Asian Journal of Distance Education

Pandemic Experiences of Distance Education Learners: Inherent Resilience and Implications

Rikisha Bhaumik, Anita Priyadarshini

Abstract: The COVID-19 outbreak in March 2020 affected the Indian education system quite adversely, almost bringing it to a standstill. Amid this crisis, the F2F education system adopted tools and technologies otherwise prevalent in distance education (DE). There is ample literature corroborating the widespread use of such tools by F2F education during the lockdown. However, there is a need to study how the existing distance education system in Asia and countries like India which uses printed self-learning materials, digital technology, and F2F counselling functioned during the same period. This study tries to identify the changes brought about in this system as a result of the COVID-19 pandemic. The purpose of this study was to find out the experiences of learners of a DE program, viz. M.A. in Distance Education (MADE) offered by the Indira Gandhi National Open University (IGNOU), New Delhi, India which introduced emergency online interventions during the pandemic. A mixed-method approach was used to elicit responses from the learners regarding their psychological state, teaching-learning transaction, learner support and autonomy, and the role of technology. An online questionnaire comprising 21 Likert-type items and 4 open-ended questions was used to collect responses from 57 participants. The study found a positive response to the use of online synchronous tools for counselling with most of the participants desirous of continuation of such interventions even after the pandemic. The majority reported non-interruption in their DE studies and felt confident of completing the program owing to the flexibility of the system. The study affirmed DE's resilience to the effect of the pandemic upon its learners. The expectations from learners and institutions for enhanced use of online technology in the future raise a strong requirement for continuous professional development (CPD) of distance teachers. The findings hint toward further strengthening of DE in the country to increase the overall resilience of education.

Keywords: distance education, emergency remote teaching, Covid-19, online academic counselling, continuous professional development

Highlights

What is already known about this topic?

- The literature contains many well-documented pandemic experiences of F2F learners and teachers
- The existing operations of all forms of education came to a halt and institutions including distance education began scrambling in response to the immediate threat caused by COVID-19

What this paper contributes:

- The study illustrates the pandemic experiences of distance learners both from a psychological and academic point of view to ascertain the resilience of distance education
- The paper documents the changes in the DE system in response to the challenges of the pandemic

Published by Asian Society for Open and Distance Education (ASODE), Japan
ISSN 1347-9008 http://www.asianjde.com/

Implications for theory, practice, and/or policy:

- The findings reinforce the use of multimodal delivery of learning in DE and emphasize the need for further developing the asynchronous and synchronous online capabilities
- CPD of distance teachers especially with respect to emerging technologies and instilling of independent learning skills among the distance learners is strongly urged in the paper
- Remodeling delivery systems by developing study centers and public libraries, especially in rural/remote areas, into technology-enabled Wi-Fi spaces for online access to learners is further indicated.

Introduction

The global education system received a severe jolt during the COVID-19 pandemic. Despite centuries of experience of classroom-based education and a long history of distance education (DE), it took a calamity to rethink and re-engineer our approaches to learning and teaching (Naidu, 2020). Curtis (2020) noted how educators who had long resisted anything not offered in F2F or residential campus settings found the distance learning mandate during the COVID-19 pandemic to be a new and challenging world. Almost everyone in the education system, both in F2F and DE, felt remote teaching-learning a novel challenge during the complete lockdown situation of the pandemic. The survey on the impact of COVID-19 on higher education in four regions of the world – America, Africa, Europe, Asia and Pacific -- by the International Association of Universities found that teaching-learning got affected in almost all the higher education institutes of the world except four of the virtual universities that reported no effect due to COVID (Marinoni et al., 2020).

Green et al. (2020) point out that educational systems worldwide witnessed a mass-scale experiment in remote and virtual teaching-learning necessitated by social distancing norms in the wake of the pandemic. Due to this widespread, and also indiscriminate, use of DE tools and technologies by F2F practitioners, a recent phenomenon of emergency remote teaching (ERT) arose in pandemic times. The ERT by F2F practitioners used mostly Internet-based digital devices for reaching out to learners at a distance. The sudden and swift transition of F2F institutions to ERT was quite conspicuous mostly because F2F education has a much bigger presence than that of DE and there is a plethora of literature available to support this both in popular media and research studies. Most of the universities were compelled to adopt DE tools to continue teaching-learning in absence of brick-and-mortar structures of higher education in the pandemic (Bao, 2020; Cicha et al., 2021; Jili et al., 2021).

It is not that the DE system remained unperturbed by the onslaught of the pandemic but the alterations it underwent were not as visible as the conventional F2F system. Simultaneous developments in DE took place in response to the pandemic. However, the redesigning or restructuring of DE or how well the DE system responded to the pandemic challenges needs to be further studied. Altinpulluk (2021) feels that there is limited research available in educational sciences and distance education against the setbacks of the pandemic. By the very nature of DE, it was more prepared to respond to emergency teaching-learning during Covid-19. Bozkurt (2019) defines DE as any formal, informal, or non-formal learning activity catalyzed by media and technology to lessen physical and psychological distance through increasing interactivity of the learners with learning resources and facilitators. Further, flexibility is rooted in the DE and online learning (OL) literature as an approach to free learners from the constraints of time, pace, and place, and enable them to participate in education from ‘anywhere’ at ‘anytime’ (Houlden et al., 2021). Cakiroğlu et al. (2019) observed that with the development of the DE tools for asynchronous and synchronous communications, learner-centered education approaches are increasingly used in DE and since the distances are not so far away as before, it is seen that DE technologies may take the role of typical educational systems.

India has a vast open and distance learning (ODL) network comprising one national open university (IGNOU), state open universities (13), directorates of DE, DEIs, correspondence course institutes (CCIs) in conventional dual mode universities, etc.

According to the All India Survey on Higher Education (AISHE), 2019-20, there are 42,86,922 students enrolled through distance mode, which constitutes 11.1% of the total enrolment in higher education in the country. In the last few decades, the DE system has created a pool of resources and infrastructures like printed self-learning materials (SLMs), dedicated TV and radio channels, tele-counselling, and online courses on indigenous MOOCS platforms like SWAYAM. The context of the present study lies in the interventions made in the Masters in Distance Education (MADE) program offered by Indira Gandhi National Open University (IGNOU), New Delhi, India. In March 2020, the Government of India (GoI, 2020) asked all educational institutions including Higher Education Institutions (HEIs) to engage in the development of online content, online teaching, online evaluation thus marking the urgent shift from F2F to DE/OL. In accordance, Staff Training and Research Institute of Distance Education (STRIDE), IGNOU which houses the MADE program, initiated direct teacher-learner interventions through OL such as online academic counselling (OAC), evaluation of scanned online assignments, direct mailing of digital study materials amongst others for this program.

The present study revolves around the experiences of DE learners of the MADE program in terms of finding out more about four aspects: 1) Psychological state of learners, 2) Teaching-learning transaction, 3) Learner support and autonomy, and 4) Role of technology.

The 'psychological state' is a broad term and so, for the sake of the present study and in relation to DE learners, its meaning is restricted to the feeling of isolation in OAC, lack of motivation to complete the program, and stress/anxiety due to delay or rescheduling of exams. OAC sessions in the program are online interactive sessions conducted during the DE academic year to deal with potentially difficult areas of the program. IGNOU's MADE program provided 84 OAC sessions along with other technological interventions during 2020-21.

The teaching-learning transaction is key to DE and its effectiveness largely depends on the efficacy of online resources, tools, and technologies introduced in response to COVID lockdown. The success of the teaching-learning transaction also relies on how learners perceive the usefulness of OAC sessions, digital study material available online, online social networking platforms and apps for interaction, ease of communicating with teachers and fellow learners, multimedia tools and resources, etc. For example, IGNOU's resources for ODL, and STRIDE's dedicated online facility for assignment submission.

Learner support includes components like teachers' responses to queries and the importance of assignments or feedback on the assignment. It may also include psycho-social, technical, and academic support through online communities and dedicated support channels at the institutional level. Learner autonomy is crucial for a learner's success in ODL. It is decided by the degree to which a learner depends on the F2F teaching for learning. The greater is the dependence, the lesser is the autonomy. In other words, learner autonomy determines the self-efficacy and independent learning abilities of the learners. Moore (1973) described independent learning as a major form of educational transaction where the learner and the teacher are separated by time and space enabling the learner to exercise autonomy to a great extent.

The role of technology is paramount in the remote teaching-learning transaction. Therefore, technology's usage and its cost, learners' preferences towards specific learning technologies, viz. online, radio, TV, etc. are also crucial in assessing a DE program's effectiveness in delivering education during such emergencies.

The research tool used in the study tries to incorporate suitable items to find these aspects of distance education during the COVID-19 period. The significance of this study lies in its attempt to bring out the strengths and weaknesses of the existing DE system in the country. Also, this may help the policy makers to view the central role which can be played by the DE system, especially during emergency

situations arising out of natural or man-made calamities, which might hamper the regular mode of education of students.

Literature

COVID-19's impact on education was felt worldwide. COVID-19 affected teaching and learning at almost all higher education institutions (HEIs) and only 2% of HEIs reported that teaching and learning were not affected (Marinoni et al., 2020). The COVID-19 pandemic severely affected the total educational system of India (Jena, 2020). The pandemic compelled the entire education system to experiment with novel strategies so much so that returning to pre-COVID scenario may be impossible (Naidu, 2020). A transition to DE tools, mostly online, to reach students swiftly happened in regular HEIs across the world. According to a study by Marinoni et al. (2020), two-thirds HEIs reported having completely replaced classroom teaching with distance teaching and learning, and another one-fourth reported being in the process of developing solutions to continue teaching and learning, through digital or self-study means. In India, while some institutions were already familiar with online education, many others started using it only recently due to COVID-19 crisis and began experiencing the benefits and challenges associated with it (Parthasarathy & Murugesan, 2020). In a study about ERT in the South African higher education sector, Jili et al. (2021) found that ERT was the most sustainable option amidst COVID-19 lockdown. Zawacki-Richter (2021) in his study on the impact of COVID-19 on digital higher education in Germany noted there had been significant investments in the technical infrastructure in a very short time, and that centers of excellence for digital teaching can be relevant to the system and need to be better equipped.

COVID-19 Impact on Learners:

The operation of all the HEIs, both F2F and DE, was hampered equally. Learners of both F2F and DE systems felt the psychological impacts of educational uncertainty. Dimri (2021) in his study noted that learners' pursuit of learning was disturbed due to the sudden closure of HEIs leaving them anxious and restless about their academic calendar. The study by Arribathi et al. (2020) on the analysis of student anxiety during COVID-19 found an overall decline in enthusiasm for learning among all the students because of the COVID-19 outbreak. However, the study also reported the level of intrinsic motivation for learning to be more in the case of non-regular students (employed and older) when compared to regular students (younger and dependent on parents). Similar findings by Quintiliani et al. (2020) suggest that students' stress levels increased because of the spread of the COVID-19 epidemic and lockdown. Bhaumik and Priyadarshini (2020) reported mental exhaustion among the F2F learners caused by back-to-back online classes, extended on-screen time, and the feeling of isolation. The students who were ready for digital learning reported less tension, overload, worries, social, and emotional loneliness (Handel et al., 2020).

Increased Usage of Technology by Teachers

The COVID-19 situation vis-à-vis education amply outlined the significance of technology for remote teaching-learning along with other aspects of the learner-institution relationship. According to Motteram and Forrester (2005), there was an increasing use of technology by teachers to deliver courses to campus-based students as well as to distance learners. While technology is important, it however cannot replace the significance of pedagogy. It was observed that the primary focus of teachers remained the integration of technology rather than the pedagogy of teaching online or through other remote means. Bozkurt (2020) stresses on technology adaptation rather than integration because learning goes beyond observed behavior due to its social and contextual nature. It was observed that the educators were thrown into online teaching trenches with minimal or no training and support about the pedagogy and methods of distance education (Curtis, 2020). Sari and Nayir (2020) in their study noted that the teacher participants not having enough information about the DE process and inadequate in using technology faced difficulties in preparing course content and managing the process.

Learner's Experiences of ERT

Though teachers' professionalism arguably increased in value because of their spontaneous adaptation to a changing environment (Malandrino et al., 2021), students felt otherwise. They tended to overwork because of self-isolation and were deprived of emotional and mental support they used to receive from the teachers in F2F mode (Ando, 2021). Bozkurt and Sharma (2021) stressed on the need of humanizing education and guiding educational practices through care and empathy, especially during tough times like the one prevailing. According to Carrilo et al. (2020), the need for a comprehensive and solid view of the pedagogy of online education is must to make sure that the chosen tools or resources help learners achieve the desired results. Tsai et al. (2020) through their self-efficacy questionnaire for online learning found that learners' perceived confidence in online interactions and collaborations increased with their prior experiences of taking online courses.

Schuls and Demers (2020) feel that learner autonomy is more important in the online learning environment than in the F2F approach. Camacho and Legare (2021) states that the adoption and use of online education programs require a shift in the mindset from a traditional approach to learning to a more flexible perspective. Waterhouse et al. (2020) thus feel there is now a need to design supports and interventions that help students in the distance education context to enable them in becoming independent learners.

Theoretical Background

DE system in India prior to the pandemic was characterized by the printed self-learning material (SLM) supported by non-print technologies like radio-counselling, television lessons, and web-based content delivery. Sharma (2001) reported that IGNOU initiated online delivery of two educational programs only two decades ago in January 2002. Based on critical pedagogical principles of equity and social justice, distance education has until now been used to provide educational opportunities for self-regulated learning to intrinsically motivated learners. The onset of pandemic converted almost all forms of educational transactions into the distance or remote learning transactions. While the F2F transactions faced considerable difficulties in transiting into emergency remote teaching, it would be interesting to find out how the DE system itself managed the crisis. With considerable experience in catering to the needs of remote learners using various tools and a flexible, learner-centered transaction, the DE system may have exhibited better readiness during the pandemic. However, there is a need for more studies on the assessment of DE's ability to respond to educational challenges arising due to the pandemic in terms of the experiences of DE learners. It, therefore, becomes pertinent to find out how DE fulfilled the needs of its learners amid the pandemic and how well learners responded to its programs. This study tries to find out how the distance learners were affected by the pandemic and how resilient is the DE system to face such crisis situations.

Methodology

Purpose of the Study

The research objectives were:

1. To find out the psychological state of DE learners during the pandemic
2. To find out the teaching-learning transactions followed in a DE program during the nationwide lockdown in India
3. To study the perception of learners toward the learner support available to them
4. To understand the role and effect of technology on distance learners
5. To interpret sustainable future implications for Distance Education

Research Model/Design

A mixed-method approach was used to gather quantitative and qualitative responses from the participants. For this, the researchers followed the convergent parallel mixed research design, where the quantitative data was simultaneously collected with the qualitative data. The purpose of a convergent (or parallel or concurrent) mixed methods design is to simultaneously collect both quantitative and qualitative data, merge the data, and use the results to understand a research problem (Creswell, 2012). According to Creswell, 2012, the combination of both quantitative and qualitative method provides a better understanding of the research problem than either method by itself. The researchers thus used the convergent parallel design to get a better understanding of the DE learner's experiences during the pandemic.

Data Collecting Tools

An online questionnaire was designed using Google Forms. The questionnaire had two sections, one for quantitative data collection and the other for qualitative data. The quantitative part consisted of 21 Likert-type items based on the four dimensions of the study - the psychological state of the learner, teaching-learning transaction, learner support and autonomy, and the use of technology in DE respectively in the context of the pandemic. The qualitative part included four open-ended questions to further understand the learners' perception in relation to the four research objectives.

Sampling or Study Group

Purposive sampling was done as the sample comprised the post-graduate distance education learners of the discipline 'Distance Education', i.e. the M.A. in Distance Education (MADE) program of IGNOU. IGNOU is an autonomous mega open university in India, established in 1985, under the Ministry of Education (MoE). The sample size was 91 learners, out of which 57 learners responded to the questionnaires. The average response rate was 62.6%.

Data Analysis

The quantitative data analysis was done using SPSS 25 and the qualitative data was examined using content analysis. Important themes which emerged out of the content analysis of the qualitative data were coded. For quantitative, mean, standard deviation, and percentage of responses were analyzed for each item. Both the data were reviewed jointly to interpret the findings of the study. Caracelli and Greene (1993), while elaborating analytical strategies for the integration of qualitative and quantitative data, pointed out joint review of qualitative and quantitative data as data consolidation or merging method of data analysis. The researchers utilized the consolidation method of data analysis for this mixed method study.

Validity and Reliability

For content validity, the questionnaire was sent to three experts of the field. The inputs received were incorporated in the final questionnaire. The researchers also did a pilot study on a smaller sample to check the reliability. The items with larger standard deviations were improved before rolling out the final questionnaire. The internal consistency of the items was computed using Cronbach Alpha which came out to be 0.834, showing a good reliability of the items in the questionnaire.

Research Procedures

The online questionnaire was sent through email to 91 learners. The learners who responded were 57 in number. They were provided clear instructions along with a confidentiality statement in order to get

their honest responses. The responses were collected over a span of three months from April 2021 to May 2021.

Findings and Discussions

The participants came from diverse backgrounds and represented 16 different states, with the majority coming from the northern and eastern parts of the country.

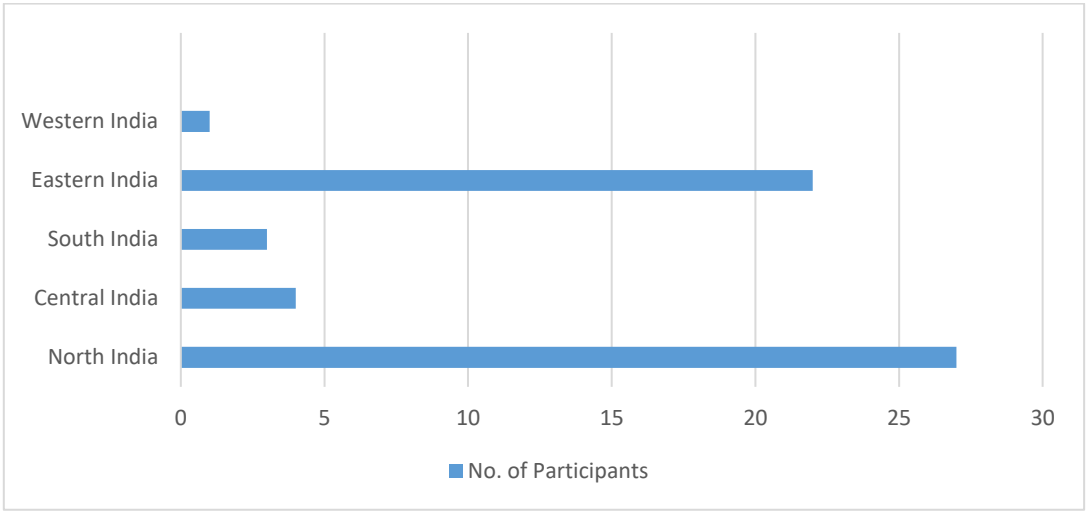

Figure 1. State-wise distribution of the DE learners.

The participants were from varied occupational backgrounds. Most of the respondents (45.6%) were academics comprising university level, school-level teachers, and private tutors. Of the participants, 17.5% were in government service and the rest 36.9% were from the corporate sector, social sector, and health sector or were homemakers.

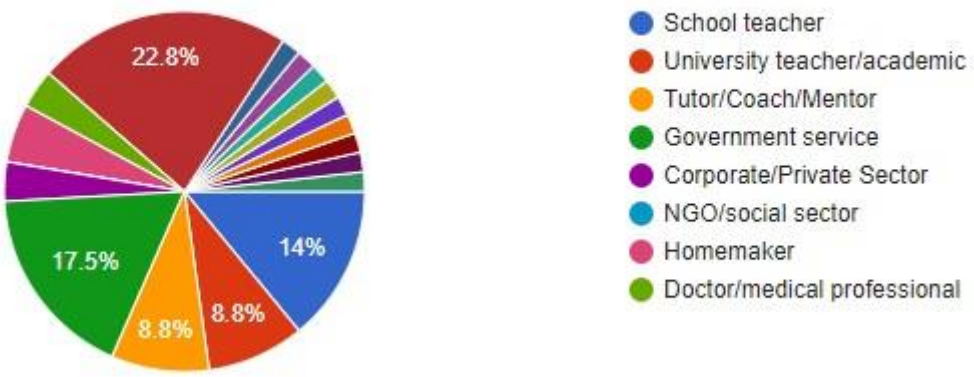

Figure 2. Varied occupational profile of DE learners.

Out of the respondents, 57.9% were females and 42.1% were males. The majority (49.1%) of the learners belonged to the age range of 20–29 years followed by 21.1% each in the range 30–39 years and 40–49 years. Nearly 12.3% of the participants had completed their doctorate, 50.9% were postgraduates, and 28% were graduates. As for employment, 71.9% were employed or self-employed and 28.1% were unemployed. Most of the participants had a considerable amount of experience in

studying through distance mode. Smartphones were the most favored device for e-learning, followed by laptops— 61.4% of the participants used Google Meet followed by Zoom used by 29.8% of the learners. Of the respondents, 28.1% possessed an advanced level of technology proficiency, 38.6% had an intermediate level of proficiency, and 33.3% had a working knowledge of using technology. For connecting with teachers and learners, WhatsApp was the most preferred medium as 56.1% of the learners used it. Rest 21.1% used emails, 19.3% connected through mobile phones, and 3.5% used Facebook.

Table 1. Demographic details of the sample under study

Demographic Type	Category	Frequency	Percentage
Gender	Female	33	57.9%
	Male	24	42.1%
Age	20 - 29 Years	28	49.1%
	30 - 39 Years	12	21.1%
	40 - 49 Years	12	21.1%
	50 - 59 Years	5	8.7%
Educational Qualification	Graduate	16	28.0%
	Post-Graduate	29	50.9%
	Professional Degree	5	8.8%
	PhD	7	12.3%
Employment Status	Employed	34	59.6%
	Self-Employed	7	12.3%
	Unemployed	16	28.1%
Distance Education Experience	Over 5 years	12	21.1%
	3 - 5 Years	7	12.3%
	1 - 3 Years	36	63.1%
	Less than a year	2	3.5%
Device used for learning	Smartphone	38	66.7%
	Laptop	18	31.5%
	Tablet	1	1.8%
Videoconferencing Tool Used	Google Meet	35	61.4%
	Zoom	17	29.8%
	Microsoft Team	2	3.5%
	Webex Cisco	1	1.8%
	Others	2	3.5%
Technology Proficiency	Basic	19	33.3%
	Intermediate	22	38.6%
	Advanced	16	28.1%
Digital Media Commonly Used	WhatsApp	32	56.1%
	Email	12	21.1%
	Facebook	2	3.5%
	Mobile Phone	11	19.3%

Table 2. Mean and standard deviation of the items

Item No.	Item description	Mean	Standard deviation
	Learners' psychological state:		
1.	Since I am studying through distance education, I did not experience any interruption in my studies due to the pandemic.	3.77	1.195
2.	Due to lockdown, I experienced a feeling of isolation and was worried about being cut off from my teachers, study center and other learners.	3.25	1.243

3.	I did not feel any discomfort due to increased use of online technology (internet and the world wide web) in distance education during the pandemic.	4.12	.867
4.	The flexibilities of the distance education system made me feel confident of completing my program, even in crisis time.	4.56	.682
5.	I experienced anxiety and stress due to rescheduling of examinations and the requirement of physical appearance at the examination center.	2.88	1.226
	Teaching-learning in DE during the pandemic:		
6.	I found online digital course materials to be as helpful as printed course materials.	3.68	1.256
7.	The online academic counseling helped me to interact with teachers and learners and enriched my learning.	4.40	0.728
8.	I benefited by being a part of the online learning community (e.g., WhatsApp groups etc.) through which I could interact even when academic counselling sessions were not taking place	4.53	0.538
9.	Use of social media like WhatsApp, Facebook, Twitter, You Tube, dedicated email services and mobile phone calling made it easier for me to connect with teachers and learners.	4.60	0.563
10.	Features like tele-conferencing, Swayam Prabha, Gyan darshan TV channels and Gyan Vani FM radio channel helped me to connect even when fast internet was not available at my home.	3.89	.900
11.	I did not face any difficulty in online submission of my scanned assignments or project reports on time.	4.21	.921
	Learner support and autonomy:		
12.	I received support from distance teachers in form of academic counselling and response to my academic queries.	4.51	.735
13.	After the pandemic gets over, I would prefer to attend face-to-face classes at study centers instead of online counselling.	2.84	1.066
14.	The component of assignment writing should be removed as it did not help me to prepare for the examination.	3.79	.977
15.	The difficulty level of the course materials is high so there should be regular weekend teaching in face-to-face mode for all the courses at the study centers.	3.07	1.223
16.	I found learning through teacher-directed face-to-face education simpler than studying as a self-learner in distance education system.	3.02	1.157
	Role of technology in the pandemic		
17.	I learned to use more digital and online technology tools for my studies due to lockdown	4.40	.678
18.		2.75	1.169

	I had to spend more money to buy data packs and appropriate phone/tools so that I could pursue my online studies.		
19.	I prefer learning through MOOCs and online learning platforms like SWAYAM than through other distance education technologies like radio/television/tele-counselling etc.	3.58	.905
20.	I would like to use online technology in distance education even after the pandemic is over.	4.44	.732
21.	I would prefer the option of online or automated proctored examination rather than physical examination.	3.47	1.269

Learners' Psychological State during the Pandemic

The responses received for items on the dimension of learners' psychological state during the pandemic reveal that DE learners were quite resilient from the psychological effects of COVID-19 pandemic on their learning. An overall 70.2% of the learners reported non-interruption in their distance studies. More than half of the learners (52.6%) experienced no feeling of isolation as compared to 36.8% of the learners who felt isolated and were worried about being cut off from teachers and other learners. As high as 96.5% of the learners felt confident about completing their program owing to the flexible approach of open and distance learning (ODL). This finding differs from the results of the study done by Arribathi et al. (2021) who found 70.92% of regular students and 69.87% of the non-regular students worried about a decline in their educational achievements due to the COVID-19 outbreak. In the present study, 82.4% of the respondents did not feel any discomfort with the increased usage of online tools and technologies during the pandemic which can be attributed to the demography of the sample under study as most of them were independent adults familiar with DE system, employed, and possessed adequate technological skills. These findings suggest a greater resilience of DE in contrast with the F2F education to resist the adverse effects of the pandemic on the learners. According to the study done by Quintiliani et al. (2021) on Italian university student's resilience and psychological impact during COVID-19 pandemic, 66% of respondents reported moderate stress and 23.4 % had high stress. As against this, the DE learners exhibited more adaptability towards the changes brought in their distance studies because of the pandemic. On the item regarding examination-related anxiety, however, the DE learners responded no differently from the F2F learners as about 40.4% of the learners experienced examination stress and anxiety. While 35.1% reported no feeling of examination anxiety, 24.6% of the respondents were neutral. These findings are in agreement with the study conducted by Arusha and Biswas (2020) who concluded that examinations cause negative effect like stress, anxiety, and depression on mental health of students. The cause of exam stress in the present study may be attributed to the requirement of physical appearance in the exam centers amid the pandemic, or delay and rescheduling of exams because of lockdown in many states, and also because of the intrinsic psychological fear associated with tests and examinations.

Table 3. Psychological state of DE learners

Item No.	Item description	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
1.	Since I am studying through distance education, I did not experience any interruption in my studies because of the pandemic.	18	31.6	22	38.6	6	10.5	8	14	3	5.3
2.	Due to lockdown, I experienced a feeling of isolation and was worried about being cut off from my	4	7	17	29.8	6	10.5	21	36.8	9	15.8

	teachers, study centre and other learners.										
3.	I did not feel any discomfort due to increased use of online technology (internet and the world wide web) in distance education during the pandemic.	21	36.8	26	45.6	6	10.5	4	7	0	0
4.	The flexibilities of the distance education system made me feel confident of completing my programme, even in crisis time.	36	63.2	19	33.3	0	0	2	3.5	0	0
5.	I experienced anxiety and stress due to rescheduling of examinations and the requirement of physical appearance at the examination centre	9	15.8	14	24.6	14	24.6	15	26.3	5	8.8

Teaching-Learning Transaction of DE during the Pandemic

In the developing countries, print is the master medium in ODL system, with learners being provided printed self-learning materials (SLMs) while technology playing a supplementary role. The learners may avail facilities of audio-visual resources like TV and radio channels, audio and tele-counselling, along with a F2F component of academic counselling in the study centers. Academic counsellors from other HEIs are engaged for teaching-learning through F2F methods as well as for evaluation of assignments and practical work. The pandemic however led to closure of study centers and all F2F teaching-learning activities. Jena (2020) notes that IGNOU then put in place a dedicated online learning website to cater to the learning needs of learners with links to three important online resources like Education Broadcast, Virtual Class and eGyanKosh, and an iGRAM portal for actively resolving the queries of learners during this pandemic. In the case of MADE, a small enrolment program, the onus of providing academic support services to its learners was taken up by the teachers of STRIDE, IGNOU, who started offering direct single window services to the learners. These interventions included OAC, evaluation of scanned assignments, formation of WhatsApp groups, dedicated email services, telephonic contact, digital copies of course materials, and other such activities.

The findings of this study suggest that a majority of the learners (63.1%) found the digital course material as helpful as the printed course material. These findings are important in context of the pandemic as printed SLMs could not be dispatched to learners via post due to sudden lockdown and therefore sending the soft copies via email to all the learners proved useful. However, Ross et al. (2017) suggest that there is a need for HEIs to train both their staff and students in how to approach digital texts in order to achieve the best learning outcomes because any disparity in learning outcomes between e-text and printed texts is likely to be minimized. It is also impressive that 93% of the learners agreed that online academic counselling helped them to interact and enrich their learning. Similar findings were obtained by Dimri (2021) as majority of the learners were found satisfied with the input provided while organizing online counselling sessions during COVID-19 lockdown in India.

A massive 98.3% of the respondents benefitted from teacher-led social groups, like WhatsApp group, for collaborative learning and interaction amongst the learners. An almost equal number of participants, about 96.5%, agreed that the use of social and digital media helped them in connecting with the teachers and the learners. The importance of digital media other than online technology was reinforced by the responses of the learners as 66.7% agreed that educational services like tele-conferencing, Swayam Prabha and Gyan darshan TV channels, and Gyan Vani FM radio channel run by IGNOU helped them to connect even when fast internet was not available at their locations.

Among learners of MADE program, 86% did not find any difficulty in online submission of assignments. About 7% of the learners hailing from remote areas with poor network connectivity found it difficult to submit their assignments online. The remaining 7% neither found it easy nor difficult. These finding suggest that the pandemic led to a shift towards greater online usage in the distance education mode just like in the F2F. In Arribathi et al.'s (2021) study too, the non-regular students responded affirmatively at 2.41% higher rate as compared to regular students when asked if they liked the switch from face-to-face to online learning that happened due to the COVID-19. These online measures, like online counselling sessions and online assignment submission, were welcomed by the learners as is clear from their responses in this study. These findings reverberate with Panda and Mishra (2007), according to whom, IGNOU being a technology leader in education, and also the largest open university in the world, must progress in the direction of virtualization and provide access to its huge academic resources to clients/learners across the globe.

Table 4. Teaching-learning in DE during the pandemic

Item No.	Item description	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
1.	I found online digital course materials to be as helpful as printed course materials.	19	33.3	17	29.8	8	14	10	17.5	3	5.3
2.	The online academic counselling helped me to interact with teachers and learners and enriched my learning.	29	50.9	24	42.1	2	3.5	2	3.5	0	0
3.	I benefited by being a part of the online learning community (e.g., WhatsApp groups etc.) through which I could interact even when academic counselling sessions were not taking place	31	54.4	25	43.9	1	1.8	0	0	0	0
4.	Use of social media like WhatsApp, Facebook, Twitter, You Tube, dedicated email services and mobile phone calling made it easier for me to connect with teachers and learners.	36	63.2	19	33.3	2	3.5	0	0	0	0
5.	Features like tele-conferencing, Swayam Prabha, Gyan darshan TV channels and Gyan Vani FM radio channel helped me to connect even when fast internet was not available at my home	16	28.1	22	38.6	17	29.8	1	1.8	1	1.8
6.	I did not face any difficulty in online submission of my scanned assignments or project reports on time.	25	43.9	24	42.1	4	7	3	5.3	1	1.8

Learner Support and Autonomy

Distance learning stresses on the need for independent learning and learner autonomy. To facilitate learning, learners are provided with learner support services, feedback on assignments, and academic counselling sessions. In terms of learner support received, 93% of the learners in the sample agreed to receiving support from their distance teachers and responses to their academic queries. On the

component of the utility of assignments, only 8.8% of the respondents agreed that assignment writing did not help for exams against 68.4% who disagreed and 22.8% responded neutrally. Nasir (2020) feels feedback from online learning instructors should be in a timely manner to encourage other students to engage in the conversation. Thus, regular feedback of learning may change perception of DE learners on the utility of assignments. On the aspect of learner autonomy, mixed responses were obtained as 38.6% of the learners showed a preference for F2F counselling sessions after the pandemic in contrast to 33.4% who disagreed and 28.1% who responded as neutral. Whereas 43.8% of the learners did not agree in favor of regular weekend F2F teaching owing to the difficulty level of the course, 35.1% of the learners agreed and 21.1% remained neutral. 36.9% of the learners agreed that teacher-directed F2F education is simpler than studying as a self-learner. An equal number of participants, about 36.8% felt otherwise, and 26.3% were neutral.

In the light of the pandemic, several interesting findings have come up from this study. One, online and digital means have the potential to take away the distance from distance education in an instructor-mediated learning environment. According to Correa et al. (2020) as distance education responds to the disruption caused by the COVID-19 pandemic and videoconferencing systems improve their functionality, it is important not to forget the human agency in this transformation. Prompt responses to queries of the learners, well-planned online academic counselling sessions, clear-cut instructions on assignment submissions, and bringing together the learners of MADE on a single instructor-led platform of WhatsApp group were some of the novel measures adopted by the STRIDE faculty. This indicates that a strong teacher presence increases learner satisfaction with the distance course. Two, a good fraction of the learners depended on handholding by the teachers, as done in the F2F mode. However, most of those learners who have family and work responsibilities show a tendency towards independent learning. According to Hockings (2017) clearer guidance, clearer tasks and in-course support may be crucial for enhancing independent learning. Three, many students responded in neutral towards new changes brought in distance education in the pandemic. This may be accounted to technical or geographical constraints which limit their exposure to such changes.

Table 5. Learner support and autonomy

Item No.	**Item description**	**Strongly Agree**		**Agree**		**Neutral**		**Disagree**		**Strongly Disagree**	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
1.	I received support from distance teachers in form of academic counselling and response to my academic queries.	35	61.4	18	31.6	2	3.5	2	3.5	0	0
2.	After the pandemic gets over, I would prefer to attend face-to-face classes at study centres instead of online counselling.	7	12.3	15	26.3	16	28.1	18	31.6	1	1.8
3.	The component of assignment writing should be removed as it did not help me to prepare for the examination.	2	3.5	3	5.3	13	22.8	26	45.6	13	22.8
4.	The difficulty level of the course materials is high so there should be regular weekend teaching in face-to-face mode for all the courses at the study centres.	7	12.3	13	22.8	12	21.1	19	33.3	6	10.5
5.	I found learning through teacher-directed face-to-face education simpler than	5	8.8	16	28.1	15	26.3	15	26.3	6	10.5

	studying as a self-learner in distance education system.										

Role of Technology during the Pandemic

The pandemic times of social distancing witnessed increased usage of technology in almost all spheres of life. The findings of this study corroborate this as 89.5% of the learners experienced increased usage of technology for their studies. But technology isn't cheap, 50.8% of the learners had to spend more money to buy data packs and/or appropriated digital devices for their online studies. The dominant print media went to the backburner due to lockdown regulations and learners got more exposure to digital technologies for learning. It was found that about half of the learners (52.6%) preferred learning through MOOCS and online platforms in comparison to other means like radio, television, tele-counselling, etc. This depicts an increased shift in preference for online technologies. This is further reinforced by the finding that 94.7% of the respondents showed preference to use online technology even after the pandemic gets over. On the item regarding online/remotely, automatically proctored examination, 50.9% learners were in the favor of online proctored exams as compared to 29.8% who disagreed, and 19.3% were neutral. Our findings are in agreement with Hussein et al. (2020) who feels unlike a live examination, online proctoring requires students to have access to suitable technological infrastructure, without which the option will not work reliably, so it ought not to be promoted as the only solution and should be adopted and used carefully and selectively in contexts and situations where it is the best solution. The findings indicates that online technology in teaching and learning will not only continue to be used but also increase after the pandemic. However, Mbati and Minnaar (2015) strongly suggested that the introduction of online learning at universities requires careful pedagogical consideration.

Table 6. Role of technology in the pandemic

Item No.	**Item description**	**Strongly Agree**		**Agree**		**Neutral**		**Disagree**		**Strongly Disagree**	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
1.	I learned to use more digital and online technology tools for my studies due to lockdown	29	50.9	22	38.6	6	10.5	0	0	0	0
2.	I had to spend more money to buy data packs and appropriate phone/tools so that I could pursue my online studies.	8	14	21	36.8	7	12.3	19	33.3	2	3.5
3.	I prefer learning through MOOCs and online learning platforms like SWAYAM than through other distance education technologies like radio/television/tele-counselling etc.	9	15.8	21	36.8	22	38.6	4	7	1	1.8
4.	I would like to use online technology in distance education even after the pandemic is over.	30	52.6	24	42.1	2	3.5	0	0	1	1.8
5.	I would prefer the option of online or automated proctored examination rather than physical examination.	17	29.8	12	21.1	11	19.3	15	26.3	2	3.5

Responses of Participants to Open-ended Questions

There were four open-ended questions on each of the dimensions – learners' psychological state, teaching-learning transaction, learner support and autonomy, and role of technology in distance education. Some of the responses to each of these questions are presented as follows –

a. Experience of learning through online tools

Many learners supported the use of synchronous online tools for immediate doubt resolution in real-time, interactivity, and a F2F-like experience. But they also pointed towards the issues of the synchronous mode like low internet availability making it difficult to use by many, higher consumption of internet data (hence more costly), and the pace of study was not as per the learner but according to the instructor. Asynchronous tools were found more valuable for distance learning by most of the learners as these align well with anytime, anywhere, self-paced learning. This supports the findings of Curtis (2020) who feels synchronous technology will no longer be a signal, a savior, or something that must be survived but it will be a key component of a brave new world of teaching and learning across all educational sectors and generations. However, the findings of the present study are in contrast to the study done by Saidi et al. (2020) on preferred learning methods (of F2F higher education students for online learning during the pandemic) as a majority of the students preferred synchronous (46%) rather than asynchronous (30%). Some of the responses are mentioned below:

"I found asynchronous studies more helpful as it was self-paced and had hardly any technological barriers."

"*Synchronous tools are more beneficial because it helps us clear our doubt in real-time. It makes the environment lively. It also makes the learner active during teaching and learning. But asynchronous tools are beneficial when there is internet or electricity disruption."*

"It was a great experience to interact with the distance teachers through online tools (both synchronous and asynchronous) because we can clear our doubts very easily and get the required information in no time. Previously, I had to check the website from time to time to know about the notifications but now I get all related information through our WhatsApp group which was very useful for me."

b. Suggestions for improving teaching-learning in distance education

The major suggestions which appeared after collating all the responses are – increasing stress on technological skills of DE teachers and learners, option of online examinations using webcams, dedicated online assignment submission portal for writing and submitting while online without the need of uploading scanned assignments, implementation of blended learning model in ODL such that F2F component may also be accessed online, provision for 'on demand exams' and certificate of completion for each course under the program, providing a regular schedule for radio and TV broadcasts of Gyan Vani, Gyan Darshan, Gyan Dhara, etc. to the students through mail or SMS, program wise mobile apps to be developed for the convenience of the learners, the conduct of webinars for doubts at regular intervals, provision of recorded lecture videos, etc. Some of the responses are highlighted below:

"*I prefer a more digitized study material and learning platform."*

"*Regulated Portals which enable e-Examinations to monitor student activity via webcams while taking exams to prevent misuse.'*

"*Voice-based searches in voice-based applications for differently-abled students allowing them to scan /study without interacting physically with laptops*."

"*Both the teachers and the learners must be well equipped with technological skills because the future will be about advanced technological learning*."

"*The learner should also be given training on synchronous and asynchronous tools."*

c. Role of the distance teacher and their professional development
The responses received from learners suggested teachers will need to undergo an extensive up-gradation of their knowledge and skills for keeping pace with the sudden demands posed on DE because of the pandemic. The importance of CPD of distance teachers to become a true facilitator of learning while simultaneously using technology is more urgent and inevitable now. As ODL co-evolves with technology, the distance teacher will have to perform multiple roles like designing and managing media, incorporating interactivity and pedagogy in online courses, conducting webinars and online counselling sessions, enhancing collaboration and co-operative learning among learners, and having their own YouTube channels. The verbatim responses of some of the learners were as follows:

"*The new generation of teachers would have to be proficient with not just prevalent but also emerging technologies*."

"S/*he must be a media manager, able to manipulate the curriculum according to the new technology, well acquainted with all type of classrooms*."

"*Distance teachers need to achieve certain skills like using the Internet for education, making PowerPoint presentations, organizing online classes, checking assignments online, developing e-books for students, etc*."

"*Authorities/organizations should shoulder the responsibilities of upgrading teachers for more professional and technology-oriented educational deliveries."*

"After the pandemic, I feel distance educators are more in touch with learners than before because of technology. And this really help learners."

"The role of distance teachers is sure to increase. Now they need to be more techno-savvy and friendly to use technology-mediated services frequently to guide the learners."

d. Suggestions for better learning support
According to Rizvi and Nabi (2021) while the benefits of virtual learning are many, India's vast digital, gender, and class divide mean these benefits can only accrue to those who have access to technology, to those who can adapt to them, and to those who can afford them. There was a unanimous consensus among the learners regarding technology acting as a barrier for those who are devoid of the affordances of technology. Still, the majority of them preferred and strongly advocated for online means of learning. In response to this item, several interesting recommendations came from the DE learners. The learners stressed strengthening the already existing multimedia tools in the DE system and also making learners aware of the schedule of such broadcast or transmission. Besides, the development of asynchronous tools, remodeling study centers into fully Wi-Fi zones equipped for digital and online learning, opening institutional libraries, and developing existing public libraries as technology-enabled spaces for learners were some of the implementable suggestions. Recorded video lectures were also recommended by many which align with the recommendations of Muhammed (2020) for improving online learning like recording lectures and then sharing with the students. Learners also advocated for equity in internet access and good connectivity in all places alike. They also suggested subsidized digital devices for students who could not afford them. Some also insisted on students creating self-help groups for finding solutions to their learning-related problems. Few responses are given below:

"As a big percentage of DE students come from rural areas, *the government should focus especially on free internet facilities and on providing equipment to students on subsidies."*

"More of those tools be used which are easily accessible in remote areas like TV medium, radio media, interactive radio counselling, TV teleconference, and other media which does not require internet."

"*For better learning support, if sub-study centers and regional centers are set up in the vicinity of the remote areas with good network connectivity, students will be benefited."*

"*Community information centers and all village panchayat library may be equipped with high internet speed and digital devices for supporting student learning*."

Conclusion and Suggestions

The present study revolved around the pandemic experiences of DE learners. The researchers adopted a mixed-method approach with a convergent parallel research design to understand and interpret the challenges and opportunities for DE in the coming times, especially in the light of the pandemic. The study led to findings substantive to the advancement of DE in the country. The study found DE as quite resilient against the odds as the learners exhibited greater adaptability with the changes brought by the pandemic. The DE learners also experienced increased exposure to teachers and fellow learners mainly facilitated by the enhanced use of online tools and technology. They availed themselves of OAC sessions and found them advantageous over the physical counselling (held at the study centers) as they felt more connected to the teachers, peers, and the content. The learners also benefitted from the formation of an online learning community and social groups which continued to survive even after the OAC sessions were not taking place. Though the study centers and regional centers were shut down during the lockdown, online and digital means of ODL could, to a large extent, support uninterrupted studies of DE learners. It came out clearly from the study that the multimodal delivery of DE made it possible for the teachers and learners to cope with the challenges of the pandemic. The study also established that the use of online learning tools and technologies will only increase in the future and hence the need for teachers and learners to equip with it. The findings lead to significant implications for enhancing the capacity of DE to act as a forerunner of overall reform in the education system. Some of these suggestions are – providing learners with a variety of means to access learning apart from moving toward a blended model of learning, instilling independent learning skills and digital literacy among the learners through orientations and workshops, placing increased emphasis on CPD of DE teachers for better engagement with learners, formation of online/digital learning communities using social media, turning study centers into technology-enabled learning spaces, greater reliance on asynchronous tools for learning along with continuance of OAC even after the pandemic, availability of multiple options of examination including remotely or automated proctored online examinations. As Green et al. (2020) lay emphasis on critically evaluating the transformative possibilities brought about by the COVID-19 in the higher education sector, the present study reinforces the need to reimagine the sector as a more resilient, humanistic, and transformative model. The measures introduced in the DE program in the times of the pandemic and the suggestions provided by the participants in this study have important implications to bring a desirable change in the overall delivery of DE in the country. Nevertheless, the findings of this study pertain to just one DE program with a relatively smaller learner enrolment, which may not fully represent the overall picture of DE system during the pandemic. More such research studies covering different DE programs and DEIs may be done in the future to further understand the dynamics of DE operating at the level of the learners and practical difficulties faced by them during such unprecedented crisis.

Acknowledgments

The researchers gratefully acknowledge the time taken out by the learners of the MADE program of STRIDE, IGNOU to provide their valuable suggestions for this study as well as the Director and faculty of STRIDE who supported innovative learning methods during the pandemic.

Compliance with ethical standards

The authors declare that there is no conflict of interest and the study is done in compliance with the ethical standards of research.

References

Altinpulluk, H. (2021). Determination of preschool teacher candidates' views on the learning management system used in the covid-19 pandemic process. In A. Bozkurt (Eds.), *Handbook of Research on Emerging Pedagogies for the Future of Education: Trauma-Informed, Care, and Pandemic Pedagogy* (pp. 209-229). IGI Global. http://doi:10.4018/978-1-7998-7275-7.ch011

Ando, A. (2021). University teaching and learning in a time of social distancing: a sociocultural perspective. *Journal of Human Behavior in the Social Environment*, *31*(1-4), 435-448. https://doi.org/10.1080/10911359.2020.1814928

Arusha, A., R., & Biswas, R., K. (2020). Prevalence of stress, anxiety and depression due to examination in Bangladeshi youths: A pilot study. *Children and Youth Services Review*, *116*. https://doi.org/10.1016/j.childyouth.2020.105254.

Arribathi, A. H., Suwarto, Rosyad, A. M., Budiarto, M., Supriyanti, D., & Mulyati. (2021). An analysis of student learning anxiety during the covid-19 pandemic: a study in higher education. *The Journal of Continuing Higher Education*. https://doi.org/10.1080/07377363.2020.1847971

Bao, W. (2020). COVID-19 and online teaching in higher education: a case study of Peking University. *Human Behavior and Emerging Technologies, 2*(2), 113-115. https://doi.org/10.1002/hbe2.191

Bhaumik, R., & Priyadarshini, A. (2020). E-readiness of senior secondary school learners to online learning transition amid Covid-19 lockdown. *Asian Journal of Distance Education*, *15*(1), 244-256. https://doi.org/10.5281/zenodo.3891822

Bozkurt, A. (2019). From distance education to open and distance learning: a holistic evaluation of history, definitions, and theories. In S. Sisman-Ugur, & G. Kurubacak (Eds.), *Handbook of Research on Learning in the Age of Transhumanism*, 252-273. IGI Global. https://doi.org/10.4018/978-1-5225-8431-5.ch016

Bozkurt, A. (2020). Educational technology research patterns in the realm of the digital knowledge age. *Journal of Interactive Media in Education*, 2020(1): 18, 1–17. https://doi.org/10.5334/jime.570

Bozkurt, A., & Sharma, R. C. (2021). On the verge of a new renaissance: care and empathy oriented, human-centred pandemic pedagogy. *Asian Journal of Distance Education*, *16*(1), i-vii. https://doi.org/10.5281/zenodo.5070496

Çakiroğlu, Ü., Kokoç, M., Gökoğlu, S., Öztürk, M., & Erdoğdu, F. (2019). An analysis of the journey of open and distance education: major concepts and cutoff points in research trends. *The International Review of Research in Open and Distributed Learning*, *20*(1). https://doi.org/10.19173/irrodl.v20i1.3743

Camacho, D. J., & Legare, J. M. (2021). Pivoting to Online Learning — The future of learning and work. *The Journal of Competency-Based Education, 6*(1)*.* https://doi.org/10.1002/cbe2.1239

Carrillo, C., & Flores, M. A. (2020). COVID-19 and teacher education: a literature review of online teaching and learning practices. *European Journal of Teacher Education*, *43*(4), 466-487. https://doi.org/10.1080/02619768.2020.1821184

Cicha, K., Rizun, M., Rutecka, P., & Strzelecki, A. (2021). COVID-19 and higher education: first-year students' expectations toward distance learning. *Sustainability*, *13*(4), 1889. MDPI AG. http://dx.doi.org/10.3390/su13041889

Creswell, J. W. (2004). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research.* Pearson.

Dimri, A.K. (2021). E-counselling support during covid-19 pandemic: analysis of learners' feedback. *Asian Association of Open Universities Journal*, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/AAOUJ-10-2020-0084

Fayyaz, F., & Muhammad, N. (2020). Evaluation and improvement of students' satisfaction in online learning during covid-19. *Open Praxis*, *12*(4), 495-507. http://dx.doi.org/10.5944/openpraxis.12.4.1153

Government of India. (2020). All India Survey on Higher Education (AISHE), 2019-2020, *Ministry of Education*, New Delhi, retrieved from https://files.instapdf.in/wp-content/uploads/pdf-thumbnails/2021/06/all-india-survey-on-higher-education-2019-20-197.webp

Government of India. (2020). Preventive Measures to Achieve 'Social Distancing' - Permission to Teaching and Non-teaching Staff to Work from Home. *D.O.No.Secy (HE)/MHRD/2020*. retrieved from https://web.iiitbhopal.ac.in/Document/Covid19/Corona_210320.pdf

Green, W., Anderson, V., Tait, K., & Tran, L. T. (2020). Precarity, fear and hope: reflecting and imagining in higher education during a global pandemic. *Higher Education Research and Development, 39*(7), 1309-1312. https://doi.org/10.1080/07294360.2020.1826029

Händel, M., Stephan, M., Gläser-Zikuda, M., Kopp, B., Bedenlier, S., & Ziegler, A. (2020). Digital readiness and its effects on higher education students' socio-emotional perceptions in the context of the Covid-19 pandemic. *Journal of Research on Technology in Education*. https://doi.org/10.1080/15391523.2020.1846147

Hockings, C., Thomas, L., Ottaway, J., & Jones, R. (2018). Independent learning – what we do when you're not there. *Teaching in Higher Education*, *23*(2), 145-161. https://doi.org/10.1080/13562517.2017.1332031

Hockridge, D. (2013). Challenges for educators using distance and online education to prepare students for relational professions. *Distance Education*, *34*(2), 142-160. https://doi.org/10.1080/01587919.2013.793640

Houlden, S., & Veletsianos, G. (2021). The problem with flexible learning: neoliberalism, freedom, and learner subjectivities. *Learning, Media and Technology*, *46*(2), 144-155. https://doi.org/10.1080/17439884.2020.1833920

Hussein, M., Yusuf, J., Deb, A., Fong, L., & Naidu, S. (2020). An evaluation of online proctoring tools. *Open Praxis, 12*(4), 509-525. http://dx.doi.org/10.5944/openpraxis.12.4.1113

Jena, P. K. (2020). Challenges and opportunities created by covid-19 for odl: a case study of IGNOU. *International Journal for Innovative Research in Multidisciplinary Field*, *6* (5), 217-222. https://ssrn.com/abstract=3691525

Jili, N. N., Ede, C. I., & Masuku, M. M. (2021). Emergency remote teaching in higher education during Covid-19: challenges and opportunities. *International Journal of Higher Education*, *10*(5). https://doi.org/10.5430/ijhe.v10n5p1

Malandrino, A., & Sager, F. (2021). Can teachers' discretion enhance the role of professionalism in times of crisis? A comparative policy analysis of distance teaching in Italy and Switzerland during the Covid-19 pandemic. *Journal of Comparative Policy Analysis: Research and Practice*, *23*(1), 74-84. https://doi.org/10.1080/13876988.2020.1844544

Mbati, L., & Minnaar, A. (2015). Guidelines towards the facilitation of interactive online learning programmes in higher education. *International Review of Research in Open and Distributed Learning*, *16*(2), 272–287. https://doi.org/10.19173/irrodl.v16i2.2019

Moore, M. G. (1973). Toward a theory of independent learning and teaching. *The Journal of Higher Education*, *44*(9), 661-6https://doi.org/10.1080/00221546.1973.11776906

Naidu, S. (2020). It is the worst—and the best—of times! *Distance Education*, *41*(4), 425-428. https://doi.org/10.1080/01587919.2020.1825929

Nasir, M. K. M. (2020). The influence of social presence on students' satisfaction toward online course. *Open Praxis*, *12*(4), 485–493. http://dx.doi.org/10.5944/openpraxis.12.4.1141

Panda, S., Mishra, S. (2007). E-learning in a mega open university: faculty attitude, barriers and motivators. *Educational Media International*, *44*(4), 323-338. https://doi.org/10.1080/09523980701680854

Parthasarathy, S., & Murugesan, S. (2020). Overnight transformation to online education due to the covid-19 pandemic: Lessons learned. *eLearn Magazine*. https://doi.org/10.1145/3424971.3421471

Quintiliani, L., Sisto, A., Vicinanza, F., Curcio, G., & Tambone, V. (2021). Resilience and psychological impact on Italian university students during Covid-19 pandemic. *Distance learning and health, Psychology, Health & Medicine*. https://doi.org/10.1080/13548506.2021.1891266

Rizvi, Y.S., & Nabi, A. (2021). Transformation of learning from real to virtual: an exploratory-descriptive analysis of issues and challenges. *Journal of Research in Innovative Teaching & Learning*, *14*(1), 5-17. https://doi.org/10.1108/JRIT-10-2020-0052

Saidi, R. M., Sharip, A. A., Rahim, N. Z. A., Zulkifli, Z. A., & Zain, S. M. M. (2021). Evaluating students' preferences of open and distance learning (odl) tools. *Procedia Computer Science*, *179*, 955–961. https://doi.org/10.1016/j.procs.2021.01.085

Sari, T., & Nayır, F. (2020). Challenges in distance education during the (Covid-19) pandemic period. *Qualitative Research in Education, 9*(3), 328-360. http://dx.doi.org/10.17583/qre.2020.5872

Schultz, R. B., & DeMers, M. N. (2020). Transitioning from emergency remote learning to deep online learning experiences in geography education. *Journal of Geography*, *119*(5), 142-146. https://doi.org/10.1080/00221341.2020.1813791

Sharma, R. (2001). Online delivery of programmes: A case study of IGNOU. *The International Review of Research in Open and Distributed Learning*, *1*(2). https://doi.org/10.19173/irrodl.v1i2.18

Tsai, C. L., Cho, M. H., Marra, R., & Shen, D. (2020). The self-efficacy questionnaire for online learning (SeQoL). *Distance Education*, *41*(4), 472-489. https://doi.org/10.1080/01587919.2020.1821604

Waterhouse, P., Samra, R., & Lucassen, M. (2020). Mental distress and its relationship to distance education students' work and family roles. *Distance Education*, *41*(4), 540-558. https://doi.org/10.1080/01587919.2020.1821606

Zawacki-Richter, O., Conrad, D., Bozkurt, A., Aydin, C. H., Bedenlier, S., Jung, I., Stöter, J., Veletsianos, G., Blaschke, L. M., Bond, M., Broens, A., Bruhn, E., Dolch, C., Kalz, M., Kerres, M., Kondakci, Y., Marin, V., Mayrberger, K., Müskens, W., Naidu, S., Qayyum, A., Roberts, J., Sangrà, A., Loglo, F. S., Slagter van Tryon, P. J., & Xiao, J. (2020). elements of open education: an invitation to future research. *The International Review of Research in Open and Distributed Learning*, *21*(3), 319-334. https://doi.org/10.19173/irrodl.v21i3.4659

About the Author(s)

- Rikisha Bhaumik; (Corresponding Author); hrikisha7@gmail.com; Indira Gandhi National Open University (IGNOU), India; https://orcid.org/0000-0002-3261-4889
- Anita Priyadarshini; anitapriyadarshini@ignou.ac.in; Indira Gandhi National Open University (IGNOU), India; https://orcid.org/0000-0003-3161-4171

Suggested citation:

Bhaumik, R., & Priyadarshini, A. (2021). Pandemic experiences of distance education learners: Inherent resilience and implications. *Asian Journal of Distance Education, 16*(2), 18-37. https://doi.org/10.5281/zenodo.5628507