

ONLINE LEARNING: AN EXPLORATORY STUDY ON COGNITIVE STYLES AND ACADEMIC CAREER OF STUDENTS DURING COVID-19 PANDEMIC

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ABSTRACT

Our educational system has been extremely reformed, shaped, structured and ameliorated by the use of innovative technologies in this field. Computer-based learning swapped the conventional ways of teaching-learning and have a gargantuan role in producing a creative and skilful youth. Though from the emergence of covid-19 pandemic situation, it has significantly been observed and investigated that online learning wholly and solely protected the academic career of our school-going generation. The current paper is purely theoretical and is grounded in some research studies. It is an unpretentious attempt to explore the effect of online learning on the cognitive styles and academic career of students during the covid-19 pandemic. Online-learning modes comprehensively refurbished the cognition of students and improved their cognitive styles, style of thinking, perceiving, problem-solving and learning styles during the pandemic. The review of extensive related literature demonstrated that e-learning pedagogies brought a significant revolution in the teaching-learning process during coronavirus. The present study scrupulously explored the role of online learning in shielding the academic career of students during covid-19 expansion and nurtured their cognition and mental health by the utilization of innovative scientific inventions existing in the field of education.

Keywords: Online Learning, Cognitive Styles, Academic Career, Students and Covid-19.

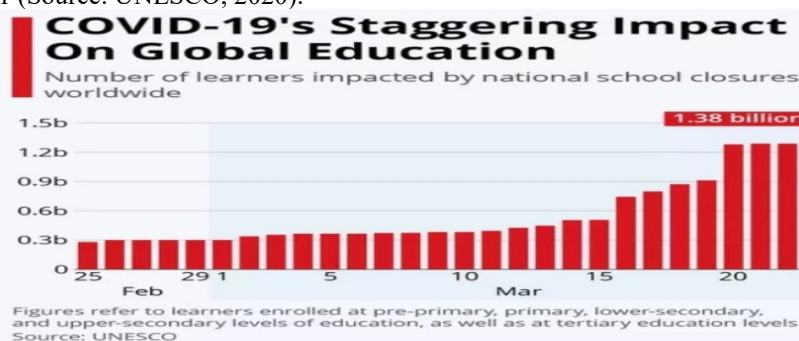
INTRODUCTION

Globally, the Covid-19 pandemic situation has brought a significant turbulences in human life especially in health, education, and business sectors. It has comprehensively converted normal life into an abnormal one. From the different phases of covid-19 related lockdowns, fluctuations occurred in all the parameters of human life. This outbreak was originally loomed in Wuhan city of China and expanded throughout the world with a big interruption in human interaction. The National and International health organizations stabbed their best to save the lives of people and initiated the vaccination centers all around the world to squash the curve and prevent this disease from its transmission. This uninterrupted chain thoroughly influenced the health & educational system in particular and other businesses, marketing, private sector trades etc. in general also. Even though Bhutan remained the first country to announce the closure of schools with all other institutions and bargain of business hours during the second week of March 2020 (Kuensel, 2020). Hence, when the whole world was punched by Covid-19 inflation, instant actions were taken by the central and state governments to abscond the educational institutions from school to higher education levels throughout the sphere. Lockdown and precautionary measures were espoused in schools, colleges and universities in a direction to evade the physical interaction among students, teachers and with each another. The explosion of covid-19 disturbed the teaching-learning practices in schools and henceforth face to face collaboration was totally obliterated.

NEED AND SIGNIFICANCE OF THE STUDY

Although young generation is still in chaos and are surviving in difficult situations where their cognitive functions have seriously been hampered to a very extent. From the emergence of this ongoing disaster, all the students were being mentally disturbed and they could not decide their future in these perspectives. At the initial stage of this virus, everyone was feared, worried and under stress which affected the power of perception, sensory modes, the capacity of responding to real threats and all the dimensions of cognitive styles. Eventually, World Health Assembly indorses reinforcing measures to armour mental health and its operations during public health emergencies. Hence, it is manifested from the sources that unemployment, financial instability, disruptions to education, social distancing, removal of physical interaction, prohibiting of religious gathering etc. resulted as the risk factors for mental health, cognitive imbalance, behavioural problems, frustration and despair etc. This disastrous period of human life brought significant alteration in different cognitive styles and affected the ways of solving problems, making decisions, power of judgement and learning styles etc. Eventually, 204,158,425 Coronavirus cases were registered so far all over the world, among them, 4,316,479 were reported as deaths, whereas 183,352,407 were recuperated cases. The continuing off-line education and learning of almost 1.38 billion

students of schools, colleges and universities throughout the globe has significantly been affected from March 2019 to March 2021 (Source: UNESCO, 2020).



Exploring several precautionary measures to thwart unfurl of covid-19, the education system and the educators called for 'Education in Emergency' by employing several online learning podiums for delivering online classes. The paradigm shift of providing remote learning opportunities has also been weighed as a good opportunity for teachers and students to become more creative (UNESCO, 2020b). The paradigm shift from off-line learning to online format through WebEx, Google meet, Zoom, Slack, Cisco etc. made it possible for students to make their learning continue from home. These applications connected students constantly through android phones or laptops with their respective teachers to continue their education and learning in these difficult situations. The scope of technology used for educational purposes in classes had been shifted or expanded to education received at home through multiple channels. E-Learning apparatuses have conned a decisive role thru this pandemic, assisting schools and universities to facilitate student learning due to the closure of universities and schools (Subedi et al., 2020). Since the emergence of covid-19, the academic career of students has meticulously been affected and kept them in hazardous situations. Even though parents were also feeling ruinous in terms of the academic career of their children as they could not pursue such a professional way of schooling, praying, learning, participating in curricular activities, peer relations etc. Although remote learning did not fulfil all required needed skills, physical resources, infrastructure set up, guidance counselling sessions and organizing technical awareness programmes to ensure the thriving career of students. Getting sudden commotion in the normal way of educating the children in schools, young students in colleges and research scholars in universities etc. brought a significant changes in their academic area.

In this context, some of the important studies are given below:

Dhawan (2020) educational institutions are continuously using the conventional methods of teaching-learning in the classrooms. Hence, for the past few years, many modern technologies of education were being started to use just like the blended approach was introduced in some academic institutions. Nevertheless, the explosion of the covid-19 outbreak shook the entire world and influenced the whole education system. This outbreak systematically changed the educational pedagogies from offline to online mode. This covid-19 outbreak significantly affected the incoming-outgoing process of schools, colleges and universities. During the covid-19 period, our traditional approaches of teaching-learning methodologies drastically shifted from offline to online mode. In this study, the importance of strengths, weakness, opportunity and challenges of online learning were included in this scenario. The present study also highlighted the value and importance of Edu-Tech startups during challenging days of the natural disaster of Covid-19. Hence, for the continued growth of the educational system various online platforms were initiated for achieving the multiple goals of students, faculty, communities, societies, and the entire nation.

Jena (2020) explained the sudden expansion of the covid-19 outbreak and its significant influence on whole humanity. Whereas the second-hand educational structure was devastated and due to this global outbreak, all educational institutions were closed off. The teaching-learning procedure was thoroughly shifted from offline to online platforms. The reports showed that 32 crore learners ceased their learning and could not take part in the school. The present study evoked that higher education institutions continued their efforts to run the process and managed the continuity of teaching-learning through online modes. Instead of covid-19 out-break the research and services were also not hampered in higher education with some innovative tools and techniques. The present study highlighted the impact of Covid-19 on HEIs in India. This study searched out that instead of covid-19 pandemic novel and innovative methodologies, pedagogies, techniques and other scientific inventions that occurred in the field of education were employed at the highest level in India to provide the best educational service to students of today and tomorrow.

The study of **Mahyoob (2020)** highlighted that the covid-19 has disrupted the whole globe. This calamity included industries to some extent but the educational system was most affected and were transferred from offline to online mode. To continue the learning process of the education system, online learning was the only great source for

educational growth in the world. The present study was done to define the challenges and obstacles faced by English language learners. After, data collection descriptive statistical measures were employed to analyze the data which signposted that impact of online EFL learning during covid-19 were associated with technical, academic, and communication challenges. The results also represented that EFL learners were not found gratified with online methods of learning as they could not regulate their virtuous progress in language learning performance.

Pokhrel & Chhetri (2021) indicated that the whole globe was badly affected by the covid-19 disaster and abruptly made unpredicted encounters about which no human was familiar. It brought total disruption in the chain of teaching-learning at all levels of education in human history and approximately 1.6 billion learners in more than 200 countries were severely affected. According to the reports of online surveys, 94% of the world's students were found out of schools by this outbreak and took a historical significance on earth in human life. After getting some relaxation in this disaster reopening of schools and slowly joining of students was another challenge for students and the whole educational system. Entering into schools was not easy now for students as they should have to track preventive measures of wearing the mask, social distancing, and low rate of students in the school etc. Although this study emphasis on providing a comprehensive report of Covid-19 and its effect on online teaching-learning platforms and indicated the way through which we go with these online formats in offline classrooms.

Radha (2020) demonstrated that e-learning has grown as an essential component in the teaching-learning process at all levels of education. E-learning mode provides efficient, purposeful, dynamic, ingenious and self-paced opportunities for learning. In this study, a stratified random sampling method was used and primary data was collected through Google forms from 175 students. The collected data was analyzed to know the attitude of students towards e-learning. The findings of the study described the effect of e-learning on students, their interest in e-learning formats and their performance. The results also demonstrated that e-learning has taken place in the cognition of students and became popular among students in the pandemic period.

Thus, the present paper is a genuine attempt to explore the effect of online learning on the cognitive styles and academic careers of students during the covid-19 pandemic.

OBJECTIVES OF THE STUDY

- To explore the effect of online learning on cognitive styles and academic careers of students during the covid-19 pandemic.
- To study pedagogy of online learning and its consequences during the Covid-19 pandemic.
- To study online learning platforms used by the learners during the Covid-19 pandemic?

METHODOLOGY OF THE STUDY

The present study is purely theoretical and is based on some research studies. Various research studies related to online- learning, cognitive styles, academic carrier and covid-19 pandemic have thoroughly been reviewed to design the current paper. While preparing this paper researchers have consulted reputed journals of national and international level, reports, essays etc. to achieve the objectives of study.

ACCESSIBILITY AND OPPORTUNITY TO ONLINE LEARNING DURING COVID-19

Covid-19 outbreak designed the online structure of teaching-learning and helped in acquiring knowledge that incited students toward the usage of digital equipment for educational purposes. Consequently, it was a big challenge for students to get education and learning opportunities from different e-learning sources because most of the students from remote areas had not adequate internet facilities to utilize these platforms. Despite this, maximum number of students at the school level had no android phones or laptops to take their classes in online mode. The students having good access to these digital equipment's did not face any challenge or workload as compared to those who were less privileged. The students whose parents are still not capable to purchase the smartphone for taking online classes are far away from the benefits of online education. Having access and opportunity to these online educational platforms would also benefit the differently-abled students to learn and educate them at their own pace in homes. Online learning also allows physically challenged students with more freedom to participate in learning in the virtual environment, requiring limited movement (Basilaia & Kvavadze, 2020). From the covid-19 pandemic, the regular up and down of students from school to home was entirely eradicated due to which their social relationships were also hampered. Some of the students who were facilitated instantly by their parents with digital equipment of learning did face the least challenges rather than those who had not these facilities at the preliminary flash. A large number of students in India belong to rural and far-flung areas where the internet, Wi-Fi, broadband facilities are still not available hindered their academic progress to the great extent. The parents of these disadvantaged students also felt unsatisfactory and found the academic career of their children at stake due to not having the facility of online learning tools. Fortunately, with the passage of time most of the students arranged smartphones for their online classes which continued their academic progress and ensured them to take the benefits of online learning. Due to the unceasing growth of covid-19, an engorged number of

students were found who significantly used the online-learning equipment and apps for their academic purposes. Various online educational platforms were already established like ED-TECH and cloud computing as they are manageable at judicious prices and are easily accessible. Making teaching accessible from a long-distance students have been using online platforms and applications for efficient learning. Platforms like G-Suite and Edu-Page are widely employed in the education process (Google, 2020 and Edupage 2020). In these pandemic situations online learning platforms just like Google, Microsoft, Zoom and Slack were mostly employed for educational purposes.

IMPLICATIONS OF E-LEARNING REGARDING COGNITIVE STYLES OF STUDENTS

No two individuals are identical in the world neither from physical appearance nor from cognitive modes. The term cognitive styles refer to a universal perspective that involves attention, perception, learning, memory, reasoning, decision making and problem-solving etc. A few decades ago, generally traditional methods were used in the classrooms which had the great impact on the psychological well-being of students. Henceforth gradual developments in the pitch of education in terms of technology brought significant changes in the thought process of humans. However from the last 2.6 years, online learning thoroughly impacted students in the context of personality development, academic development, cognitive psychology, mental development, emotional development, school and social adjustment etc. The use of ICT and E-Learning contents transform the current generation from old random memorization methods to intellectual knowledge gaining, skill acquisition, behavioural and cognitive functionalities. Comprehensively exploring the relevant literature of national and international levels it is illuminated that upshots of modern educational transactional approaches on cognitive functioning and its various styles are of supreme connotation. These intellectual meta-analyses exclusively suggest the accrument in the academic field of the current generation at all the levels of education. Conveniently these scientific experiments and inventions in the field of education extended broader outcomes at a significant level and enhances mental development, cognitive styles, intellectual perspectives and broaden all the dimensions of cognition.

The valid and reliable data obtained from National Study on Student Learning (NSSL), Flowers, Pascarella, and Pierson (2000) discovered that the usage of computers or email to communicate with an instructor about course-related matters influenced scores on standardized measures of reading comprehension, mathematical reasoning, critical thinking, or a composite measure of all three dimensions of cognitive development. Online platforms solely rescued our educational system during these pandemic days and continued the teaching-learning process through online modes through which students did not face any academic anxiety. The psychological well beings empowered the technical skills, intellectual power, mental ability and academic integrity while staying at home during coronavirus phase. In the existing epoch, cognitive functioning and structure are refitted by the up-to-date technologies, knowledge and expertise of computer systems which lengthened the thought process and created innovative ideas in one's mind. The scientific inventions promoted the diversions in one's cognitive functioning and hence proved the drastic changes in cognitive styles along with their learning styles. E-learning platforms accrue the curiosity among students to be more indulged in difficult tasks and try their best for solving them. Although one's engrossment with these methods of learning and emergent technologies stretch the vision and advance the good mental health of the young generation. Scientific summaries and research thoroughly explored the significant role of E-learning on the cognition of students at all levels.

ACADEMIC CAREER OF STUDENTS DURING COVID-19 OUTBREAK

Instead of providing supportive e-learning podiums, the researchers have also demonstrated that the closure of schools resulted in concrete learning losses. Such research from Belgium, The Netherlands, Switzerland and the United Kingdom depicted both inequality and learning losses. The formative and summative evaluation techniques to check the student's progress cordially changed from off-line to an online mode which created hesitation and misperception among the students, teachers and parents as well. Having no access to digital infrastructure like android phones, laptops etc. needed to join the online classes had created inequality and frustration among psychological well beings to the great extent. The performance level of students in the academic arena was likely to be thrown down for both year-end examination and internal examination due to reduced contact hours for learners and a dearth of consultation with teachers when facing difficulties in learning/understanding (Sintema, 2020). The true nature of the academic career of students lagged during the covid-19 session and restricted their harmonious development at par. The success of teachers and the whole education system is based on the prosperous achievement of students that insist teachers for needed improvements in the education system. From the past two years, formal way of education system meticulously retained off and put massive influence on the intellectual abilities of school going generation through the globe. To ensure the continuation of delivering teaching, various online platforms have been hunted and utilized to provide a learning experience and academic skills. Fortunately, the current innovations in the field of educational technology enhanced personalized, and collaborative teaching-learning to meet the required needs and skills of the 21st century. Keeping in view the nature of E-learning environment, it should be noted that it removed face to face interaction from one side and the disciplinary way of education of youth from another side. But uncountable and independent advantages of E-Learning pedagogies

transform the whole education system from darkness to light and lay focus on developing the potential and creativity of the learners in innovative and unexpected ways. During Covid-19 period online classes did not resist and hindered the learning opportunities for students and rescued their academic career from spoiling. Though the current pedagogy of taking online classes for all the courses fetched a great satisfaction among parents about the education of their children. Open Educational Resources (OERs) and MOOC with other online devices and applications like Zoom, Google Meet, Cisco WebEx, etc. have conferred myriad teaching, learning, experience need-based training and skills which are mandatory for students to overcome these hindrances and jubilate their personal, social and academic life.

EFFICACY OF ONLINE LEARNING DURING COVID-19

Everything dwelling in the universe always possesses some advantages from one side and some disadvantages from another side. Online learning has also some positive and negative aspects which help us in determining and selecting the appropriate methods for efficient delivery of learning without any interruption. To remove the traditional methods of teaching-learning which only focused on remembering and memorization new technologies in the educational scenario were initiated. Throughout the covid-19 pandemic phase, the formal way of schooling was closed which had ruined the academic career of students to the great extent. But fortunately, online learning modes were used from a distance to reach the students for continuing their education and learning. Still online learning modes could not full fill the objectives of every student but it also escaped students from destroying their academic careers. The mammoth number of students across the country who did not possess smart phones or laptops had faced principal encounters during covid-19 to continue their educational progress. Not at all but to the great magnitude online learning had sufficiently fulfilled the purposes of students, education, society and nation as uncut. Online learning has a significant contribution to online classes, teaching, learning, taking the regular assignment, testing, and evaluating. Education at home was not an easy task for school, college or university going students but it is online learning platforms that made it possible for them in an intelligent way.

FINDINGS OF THE STUDY

In the present study, various online documents, reports, researches and research papers of national and international level published in reputed journals were comprehensively reviewed and explored. This related literature on online learning in the context of cognitive styles and academic career of students during covid-19 pandemic have marvellous importance in the educational formation of today and tomorrow. In the current study major findings and results depicted from the above exploration are below:

- The covid-19 pandemic has significantly augmented the level and opportunities of distance learning at all educational stages.
- Coronavirus played a role of big disaster for the whole humanity and resulted in human and economic losses.
- Cognitive styles are a primary unit for any educational contribution and online learning technologies of education broaden the scope of intellectual functioning.
- Scientific inventions in the field of education transferred the fifth generation from rote memory and convergent thinking to creative and divergent thinking.
- These technologies offered great access and opportunity to broaden one's vision, perception, thought and mental operations to the highest.
- Students containing different disparate cognitive styles use and take great advantage of these online platforms in different perspectives and prepare them for problem-solving activities.
- Outcomes of the study also demonstrated that the education system has completely been disrupted and lost its bearing in the teaching-learning milieu like before.
- Inequalities were also seen in the system of education during covid-19 because every student did not possess the online pieces of equipment for teaching-learning.
- The study also explored that some students from disadvantaged sections of the country who were not accessible to regular schools got an opportunity of equal learning.
- Online learning has created an inclusive setting where children with special needs were taught along with normal ones in the digital atmosphere.
- Differently-abled students got an opportunity of learning at their homes irrespective of any discrimination.
- Online-learning modes protect the students from being the victims of covid-19 and save their precious life at home.
- By employing online learning modes students have availed the benefits of continuing their education instead of strict lockdown and their regular classes, quizzes, assignments, tests and evaluations were done through online platforms.
- The present study also revealed that the academic career of students was badly affected to the great extent by the closure of formal interaction in the schools and ruined the social interaction of students.

- Instead of online educational opportunities students did not fulfil their educational objectives promptly as smoothly they might only be achieved in the offline mode.
- Lack of internet services, weedy signal, and disruptions during online classes resulted in the learning loss of students at par.

EDUCATIONAL IMPLICATIONS OF THE STUDY

- Online learning tools should be used at school level so that students will become competent to utilize these platforms in an intelligent way in future.
- Workshops should also be conducted in which teachers and students learn in collaboration the use and consequences of these online learning tools.
- Educational boards and higher authorities should include importance of online learning tools and their application in the syllabi from the early stages of education.
- Curriculum framers must also include online learning pedagogies and its consequences in education system and the real life of 21st century.

CONCLUSION

Today is the world of science and technology and the solution of every task is in online mode available now. Through the pleasant contribution of technology in the field of education make teaching and learning more accessible to students without any discrimination. From the Covid-19 epidemic, online learning platforms penetrated the whole globe to provide online teaching through multiple application software's which was not possible a few decades ago. In these stressful conditions, the structure and functionality of the psychological world of students are comprehensively altered through online modes of learning. Students' motivation, readiness, classroom practices, formal ways of interaction, cognitive styles and learning styles to the prodigious level has significantly been affected by online modes of learning. How so ever, online learning platforms did not give any chance to put the academic career of students at palisade. These current and online learning techniques or pedagogies nurtured the cognition, mental health and academic career of students during the covid-19 outbreak and made them techno-savvy.

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