020). It was possible for higher education institutions to provide online support for instructors in a short period, on the other hand.

Covid-19 has facilitated the implementation of new technologies in education by increasing the number of schools participating in the programme. Because of this, students and teachers now have a better understanding of current technology developments. New e-conference platforms like Google Meet and Skype are being used to improve student support services at colleges and universities, along with live streaming on YouTube and Facebook and several social media platforms. As outlined in the action plan, the goal is to develop a robust educational system and motivate students to engage in online activities. To put online learning resources is not the same as to educate them. The new delivery technique calls for people to begin organising themselves based on learning methodologies, so that they do not feel isolated in their pursuit of knowledge. Since the COVID-19 pandemic occurred in countries where digital training was not widely available prior to the outbreak, appropriate training and experience of teachers as well as digital equipment must be ensured in order to avoid a repeat (Baticulon et al., 2021).

ACADEMICWORK

More and more colleges throughout the world are shunning campus programmes in favour of online courses. Some institutions had been using online instruction for some time, but it was a new concept for others. With such little time to properly analyse how the new forms should be organised, it's possible that the eminence of education in new settings deserves particular attention, given how quickly the change happened. (Sahu, 2020). However, students in rural and impoverished areas had to deal with challenges such as a lack of Internet connectivity or even a dearth of energy. We can't disregard poverty since it influences people's perceptions of the online method (David et al., 2020).

The engagement of the professor in the online environment, as well as exchanges between professors and students or between students and students, all add to the flexibility of online learning opportunities. Asking questions and receiving timely responses are both vital for students taking online courses at home. Taking online classes while at home frequently necessitates more self-control and motivation, especially in the beginning stages when students are getting used to a new system

and may feel overburdened with homework. Teachers who are unfamiliar with this new delivery method run the risk of overburdening their students with course materials and assignments.

RECOMMENDATIONS AND REVIEWS

Several colleges have rescheduled final exams, and virtually every form of organisational evaluation has been cancelled. In the aftermath of the exam cancellation, students' education suffered greatly. It appears that the delay of external evaluations has a significant effect on learners' professional and career prospects, notwithstanding the employment of numerous automated technologies in schools. In terms of assessments and evaluations, the change from physical to online training has a substantial impression. Regardless of the fact that technology has previously been utilised to enhance teaching and learning, the evaluation component is still in its infancy. (Timmis et al., 2016).

Using online evaluations in face-to-face classes is difficult. Students and professors alike are unsure how to handle late homeworks, projects, or other recurrent evaluations (Kearns, 2012). Professors will need to adapt the types of evaluations they utilise to use the internet platform. Things's difficult to keep track of how they're doing it online and make sure they're not cheating on exams (Watson & Sottile, 2010). For the time being, there are no longer any online lab tests accessible. Additionally, students who are unable to use the Internet during the evaluation process will have a substantial influence on their total GPA (Alruwais, Wills & Wald, 2018). Students have been worried since they can't advance if they stay in the same level or class.

PROGRAMS TO SUPPORT COLLEGES AT UNIVERSITIES

Many institutions are being forced to cancel or postpone events due to angrowingfigure of COVID-19 cases around the world. Staff or student meetings with several participants will be postponed or rescheduled only when required. Instead of meeting in person, they plan to use video conferencing. In the wake of a disastrous situation, it is time to put the lessons we have learned to use in solving the problems that educators, students, and administrators have brought to the table.

Due to the current circumstances, online education may be a superior choice. Students are energetic and in their 20s and 30s, and they have the option of studying online. The instructors will motivate and encourage students of all ages to participate actively. Students and faculty will be encouraged by the college administration to stay in touch via the internet or other social networking sites and to work together during this difficult period.

In order to retain a sense of academic continuity, students should have internet access to course materials and other services (Gewin, 2020). Schools and other organisations dealing with the pandemic should do everything they can to promote mental well-being, including revising health guidelines and disseminating digital guidance and lectures that teach stress management techniques. Anxiety caused by COVID-19 will prompt psychiatric help for any student who needs it (Al-Rabia Wahab A, 2020). Furthermore, students who are unable to return home should have access to hostels and residences.

Universities must establish a road map for administering admissions for future educational sessions, in addition to the existing challenges with implementing methods of assessment during the COVID-19 pandemic. Admissions officials will take into account candidates' online application data, allowing for more adaptable admissions procedures (Malhotra, 2020).

EMERGENT METHODS FOR HIGHER EDUCATION DURING COVID-19

The usage of COVID-19 sparked a wide range of concerns. It was during the outbreak that the HEIs reacted constructively and implemented a wide range of programmes. The Indian government has also taken a wide range of preventative steps to stop the spread of the COVID-19 pandemic. More than a dozen projects have been put in place since then by MHRD and UGC. These include online storage facilities, e-book libraries and educational channels on DTH TV, student radios and a variety of other educational tools on the internet.

When the school is on lockdown, students use popular messaging apps like Facebook messenger, Zoom, Facebook, Google Meet, and Telegram to participate in an online teaching and learning programme. The MHRD's ICT effort (e-Brochure: <https://mhrd.gov.in/ictinitiatives>) brings together all digital online educational resources in one location (Pravat, 2020a). In reaction to the COVID-19 outbreak and the resulting closure, the UGC issued Guidance on Examinations and Academic Calendar on April 29, 2020 (UGC notice). A new class start date of August 2020 has been proposed, with all final exams being postponed and relocated to July 2020. Lockout dates for 2020–2021 have been added to the UGC's 2020–2021 academic calendar. The following are a few of the UGC and Ministry of HRD's digital higher education initiatives that were announced during COVID-19.

- E-GyanKosh (<http://egyankosh.ac.in/>), a national data repository for the storage and exchange of data resources, is one of the Indian Open and Distance Learning Institutions. Indira Gandhi National Open University retains ownership of all intellectual property rights in eGyanKosh (IGNOU).
- Open and distance learners can access Gyandarshan, a web-based TV network dedicated to their educational and development needs (<http://gyandarshan/>).

Dedicated to the needs of society in education and development, an internet TV channel

- There is an IGNOU web-based audio advice service called Gyandhara, which may be accessed at <http://ignouonline.ac.in>. Web-based radio station where students can listen to lecturers and professionals discussing the day's events via telephone, email (gyandhara@ignou.ac.in), and chat-mode
- With 140 colleges on board, Swayam offers Massive Open Online Courses (MOOCs) with credit transfer. Swayam Prabha has 32 DTH channels that broadcast educational content of excellent quality. Postgraduate students should use e-PG Pathshala(<https://epgp.inflibnet.ac.in/>). On this website, graduate students can find e-books, online courses, and other resources. These three forms of digital networks are explained in detail in a prior publication (Pravat, 2020b).
- Postgraduate students can access more than 700 e-books through E-Adhyayan (e-Books). The e-PG Pathshala is where all of the e-books are pulled from. This also simplifies the process of creating playlists for video content.
- In addition to students, teachers, academics, librarians, library users, professionals, and all other lifelong learners, the National Digital Library of India (NDLI) (<https://ndli.iitkgp.ac.in/>) is a multidisciplinary e-content repository. It was created at the Indian Kharagpur Institute of Technology to aid students in their preparation for entrance and competitive exams, to allow people from all over the world to learn from and prepare for best practises, and to encourage researchers to conduct interlinked analysis from multiple sources. It. A single-window search is available on this digital learning resource server. You can also use a smartphone to take control of the system.
- Graduate students can deposit their doctoral theses in Shodhganga (<https://shodhganga.inflibnet.ac.in/>), an open-access repository that makes them available to the whole academic community. Electronic theses and dissertations submitted by researchers can be recorded, catalogued, stored, and distributed through the repository.

INTRUSION FOR PSYCHOLOGICAL HEALTH

Students' mental health and well-being at the university level are of critical importance. To address mental health difficulties, an amazingly cognitive intellect curriculum for COVID-19 was developed using cognitive behaviour therapy, attentiveness, and behaviour modification approaches (Pang, N.T.P. et. al., 2020). COVID Cares, an online referral system, was set up in order to accept referrals. Because peers were thought to better comprehend the psychological barriers matrix of concerns than non-peers, this method featured peer case managers, using students to care for each other's mental health. Qualitative feedback indicates that the network met the needs of both first rescuers and system users. Using this method, a wide range of mental health professionals, including therapists,

neuropsychologists, psychiatrists, and mental health medical officers, were able to provide teleconsulting to university students. Even in the early stages of the epidemic, this network was already in place (Mukhsam, M.H., et. al., 2020). Because of this, we were able to reach a considerably larger audience than would have been possible with only passive case referrals. In research from Salvaraji, L. et. al., (2020), an in-depth investigation of the depressive symptoms, nervousness, and stress was also carried out, and students of higher institutions were requested to take part in order to increase awareness of probable mental health issues within their population.

CONCLUSIONS AND ADVICE

Some universities have already taken steps to stop the virus's current and future spread, but more must be done. Students and staff will receive regular updates via email and intranet from the universities. Children's well-being and that of the company's workers go hand in hand, and this should be a top focus. Appropriate therapy will enhance students' cognitive abilities. Governments will be in responsible of providing food and lodging for overseas students. Professors should use technology and pay close attention to their students' experiences if they want to make the learning process rich and fruitful. Teachers at all levels of education have an opportunity to adapt their teaching methods in light of the current epidemic. As of now, no one knows how long the widespread will endure, and hence the demand for online and virtual schooling is continuously expanding.

Many network interfaces with online depositors, e-books, and other educational resources have been developed by the UGC and the Ministry of Human Tools and Development. Mobile and online technology can be combined with traditional broadcasting methods (TV, landline telephones) to improve the accessibility and adaptability of the education. To meet the educational requirements of the students, changes will be made to the programme model. Allow each educational service provider to deliver educational service platforms for vulnerable demographic groups. Current students prefer learning digitally as a result of COVID-19's breakout.

Particularly for virtual learning tools, it's critical to ensure that online platforms have improved security and protection processes. Personal information may be compromised if outdated software and antiviral apps are not installed on the devices. Digital devices are vulnerable to hacking. Online education should be made more accessible to students and their families by the government and academic institutions, as well as cyber security awareness campaigns. Some students appear unable to use an internet site for their studies at home, despite the fact that they have this option. There are many students who lack the knowledge, skills, and resources to keep themselves safe online. Students who spend a lot of

time on social media may be more vulnerable to online sexual exploitation than those who do not.

As a result, educational institutions run by the government should take the necessary steps to prepare for a lockdown situation in the case of a pandemic by practising with all education stakeholders online. Low-income students and members of minority groups are more likely to struggle with online education because they lack access to high-speed internet and other required technical resources. Some pupils were left feeling isolated because of it. While lockdowns save people from getting sick, they can be kept engaged and protected from pandemics by providing schools and governments with free internet access and digital devices. In some cases, students may miss out on online classes or induction meetings if they are not given advance notice. Because of this, schools must ensure that students are aware of any digital assistance services that may be available in the future.

Education institutions may be able to employ virtual labs to help give practical learning because most coursework cannot be delivered online. In the event of a pandemic, schools should ensure that pupils have access to both academic and behavioural resources. Students should be able to choose from a variety of digital, web-based, and broadcast services on an unified platform.

REFERENCES

- Abelskamp, G., & Santamarina, J. C. (2021). Academia During The Covid-19 Pandemic. *International Journal for Innovation Education and Research*, 9(1), 574–587. <https://doi.org/10.31686/ijer.vol9.iss1.2906>
- Alhazzani, N. (2020). MOOC's impact on higher education. *Social Sciences & Humanities Open*, 2(1), 100030. <https://doi.org/10.1016/j.ssaho.2020.100030>
- Ali, W. (2020). Online and Remote Learning in Higher Education Institutes: A Necessity in light of COVID-19 Pandemic. *Higher Education Studies*, 10(3), 16. <https://doi.org/10.5539/hes.v10n3p16>
- Al-Rabia Wahab A, Temsahab MH, Al-Eyadhy AA, et al.: Middle East Respiratory Syndrome CoronaVirus (MERS-CoV) associated stress among medical students at a university teaching hospital in Saudi Arabia. *J Infect Public Health*. 2020, [Epub ahead of print]: 10.1016/j.jiph.2020.01.005.
- Alruwais, N., Wills, G., & Wald, M. (2018). Advantages and challenges of using e-assessment. *International Journal of Information and Education Technology*, 8(1), 34-37.
- Baticulon, R. E., Sy, J. J., Alberto, N. R. I., Baron, M. B. C., Mabulay, R. E. C., Rizada, L. G. T., . . . Reyes, J. C. B. (2021). Barriers to Online Learning in the Time of COVID-19: A National Survey of Medical Students in the Philippines. *Medical Science Educator*, 31(2), 615–626. <https://doi.org/10.1007/s40670-021-01231-z>

- Bedford, J., Enria, D., Giesecke, J., Heymann, D. L., Ihekweazu, C., Kobinger, G., ... & Oh, M. Alpha Sall, A., Schuchat, A., Ungchusak, K., &Wieler, LH (2020). COVID-19: Towards controlling of a pandemic. *The Lancet*, 395(10229), 1015-1018.
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287, 112934. <https://doi.org/10.1016/j.psychres.2020.112934>
- Coronavirus disease (COVID-19). Retrieved July 18, 2020, from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>.
- Coronavirus outbreak in the United States. (2020, May 04). Retrieved July 20, 2020, from https://en.wikipedia.org/wiki/2020_coronavirus_outbreak_in_the_United_States.
- David, O. O., Iretiayo, A. R., Abiodun, O. O., Aborode, A. T., & Ayodele, T. I. (2020). Effects of Pandemic on Economy in Sub-Saharan Africa: A Case of Coronavirus (COVID-19). *Journal of Economics, Management and Trade*, 47-59. <https://doi.org/10.9734/jemt/2020/v26i630265>
- di Renzo, L., Gualtieri, P., Pivari, F., Soldati, L., Attinà, A., Cinelli, G., ... de Lorenzo, A. (2020). Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *Journal of Translational Medicine*, 18(1). <https://doi.org/10.1186/s12967-020-02399-5>
- Elmer, T., Mepham, K., & Stadtfeld, C. (2020). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *PLOS ONE*, 15(7), e0236337. <https://doi.org/10.1371/journal.pone.0236337>
- Gewin, V. (2020). Five tips for moving teaching online as COVID-19 takes hold. *Nature*, 580(7802), 295-296.
- Harvard University. Coronavirus (COVID-19). (n.d.). Retrieved July 19, 2020, from <https://www.harvard.edu/coronavirus>.
- Henderson, D., Woodcock, H., Mehta, J., Khan, N., Shivji, V., Richardson, C., . . . Burns, A. (2020). Keep calm and carry on learning: using Microsoft Teams to deliver a medical education programme during the COVID-19 pandemic. *Future Healthcare Journal*, 7(3), e67-e70. <https://doi.org/10.7861/fhj.2020-0071>
- Hensel, L., Witte, M., Caria, S., Fetzner, T., Fiorin, S., Goetz, F. M., . . . Jachimowicz, J. M. (2021). Global Behaviors, Perceptions, and the Emergence of Social Norms at the Onset of the COVID-19 Pandemic. *Journal of Economic Behavior & Organization*. Published. <https://doi.org/10.1016/j.jebo.2021.11.015>
- Honorato, E. J. S., Neves, A. L. M. D., Therense, M., Martins, G. D. C., Marangoni, V. S. L., Silva, T. A. D., ... Lemos, S. M. (2020). Waves of mental health Demands during the COVID-19 pandemic. *Research, Society and Development*, 9(8). <https://doi.org/10.33448/rsd-v9i8.6204>
- Kawano, S., & Kakehashi, M. (2015). Substantial impact of school closure on the transmission dynamics during the pandemic flu H1N1-2009 in Oita, Japan. *PloS one*, 10(12), e0144839.
- Kearns, L. R. (2012). Student assessment in online learning: Challenges and effective practices. *Journal of Online Learning and Teaching*, 8(3), 198.
- Khachfe HH, Chahrour MA, Sammouri J, Salhab HA, EldeenMakki B, Fares MY: An epidemiological study on COVID-19: a rapidly spreading disease. *Cureus*. 2020, 12:e7313. [10.7759/cureus.7313](https://doi.org/10.7759/cureus.7313)

- Kyungmee Lee Lecturer in Technology Enhanced Learning. (2020, March 10). Coronavirus: Universities are shifting classes online – but it's not as easy as it sounds. Retrieved July 19, 2020, from <https://theconversation.com/coronavirus-universities-are-shifting-classes-online-but-its-not-as-easy-as-it-sounds-133030>.
- Liu, J. J., Bao, Y., Huang, X., Shi, J., & Lu, L. (2020). Mental health considerations for children quarantined because of COVID-19. *The Lancet Child & Adolescent Health*, 4(5), 347–349. [https://doi.org/10.1016/s2352-4642\(20\)30096-1](https://doi.org/10.1016/s2352-4642(20)30096-1)
- Luo, Y., Chua, C. R., Xiong, Z., Ho, R. C., & Ho, C. S. H. (2020). A Systematic Review of the Impact of Viral Respiratory Epidemics on Mental Health: An Implication on the Coronavirus Disease 2019 Pandemic. *Frontiers in Psychiatry*, 11. Published. <https://doi.org/10.3389/fpsy.2020.565098>
- Ma, H., & Miller, C. (2020). Trapped in a Double Bind: Chinese Overseas Student Anxiety during the COVID-19 Pandemic. *Health Communication*, 36(13), 1598–1605. <https://doi.org/10.1080/10410236.2020.1775439>
- Malhotra, S. (2020). The Pandemic Epoch: Psycho-Social and Educational Entanglements. *Sustainable Humanosphere*, 16(1), 2106–2112.
- Mukhsam, M. H., Jeffree, M. S., Pang, N. T. P., Syed Abdul Rahim, S. S., Omar, A., Abdullah, M. S., ... Zainudin, S. P. (2020). A University-Wide Preparedness Effort in the Alert Phase of COVID-19 Incorporating Community Mental Health and Task-Shifting Strategies: Experience from a Bornean Institute of Higher Learning. *The American Journal of Tropical Medicine and Hygiene*, 103(3), 1201–1203. <https://doi.org/10.4269/ajtmh.20-0458>
- Muzaffar, A. W., Tahir, M., Anwar, M. W., Chaudry, Q., Mir, S. R., & Rasheed, Y. (2021). A Systematic Review of Online Exams Solutions in E-Learning: Techniques, Tools, and Global Adoption. *IEEE Access*, 9, 32689–32712. <https://doi.org/10.1109/access.2021.3060192>
- Ping Pang, N. T., Masiran, R., Tan, K., & Kassim, A. (2020). Psychological mindedness as a mediator in the relationship between dysfunctional coping styles and depressive symptoms in caregivers of children with autism spectrum disorder. *Perspectives in Psychiatric Care*. <https://doi.org/10.1111/ppc.12481>
- R, K., & Vinayak Mahajan, M. (2020). A study of students' perception about e-learning. *Indian Journal of Clinical Anatomy and Physiology*, 5(4), 501–507. <https://doi.org/10.18231/2394-2126.2018.0116>
- Rajkumar, R. P. (2020b). COVID-19 and mental health: A review of the existing literature. *Asian Journal of Psychiatry*, 52, 102066. <https://doi.org/10.1016/j.ajp.2020.102066>
- Remuzzi, A., & Remuzzi, G. (2020). COVID-19 and Italy: what next?. *The Lancet*.
- Sahu, P. (2020). Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. *Cureus*. Published. <https://doi.org/10.7759/cureus.7541>
- Sahu, P., & P, S. (2020, April 04). Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. Retrieved July 19, 2020, from <https://www.cureus.com/articles/30110-closure-of-universities-due-to-coronavirus-disease-2019-covid-19-impact-on-education-and-mental-health-of-students-and-academic-staff>.

- Salcedo, A., Yar, S., & Cherelus, G. (2020, March 15). Coronavirus Travel Restrictions, Across the Globe. Retrieved July 19, 2020, from [https:// www.nytimes.com/ article / corona virus-travel-restrictions.html](https://www.nytimes.com/article/coronavirus-travel-restrictions.html).
- Salvaraji, L., Syed Abdul Rahim, S. S., Jeffree, M. S., Omar, A., Pang, N. T. P., Ahmedy, F., . . . Zainudin, S. P. (2020). The Importance of High Index Of Suspicion And Immediate Containment Of Suspected Covid-19 Cases In Institute Of Higher Education Sabah, Malaysia Borneo. *Malaysian Journal of Public Health Medicine*, 20(2), 74–83. [https:// doi.org/10.37268/mjphm/vol.20/no.2/art.573](https://doi.org/10.37268/mjphm/vol.20/no.2/art.573)
- Saura, G. (2020). Filantropocapitalismo digital en educación: Covid-19, UNESCO, Google, Facebook y Microsoft. *Teknokultura. Revista de Cultura Digital y Movimientos Sociales*, 17(2), 159–168. [https:// doi.org/10.5209/tekn.69547](https://doi.org/10.5209/tekn.69547)
- School Media Education During the COVID-19 Pandemic: Limitations and New Opportunities. (2020). *Media Education (Mediaobrazovanie)*, 60(3). <https://doi.org/10.13187/me.2020.3.367>
- Spina, S., Marrazzo, F., Migliari, M., Stucchi, R., Sforza, A., & Fumagalli, R. (2020). The response of Milan's Emergency Medical System to the COVID-19 outbreak in Italy. *The Lancet*, 395(10227), e49-e50.
- Timmis, S., Broadfoot, P., Sutherland, R., & Oldfield, A. (2016). Rethinking assessment in a digital age: Opportunities, challenges and risks. *British Educational Research Journal*, 42(3), 454-476.
- UNESCO. Education: From disruption to recovery. Retrieved July 19, 2020, from [https:// en.unesco.org/covid19/educationresponse](https://en.unesco.org/covid19/educationresponse).
- Watson, G. R., & Sottile, J. (2010). Cheating in the digital age: Do students cheat more in online courses?
- Webb, S. (2019). Diversifying digital learning: Online literacy and educational opportunity. *Innovations in Education and Teaching International*, 56(5), 675. <https://doi.org/10.1080/14703297.2019.1647991>
- Wong, J. G., Cheung, E. P., Cheung, V., Cheung, C., Chan, M. T., Chua, S. E., . . . Ip, M. S. (2004). Psychological responses to the SARS outbreak in healthcare students in Hong Kong. *Medical Teacher*, 26(7), 657–659. <https://doi.org/10.1080/01421590400006572>
- Wu, J. T., Cowling, B. J., Lau, E. H., Ip, D. K., Ho, L. M., Tsang, T., . . . Riley, S. (2010). School Closure and Mitigation of Pandemic (H1N1) 2009, Hong Kong. *Emerging Infectious Diseases*, 16(3), 538–541. <https://doi.org/10.3201/eid1603.091216>