



COMMONWEALTH *of* LEARNING



# Status of Distance Learning in India



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# Contents

<b>Foreword .....</b>	<b>vi</b>
<b>Executive Summary .....</b>	<b>1</b>
<b>Section 1: Background.....</b>	<b>6</b>
The Status of Higher Education in India .....	6
National Education Policy 2020.....	10
Research Objectives .....	13
Review of the Literature and Research .....	13
Cost-Effectiveness Framework .....	14
Conceptual Framework for the Study .....	15
<b>Section 2: The Status of ODL in India .....</b>	<b>20</b>
Access.....	23
Equity.....	25
Cost-Effectiveness.....	30
Quality.....	34
Conclusion .....	38
<b>Section 3: The Covid-19 Response and Innovations .....</b>	<b>41</b>
Covid-19 and Conventional Higher Education.....	41
Covid-19 and ODL.....	43
<b>Section 4: The Way Forward .....</b>	<b>46</b>
Integrating Employability into the Curriculum .....	47
Rethinking Assessments .....	51
Micro-credentials and Lifelong Learning .....	54
Digitalisation of the Sector (Infrastructure, Connectivity, Content, TEL) .....	55
Targeting Women and Persons with Disabilities .....	58
<b>References .....</b>	<b>61</b>
<b>Appendix: Questionnaire .....</b>	<b>66</b>

# Figures

Figure 1. The relationships between cost, access and quality. ....	15
Figure 2. Extension of the triangle's sides. ....	16
Figure 3. Conceptual framework of the study. ....	17
Figure 4. Institutional structure of VET.....	48
Figure 5. Major institutional players in skilling in higher education. ....	48
Figure 6. Teaching–learning requirements for skilling/VET. ....	50

# Tables

Table 1. Types and number of higher education institutions, 2014–2020 .....	7
Table 2. Gross enrolment ratio, 2020.....	8
Table 3. Faculty-wise enrolment, 2020 .....	8
Table 4. Enrolment: social status, 2020 .....	8
Table 5. Enrolment (conventional and distance) .....	23
Table 6. Programme-wise and gender-wise enrolment in ODL, 2020.....	24
Table 7. Enrolment and pass trends (selected DEIs).....	24
Table 8. Profile of distance learners enrolled at SOUs .....	26
Table 9. Equity in enrolment: IGNOU .....	28
Table 10. Gender distribution, 2020–21 (selected DEIs) .....	29
Table 11. Geographical distribution, 2020–21 (selected DEIs).....	29
Table 13. Sources of income of selected Indian OUs, 2020 (in INR) .....	31
Table 14. Trend of expenditure for select Indian OUs, 2021 (in INR) .....	32
Table 15. Cost of education and fee per student in select Indian OUs, 2021 (in INR) .....	33
Table 16. Cost per graduate/Cost efficiency, 2020 (in INR).....	34
Table 17. Institutions' responses on curriculum and instructional design.....	36
Table 18. Institutions' responses on the use of media resources, training and research .....	36

# List of Abbreviations

AAOU	Asian Association of Open Universities
AICTE	All India Council for Technical Education
AMU	Aligarh Muslim University
BAOU	Babasaheb Ambedkar Open University
BCE	before the Common Era
BOLD	blended online learning design
BRAOU	Dr B. R. Ambedkar Open University (formerly Andhra Pradesh Open University)
CBCS	choice-based credit system
CBE	closed-book examination
CE	Common Era
CEC	Consortium for Educational Communication
CEMCA	Commonwealth Educational Media Centre for Asia
CEO	chief executive officer
CODE	Centre for Open and Distance Education
COL	Commonwealth of Learning
DDE	Directorate/Department of Distance Education
DE	distance education
DEI	distance education institute
DIKSHA	Digital Infrastructure for Knowledge Sharing
DTH	direct-to-home
DU	University of Delhi
ECCE	early childhood care and education
EduSat	educational satellite
ERP	enterprise resource planning
e-SLM	electronic/digital self-learning material
F2F	face-to-face
GER	gross enrolment ratio
GPA	grade point average
HEI	higher education institution
HEPSN	higher education for persons with special needs
IBEF	Indian Brand Equity Foundation
ICDE	International Council for Open and Distance Education
ICT	information and communication technologies
IDP	institutional development plan
IIM	Indian Institute of Management

IIMB	Indian Institute of Management – Bangalore
IIT	Indian Institute of Technology
ITI	industrial training institute
HEFA	higher education funding agency
HQ	headquarters
IGNOU	Indira Gandhi National Open University
iGRAM	IGNOU Grievance Redressal and Management
IISc	Indian Institute of Science
IIT	Indian Institute of Technology
INFLIBNET	Information and Library Network
KKHSOU	Krishna Kanta Handique State Open University
KSOU	Karnataka State Open University
LMS	learning management system
LSC	learner support centre
MCQ	multiple-choice question
MOE	Ministry of Education
MOOC	massive open online course
MoSDE	Ministry of Skill Development and Entrepreneurship
MPBOU	Madhya Pradesh Bhoj (Open) University
MTNU	Mother Teresa Women’s University
NAAC	National Assessment and Accreditation Council
NCERT	National Council for Educational Research and Training
NEP-2020	National Education Policy 2020
NHEQF	National Higher Education Qualifications Framework
NIOS	National Institute of Open Schooling
NITTTR	National Institute of Technical Teachers’ Training and Research
NOU	Nalanda Open University
NPTEL	National Platform for Technology Enabled Learning
NROER	National Repository of Open Educational Resources
NSOU	Netaji Subhash Open University
NSQF	National Skills Qualification Framework
OBC	Other Backward Class
OBE	open-book examination
ODL	open and distance learning
OER	open educational resources
OLL	online learning
OMKAR	Open Matrix Knowledge Advancement Resource Repository
OU	open university

PAN	Pan-Africa e-Network
PBL	project-based learning
PG	post-graduate
PIB	Press Information Bureau (Government of India)
PSSOU	Pandit Sundarlal Sharma (Open) University
PWD	persons with disabilities
RC	regional centre
RPL	recognition of prior learning
SAMVAY	Skill Assessment Matrix for Vocational Advancement of Youth
SC	Scheduled Caste
SHG	self-help group
SLM	self-learning material
SNDT	Shreemati Nathibai Thackersey Women's University
SOS	state open school
SOU	state open university
SSC	Sector Skills Council
ST	Scheduled Tribe
SWAYAM	Study Webs of Active-Learning for Young Aspiring Minds
SWOC	strengths, weaknesses, opportunities, challenges
TEE	term-end examination
TEL	technology-enabled learning
TNOU	Tamil Nadu Open University
UG	undergraduate
UGC	University Grants Commission
UOU	Uttarakhand Open University
UPRTOU	Uttar Pradesh Rajarshi Tandon Open University
VET	vocational education and training
VMOU	Vardhman Mahavir Open University
WEAS	web-enabled academic support
YCMOU	Yashwantrao Chavan Maharashtra Open University

# Foreword

Covid-19 caused the closure of campuses, affecting more than 220 million higher education students worldwide. Most institutions had to pivot to emergency remote teaching. Many did not have adequate technology infrastructure. A study has revealed that even in the US and Canada, over 50% of teachers required help with supporting remote students, needed access to digital materials and wanted assistance with technology. Students also suffered in various ways — and half of them felt that their performance had declined. Many faced challenges relating to technology tools and connectivity, and most felt a negative impact on their psychological well-being. The vulnerable are most affected in crisis situations, and existing inequalities were further exacerbated. The pandemic has further deepened the learning crisis.

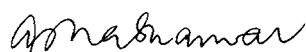
All of the above highlight the need for alternative and innovative ways of providing access and equity in higher education. The pandemic has forced the global community to embrace distance learning and online delivery. Historically, open distance learning (ODL) was adopted to address issues of access, using a range of technologies, including print, radio and TV. Countries that already had ODL systems in place were better able to respond to institutional closures during lockdown by providing existing distance learning materials and systematic learning support. COL's experience shows that ODL and technologies can be leveraged to increase access to quality education, skills development and lifelong learning at lower costs.

India has a robust ecosystem of distance learning, with 19 open universities, hundreds of dual-mode providers, a network of open schools, and government-supported digital platforms for professional development. *Status of Distance Learning in India* reviews current policy and practice in relation to issues of access, equity, quality and costs. This was done using a survey of ODL institutions, data from different institutions, and available studies conducted by COL. The report identifies innovations and best practices that institutions adopted as a response to the Covid-19 crisis. The objective of this report is to provide recommendations and concrete actions to enable policy makers and distance education leaders to transform the sector for national development.

In a post-pandemic world, where resources may be limited, the demand for distance and technology-enabled learning will continue. COL will provide support to develop enabling ODL policies, stronger systems, and enhanced human resource capacity for formal, non-formal and informal learning. The role of COL as an intergovernmental organisation established to promote distance education and technologies has become more important than ever before, and it will continue to invest in innovations to leave no one behind.

The importance of distance learning has become apparent to the global community. Distance learning has always been a “disruptive innovation” that can be harnessed to provide lifelong learning for all. As the future of learning is blended, the distinctions between distance and campus learning need to disappear. What matters are the competencies gained rather than the delivery mode. Finally, quality needs to be a priority, with the understanding that there can be no quality without equity and inclusion.

While the report focuses on distance learning in India, it has wider relevance in the Commonwealth and beyond. I hope policy makers and practitioners will benefit from its insights and take full advantage of the recommendations, which can be adopted and adapted to different contexts.



Professor Asha Kanwar  
President and CEO  
Commonwealth of Learning

# Executive Summary

The major objectives of this study were to review the current policy on and status of open and distance learning (ODL) and technology-enabled learning (TEL) in India; address the wider questions of access, equity and quality vis-à-vis ODL; analyse cost-effectiveness in relation to student success and attrition; and make recommendations for how ODL institutions can improve education quality, student learning outcomes and graduate employability.

The Indian higher education (HE) system is the second largest in the world, comprising 1,043 universities, 42,343 colleges, 11,779 stand-alone institutions, 38.53 million students and 1.5 million teachers. Its ancient system of education was one of the best in the world, and the fourth-century BCE Nalanda and Takshashila universities were considered the best seats of higher learning globally, long before the first European universities arose in Bologna (1088 CE) and Oxford (1096 CE). Subsequent British rule in India brought sophistication, critical scientific enquiry and exposure to English civilization, though the British filtration policy in HE accessed by the elites was more to serve the masters than the masses. The post-independence education system expanded rapidly, resulting in a present-day gross enrolment ratio (GER) of about 27% in HE, many commissions on education and national education policies, and the Indian government-approved National Education Policy 2020 (NEP-2020), which suggested significant reforms that included open, distance, online and blended learning. About 65% of students come from disadvantaged sections of society — Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC), Muslim minorities, and women — and nearly 49% of student enrolment comprises women. As Professor Philip Altbach (2017) has noted, only 10% of students study in pockets of excellence, while the rest float in a sea of mediocrity. Nonetheless, this system has contributed Nobel laureates, global leaders, and CEOs for Fortune 500 companies such as Adobe, Alphabet, Google, IBM, Mastercard, Microsoft and Twitter, among others.

In the 21<sup>st</sup> century, especially from 2018 onward, the system of teaching–learning in HE in India has undergone significant changes and reforms in accordance with guidelines from the HE regulator, geared primarily towards:

- outcome-based learning
- a choice-based credit system
- multidisciplinary education
- multiple pathways with multiple entries and exits
- an academic credits bank
- apprenticeships/internships
- TEL through massive open online courses (MOOCs) at the national platform SWAYAM (where 40% of student credits can be obtained towards one's degree)
- standardised quality mandates and assessment
- the internationalisation of HE
- an institutional development plan
- the National Higher Education Qualifications Framework (2022)

- the ODL/Online Learning Regulations (2022)
- the transformation of higher education institutions (HEIs) into multidisciplinary establishments

All of the above were mandated in the National Education Policy 2020.

The conceptual framework for the present study was based on the triangle of Daniel and Marquis (refined by Daniel, Kanwar and Uvalić-Trumbić in 2009) — access, cost and quality — and the “input/process–contributions/effects–cost-effectiveness” formulation of the present study’s researcher. The research methodology involved a mixed-methods approach: policy and document analysis; a survey of ODL institutions (with some data being collected from various ODL institutions’ annual reports, available on their websites); data from a Commonwealth Educational Media Centre for Asia (CEMCA) study of 2016; and related data from the 2021 survey of Commonwealth open universities conducted by the Commonwealth of Learning (COL).

The analysis provided critical appreciation of the growth and development of ODL in HE in India. Starting in 1962 at the University of Delhi, followed by the establishment of the first open university in 1982 in the state of erstwhile Andhra Pradesh, then the Indira Gandhi National Open University (IGNOU) in 1985, there are today 19 open universities (OUs) and about 110 dual-mode university distance education institutes (DEIs), admitting over 4.3 million students — about 12% of the total HE enrolment. Today, IGNOU alone has a cumulative student enrolment of 3.5 million, 14,826 counsellors at 2,340 learning support centres, 381 academic programmes of study comprising 3,923 courses (plus 41 online programmes and 120 MOOCs), and a presence in 26 overseas centres. The ODL system is regulated by the University Grants Commission through its Distance Education Bureau, though IGNOU has been exempted from the UGC’s 2017–18 Regulations on ODL-OLL and has its own ordinance-based regulation to design, develop and deliver ODL and online programmes.

The ODL system has shown significant growth and development, with diversified course offerings and the use of substantial TEL, committed largely to continuing education and lifelong learning, and addressing the concerns of access, equity, inclusivity, quality, and graduate employability. The student enrolment status as of 2013–14 was as follows: women ~42%, rural areas 53.4%, SC 15.8%, ST 9.1% and OBC 34.1%. At IGNOU, the enrolment figures for 2018–19 were: women 45%, rural areas 44%, SC 12%, ST 8% and OBC 19%, with student pass rates varying between 13% and 19%. While issues of access, equity and curricular reforms have been substantially addressed by the ODL institutions, issues relating to “process quality” in terms of theoretical content applied in context, integrated TEL, graduation rates, and graduate employability still remain major areas of concern to be addressed.

Studies and data on cost-effectiveness show that ODL has been largely cost-effective; the cost per student (i.e., unit cost) for ODL is about one fifth that of conventional higher education. For OUs, student fees dominate the sources of income (31–90%), and the pattern of expenditure shows that staff salaries consume 24–99% of the total expenditure, and programme delivery varies between 1% and 76% of the total expenditure. In the case of IGNOU, internal resource generation was 84% (2018–19), with most of the expenses falling under the academic (30%) and establishment (45%) categories. During the Covid-19 period, most of the OUs had surplus in revenue (i.e., they spent more than they generated). In terms of fee collection and expenditures of open universities, Yashwantrao Chavan Maharashtra Open University was the most cost-efficient and Karnataka State Open University was the least.

During the Covid-19 period (2020–21), there have been significant developments in TEL in both conventional and ODL institutions. In the former, innovations include the design of thinking-based curricula, blended learning, and open-book examinations. Among the latter, IGNOU took a variety of innovative TEL steps to address student learning, formative assessment, and term-end examinations. Some state OUs also made innovative use of technology for teaching–learning.

It should be emphasised that the ODL institutions, especially the open universities, have in the past contributed significantly to the following HE reforms (which have also been emphasised for India’s entire HE system in the new National Education Policy 2020): (i) needs-based analysis of curriculum and instructional/ learning design for programmes and courses across disciplines and levels (e.g., certificate, diploma, degree), (ii) provision of programmes and courses in diversified areas of study, combining traditional, niche market, developmental, national human resource development, and continuing professional development programmes, and as well as ones in regional languages (so far, not viable in conventional colleges and universities), (iii) programmes directly addressing the needs of women, local communities, and disadvantaged sections of society, (iv) multidisciplinary programmes with multiple entry–exit options under a definite policy of credit transfer, and (v) the use of multiple media to scale all programmes and courses. These distinct achievements of the ODL system are now being valued and recommended for the entire HE system under the aegis of the NEP-2020.

Based on the present study’s analysis of policies, documents and data, as given in this report, the following recommendations are made to governments and ODL institutions, to put them at the forefront of addressing the crucial issues of access, equity, quality, employability, and cost-effectiveness.

- *Integrate Employability into the Curriculum:* Develop courses (and transform existing courses) in light of all the skilling dimensions and in alignment with the National Skills Qualification Framework:
  - recognition of prior learning
  - multiple entry–exit
  - horizontal and vertical mobility between vocational education and training and general HE
  - adoption of “theory–practicum–internship” as part of each programme design and delivery
- Judiciously combine conceptual understanding with practical applications, and build employability into the curriculum, especially by developing and continuously monitoring the quality of practical and skills training on the ground, which has been the weakest link in the process.
- *Rethink Assessments:* Go beyond the traditional assignment and term-end examination system to employ a variety of discipline/subject-specific assessment strategies (and largely ICT-enabled assessment). Place more emphasis on formative assessment (“assessment for learning”), and build e-portfolios and internships into teaching–learning. Use real-life problem solving, simulations, role plays, project-based learning, and innovative articulations and applications.
- *Micro-credentials and Lifelong Learning:* Develop more competency-based and value-added (social and life skills) micro-credential courses, based on national and regional job markets and the need for upskilling, as well as the global job market and cultural labour mobility. Do this in collaboration with COL Commons, with due consideration to regulators, the National Skills Qualification Framework and the National Higher Education Qualifications Framework.
- *Digitalisation (Infrastructure, Connectivity, Content, TEL):* Introduce a powerful national integrated

learning management system (and related networks) for the design and delivery of blended learning, with due consideration to intensive learner-centric learning design, learner collaboration/engagement in authentic tasks, and authentic formative and summative assessment. Include the required ICT infrastructure and digitisation of content in a National Policy on Blended Learning.

- *Target Women and Persons with Disabilities:* Empower women, disadvantaged populations and persons with disabilities through need-based and job-oriented programmes and courses. Focus specifically on rural and tribal women, and offer courses in regional languages and local dialects. Target sustainable development and agriculture, and keep in view learners' domestic and employment responsibilities for their families' livelihoods.



# Section 1:

## Background

The main purpose of this piece of research is to take stock and examine the progress, status, and institutional responsiveness of open and distance education institutions (i.e., open universities and dual-mode distance education institutes) in India in the current rapidly changing contexts of globalisation, technologisation, diverse and shifting employment, sustainable development, access, equity, inclusiveness, and cost-effectiveness. A short account of the status of higher education (HE) in the country is followed by a brief on the recently promulgated National Education Policy 2020. Subsequent sections present the study's research objectives, a literature review, the conceptual framework for the study, the research methodology, and an analysis of ODL in India, innovations in teaching–learning during the Covid-19 pandemic, and major recommendations.

### The Status of Higher Education in India

As one of the oldest civilizations in the world, India in antiquity had a highly regarded system of education and hosted international scholars. The ancient seats of learning, including universities at Takshashila, Nalanda, Vallabhi, Kanchi and Vikramshila, were at their peak in the pre-Christian era; the famous Nalanda University, which flourished from 427 BCE to 1197 CE, reportedly had up to 10,000 students and 3,000 teachers. Nalanda was famous for all disciplines of learning (including Buddhist and Vedic studies, logic and political science) and had been established far before the first universities in Europe — at Bologna (1088 CE) and Oxford (1096 CE). With the demolition of Nalanda University by Hun and Turk invaders, the quality of education gradually declined, and subsequent British rule through the 18<sup>th</sup> to 20<sup>th</sup> centuries brought sophistication, Western methods of critical inquiry, and exposure to the English and other civilizations, though it has often been commented that the system of education in India based on Thomas Macaulay's filtration plan served the masters more than the people and the nation. Towards the end of British rule and India's independence in 1947, the country already had high-quality intellectuals trained in Britain, who subsequently took up rebuilding an equitable, accessible, quality national system of education. However, the British influence remains quite visible in education structures and processes. In light of this, the National Education Policy 2020 aims to achieve a national and indigenous system, based on Indian culture and values and India's traditional knowledge system.

When India gained independence in 1947, it had 20 universities and 591 colleges with a student enrolment of 2,28,881. The largely missionary colleges were transformed and expanded with the formulation of national five-year plans, and the system expanded by 10% during the 1950s and 1960s. After that, it expanded rapidly in terms of institutions, students, teachers, teaching, research, professional education, extension and community development, adult education and lifelong learning, and subsequently with correspondence education and distance education (DE). Now, India has the second-largest higher education system in the world.

From 2014 to 2020 (Table 1), there has been a substantial increase in the number of universities (712 to 1,043), colleges (36,671 to 42,343), stand-alone institutions (11,445 to 11,779), and student enrolment (30.1 million to 38.53 million). Enrolment in private colleges exceeds 66%. The gross enrolment ratio (GER)

has improved from 19.4% to 27.1% (M: 26.9%, F: 27.8%) (Table 2); for “socially backward” groups, it has increased from 11.35% to 23.4% for scheduled castes (SCs) and from 7.22% to 18% for scheduled tribes (STs). These are significant improvements towards a more inclusive education system. The male/female enrolment ratio stands at 51%/49%, which is an improvement, though the large majority of students (79.5%) study at the undergraduate level, and about 12.6% study science and technology (Table 3). With respect to disadvantaged groups, the percentage enrolment has substantially increased — SC 14.7%, ST 5.6%, OBC 37%, Muslim minority 5.5% and other minorities 2.3% — meaning that over 65% of students come from the disadvantaged sections of Indian society. The NEP-2020 proposes to widen access and achieve greater equality and equity by doubling student enrolment to a GER of 50% (especially drawing in disadvantaged students) by 2035, and by using open distance learning (ODL) and online learning (OLL) institutions and programmes. In addition, World Bank statistics report a GER of 29% for India as of 2020 (World Bank, 2022).

*Table 1. Types and number of higher education institutions, 2014–2020*

Type	Sub-type	Numbers			
		2014	2016	2018	2020
Universities	Central	42	43	43	48
	State public	310	316	329	386
	Deemed	127	122	122	126
	State private	143	181	197	327
	Central open	1	1	1	1
	State open	13	14	14	15
	Inst. of National Importance	68	75	75	135
	Inst. under State Act	5	5	5	5
	Others	3	3	13	-
	<b>Total</b>	<b>712</b>	<b>760</b>	<b>799</b>	<b>1043</b>
<b>Colleges</b>	<b>Total</b>	<b>36,671</b>	<b>38,498</b>	<b>39,071</b>	<b>42,343</b>
Stand-alone Institutions	Diploma (technical)	3,541	3,845	3,867	NA
	PG Dip. Management	392	431	435	NA
	Diploma (nursing)	2,674	3,114	3,060	NA
	Diploma (teacher training)	4,706	4,730	4,403	NA
	Inst. under ministries	132	156	158	NA
	<b>Total</b>	<b>11,445</b>	<b>12,276</b>	<b>11,923</b>	<b>11,779</b>

Note: NA = not available.

Sources: MHRD (2014, 2016, 2018, 2020); MOE (2021).

*Table 2. Gross enrolment ratio, 2020*

Total	Male	Female	SC	ST
27.1%	26.9%	27.8%	23.4%	18%

Source: Government of India (2020).

*Table 3. Faculty-wise enrolment, 2020*

Total	Male	Female	UG	PG	Others	Arts/Hu/SS	Science	Commerce	Sc & Tech
38.5 million	51%	49%	79.5%	11.5%	9.3%	32.7%	16%	14.9%	12.6%

Source: Government of India (2020).

*Table 4. Enrolment: social status, 2020*

SC	ST	OBC	Muslim	Other Minority
14.7%	5.6%	37%	5.5%	2.3%

Source: Government of India (2020).

There have been tremendous developments in curricular diversity, pedagogic reforms (though by a smaller number of institutions), technological developments, and the use of national platforms, and there was substantial technology use during Covid-19 pandemic. The system has also responded appropriately to global developments in teaching, research and extension, as well as cross-border educational delivery. There are, though, constraints in the regulations (with respect to national regulators) for various professional programmes offered through open, distance and online learning.

As noted above, the Indian higher education system is the second largest in the world, and it has expanded in many aspects of quality professional education, research and development, and technology-enabled learning (TEL), though quantitative expansion often raises the question of non-commensurate quality in terms of low rates of excellence, under-performance, inflexibility, slow productivity, system over-regulation, and non-competitiveness. Not surprisingly, Philip Altbach, a famous international educator, long ago remarked that the Indian system of higher education has pockets of excellence in a sea of mediocrity (Altbach, 2017), and Prasad (2018) underlined that only 10% of Indian students study in those pockets of excellence. There is also a disconnect between general higher education and technical education, which stand apart from each other without any significant horizontal or vertical mobility.

These issues notwithstanding, Indian intellectuals and entrepreneurs dominate global platforms, including in Silicon Valley, the Boston Group, Fortune 500 companies, Nobel laureates, global scientific research, and global diplomacy, and as CEOs of multinational giants such as Adobe, Alphabet, Google, IBM, Mastercard, Microsoft, and Twitter.

It is in this context that during the past few years, the Government of India and the University Grants Commission (UGC) embarked on a series of reforms in curriculum, teaching–learning/pedagogy, TEL/blended learning, and employability. The important reforms are mentioned below; they also constitute part of reforms in open and distance learning (ODL, discussed subsequently) and are to be further reformed/revised based on the NEP-2020.

- A choice-based credit system (UGC, n.d.), allowing flexibility for undergraduate students to combine courses from discipline core competencies, interdisciplinary competencies, social and life-skills competencies, and vocational skills competencies.
- The Learning-Outcome-Based Curriculum Framework (UGC, n.d.) and graduate attributes, specifying programme and course learning outcomes and graduate attributes, based on which teaching–learning assessments are to be organised.
- Evaluation reforms in higher education institutions (UGC, 2019).
- ODL and Online Learning Regulations 2020 (combining the ODL Regulations of 2017 and the Online Learning Regulations of 2018), discussed below.

To enhance access, equity, quality and employability, the UGC introduced in 2021 significant regulations and guidelines, in the context of the NEP-2020:

- Regulation on Academic Bank of Credits (UGC, 2021a), allowing students to deposit credits (based on RPL and credits earned during courses of study) and collect these towards a degree.
- Guidelines on Multiple Entry and Exit in Academic Programmes (UGC, 2021b), providing flexible learning pathways for students to combine work and education at different times.
- Guidelines on Apprenticeships/Internships embedded in general degree programmes, based on the National Skills Qualification Framework (NSQF).
- Regulation on the Amendment of Institutions Deemed to be Universities, to enhance employability through vocational education.
- Regulation on a Credit Framework for Online Courses through the Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM), allowing recognition and accreditation of up to 40% of credits for courses taken from SWAYAM towards a degree by any HE student.
- Guidelines on Internationalisation of Higher Education in India.
- Quality mandate to improve the quality of higher education institutions (HEIs): multidisciplinary programmes, faculty induction programmes through *Guru Dashta*, inclusion of values and professional ethics through *Mulya Pravah*, life-skills empowerment for graduates, community engagement, industry–academic linkage, and digital resources in regional languages.
- More-compatible national entrance and exit examinations through the National Testing Agency, and the initiation of a common Central University Entrance Test.
- An Institutional Development Plan 2022 for each HEI to develop and implement (UGC, 2022b).

- A National Higher Education Qualifications Framework 2022 (under national discussion).
- ODL-OLL Regulations Amendment 2022 (under national discussion).
- Draft Guidelines for Transforming Higher Education Institutions into Multidisciplinary Institutions (UGC, 2022a).

While most of these are already being implemented by HEIs, the comprehensiveness and intensity of tasks are being worked out through a detailed plan of action for implementing the NEP-2020 in the coming years.

## National Education Policy 2020

Since the present national government took office in 2014, constant efforts have been made to reassess the past educational policies of 1968 and 1986, the Programme of Action of 1992, and the Skill Development and Entrepreneurship Policy of 2015, and to: (i) formulate a national education policy based on Indian culture, tradition, values and knowledge systems; (ii) enhance the quality of education; (iii) and address global developments of the 21<sup>st</sup> century. Initiated in 2015, the National Education Policy 2020 (Government of India, 2020) was promulgated by the Indian Parliament in July 2020, after many national and regional deliberations. The new policy, which is considered grounded, robust, competitive, progressive and futuristic, takes stock of the past, contemporary global developments, and best practices, and it proposes a paradigm shift in the entire education system for quality education, employable education, and education that fosters creativity and innovation. In so far as higher and further education are concerned, the NEP-2020 proposes the following significant changes and interventions:

- Education based on Indian culture, tradition, values and the Bhartiya Gyan Parampara (Indian knowledge system).
- Structural changes, starting from preparatory early childhood education, and specifically in higher education: undergraduate (3–4 years), postgraduate (1–2 years), integrated UG–PG (5 years).
- 50% GER by 2035, with greater emphasis on addressing gender, disability and disadvantage, and focusing on access, equity and inclusivity.
- Holistic and multidisciplinary education; curricula with integrated theory–practicum–internship; and flexible and multiple pathways for horizontal and vertical mobility.
- Multiple entry–exit options for flexible and lifelong learning, with recognition and accreditation of prior learning, credit accumulation and credit transfer (through the national Academic Bank of Credits).
- Greater and appropriate skilling and employability built into the curriculum, along with 21<sup>st</sup>-century skills and competencies, compatible with the NSQF; liberal-foundation education compulsory for all disciplines of study in general, and for professional education.
- Education/teaching–learning in mother tongue and local dialects.
- Technology for planning, teaching–learning–assessment, e-content development in regional languages, OER and massive open online courses (MOOCs); use of artificial intelligence, machine learning and learning analytics for administration and management; increased access for the disadvantaged; creation of virtual labs; and the establishment of a National Education Technology Forum for digital education and training.

- Extensive use of blended learning — blurring the distinction between F2F, distance, and online education and training — and seamless credit transfer across programmes/courses through various delivery mechanisms.
- Quality academic leadership, with robust governance and management.
- “Light but tight” regulation and accreditation.

The NEP-2020 is under national deliberation with respect to its implementation strategies. Simultaneous to this deliberation, some steps have already been taken by the government, the respective higher and professional education regulators, and HEIs (including ODL institutions) to partially implement the national policy. The NEP-2020 puts the entire system of teaching–learning into a “blended teaching–learning” context and underlines that there will be no distinction between campus-based, distance and online learning in terms of intent, content and outcomes. It specifically notes two important aspects — multidisciplinary and holistic education, and parity of esteem — as follows:

A holistic and multidisciplinary education would aim to develop all capacities of human beings — intellectual, aesthetic, social, physical, emotional, and moral in an integrated manner. Such an education will help develop well-rounded individuals that possess critical 21<sup>st</sup> century capacities in fields across the arts, humanities, languages, sciences, social sciences, and professional, technical, and vocational fields; an ethic of social engagement; soft skills, such as communication, discussion and debate; and rigorous specialisation in a chosen field or fields. Such a holistic education shall be, in the long term, the approach of all undergraduate programmes, including those in professional, technical, and vocational disciplines. (Government of India, 2020, p. 36)

Finally, all programmes, courses, curricula, and pedagogy across subjects, including those in class, online, and in ODL modes, as well as student support will aim to achieve global standards of quality. (Government of India, 2020, p. 39)

In response to this, all HEIs (including ODL institutions) were mandated to establish NEP Cells in their universities and develop an Institutional Development Plan (IDP) (UGC, 2022b) that emphasises the formulation and implementation of a Teaching Policy, Research Policy, Community Service Policy, Management Policy, Social Responsibility Policy, and Policy on Serving People with Special Educational Needs (as well as an OER Policy and a MOOCs Policy, based on UGC regulations for SWAYAM, the national online platform). These are to be based on:

- institutional mission and vision and SWOC analysis
- needs assessment for
  - curriculum
  - pedagogy
  - administration
  - examination reforms
  - institutional governance
  - human resource management
  - collaboration and partnership

- institutional branding
- research and development
- social outreach
- monitoring and evaluation
- employability
- supporting disadvantaged students and students with special educational needs
- faculty responsibility and development
- student access and success
- resource mobilisation
- alumni and community engagement
- institutional goals, indicators and time-bound targets
- human and financial requirements to address institutional goals
- the development of a five-year annual activity plan
- correspondence between targets, resources and outcomes

These are important aspects of institutional reforms, but they are lacking in both conventional and open universities (though many have established procedures and guidelines for these areas, including learner support, and open universities such as IGNOU already have IDPs in place for the coming years).

An important aspect of the reform is structural changes, a significant one of which is the introduction of a four-year UG programme and a one-year PG programme. The University of Delhi (DU) admits over 500,000 students each year, and in 2022, DU again introduced a four-year UG programme (the earlier one had been withdrawn in 2015), with:

- a new UG Curriculum Framework (in which students can opt for one to three disciplines, and there is built-in research with pathways for students to choose academic careers, research careers, or seek careers in entrepreneurship)
- a nation-wide entrance test conducted by the National Testing Agency
- modular certification at the end of the first year, a diploma at the end of the second year, a degree with honours at the end of the third year, and honours with research at the end of the fourth year

The credit workload has also been enhanced to 44 credits a year, totalling 176 for four years (Kumar, 2022). A few universities have already adopted this programme, though most of the conventional universities and all of the OUs are still in the preparatory phase of shifting to the new curriculum framework.

With respect to TEL, besides the Government of India's SWAYAM, the UGC has its E-PG Pathshala online portal through the ILMS platform, in which 778 courses with 23,000 e-modules in 67 subjects are available and which had 13 million visitors in 2021. These are also available offline through e-Pathya and as e-books through e-Adhyaya. In addition, there is Vidya Mitra YouTube, with over 557,000 subscribers. The All India Council for Technical Education (AICTE) has initiated virtual internships (numbering over 120,000) that ODL institutions can use. However, the regulations of professional education councils such as AICTE and others restrict skill development through ODL in various areas of professional education, including engineering and medicine.

## Research Objectives

The focus of this study was to ascertain, based on the recent developments in higher education generally and developments in ODL and the NEP-2020 specifically, to what extent and in what ways the open universities and dual-mode universities in India have been able to address the concerns of access (GER), equity, inclusion (gender, disadvantage, disability), relevance, teaching–learning, employability, cost-effectiveness, regional/national development, and internationalisation (or cross-border delivery). The detailed objectives were as follows:

- 1) Review the current policy and status of distance education in India in terms of its growth and development, increasing access for the disadvantaged, gender equality, and the use of innovative teaching–learning methods (including innovative teaching–learning during Covid-19), especially through the use of appropriate technologies.
- 2) Review the status of technology use in teaching and learning, including the use of open educational resources, massive open online courses, and mobile devices for the delivery of distance education, and the effective use of technology for teaching–learning during Covid-19.
- 3) Address the wider question of quality in distance education and the contribution of distance education to national development.
- 4) Analyse the cost-effectiveness of distance education through critical examination of the performance of distance teaching institutions in terms of unit cost, student success (graduation) and attrition (dropout).
- 5) Propose recommendations that will enable the distance teaching institutions and government to take concrete steps to strengthen and improve student learning outcomes for employability and entrepreneurship.

## Review of the Literature and Research

A significant number of research reviews and critical reviews on the status and development of ODL in India have been carried out in the past three decades. Though correspondence education and open university education were initiated in 1962 and 1982, respectively, research and critical reviews have only been appearing from the 1990s onward. The first research review was published in 1992 (Panda, 1992), followed by reviews and analyses by Mishra (1998), Evans (2000), Panda (2005) and Gaba (2007). We have not seen any significant review in the past decade (though research studies and reviews on Covid-19 and TEL appeared during 2020–21 and are reviewed in a subsequent section). It is therefore not surprising that there is a dearth of systematic research studies on open universities and dual-mode distance teaching institutions, a fact of which the institutions are aware and for which institutional interventions are being undertaken.

However, there are scores of studies analysing historical developments and the status and future of open and distance learning in India. Critical analysis through international reporting appeared towards the end of the 1990s (Panda, 1999a), followed by reflective analysis by Panda (2005), Panda et al. (2006), CEMCA (2016), Mishra (2017), Bordoloi (2018), Kaushik and Dhanarajan (2018), Prasad (2018), Panda and Garg (2019), Rao (2020), Mishra and Panda (2020), Kant et al. (2021), Das and Panda (2021) and IBEF (2021). These studies are critical and futuristic in the sense that the reviewers have reflected upon the analyses and their implications for policy, access (GER), equity, inclusiveness, relevance, quality, TEL, cost-effectiveness, internationalisation and networking, and accreditation.

In the first such national review published in an international review monograph, Panda (1999a) took stock of the developments in ODL in India and argued for more convergence of dual-mode distance education and single-mode open university education, as well as increased networking and sharing between the two. This was when mobile phones and the semantic Web were just emerging. Simultaneously, Yadav and Panda (1999) undertook a critical review of policy and developments in ODL in India. That same year included a compilation of reflections on policies, practices and quality concerns in ODL in the country (Panda, 1999b). This was followed by another review of distance education and national development, published in a special issue of the journal *Distance Education*, where national and international comparisons were made. In that special paper, Panda (2005) continued the 1999 reflections within the framework of distance education policy, access and equity, curriculum and instructional delivery, media and technology, human resource development, funding and costing, quality and accreditation, collaboration and networking, internationalisation, outcomes and benefits. In the subsequent year, a comprehensive reflective review of 40 years of distance education in India was compiled and published (Garg et al., 2006), which included critical reflections from policy makers, institutional leaders, practitioners and researchers in the field. Two parallel reviews (CEMCA, 2016; Mishra, 2017) have also contributed to our understanding of ODL in the region.

Another significant publication was the personal reflections of an insider (Prasad, 2018), which contributed to the ongoing debates within higher education and ODL at a time when the new National Education Policy 2020 was being debated. Subsequent to this came further reflections by Panda and Garg (2019) within the context of the NEP-2020 and significant technology developments in the country, including the national online/MOOC platform SWAYAM. In this work, more space was given to reflections upon the areas of technology, funding, regulation and quality assurance, which were considered critical at that time.

A few recent works have significantly contributed to our reflections on ODL in the country. An institutional leader, Rao (2020), reflected on four crucial areas — transformation, examination, capacity building, and regulations — and made suggestions for ODL to proceed further in these four areas. A recent stock-taking by IBEF (2021) also added value to future discourses on the policy and practice of ODL and online learning.

The present study draws upon these prior research endeavours and reflective reviews, looks towards formulating and sharpening research objectives, research methodology, conceptual frameworks, and instruments, and seeks to articulate possible implications for the future.

## Cost-Effectiveness Framework

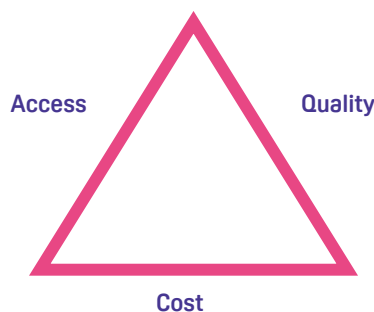
Past research on the subject has indicated the costs of distance teaching institutions at the level of individual courses and institutional aggregates, and has covered different aspects of cost analysis, including fixed and variable costs (Datt & Gaba, 2006; Panda & Gaba, 2008; Gaba et al., 2011). Another study established the relationships between costs, courses, and student number in comparison with the traditional system (Gaba, 1997). Research studies have also addressed issues and concerns that have an impact on the economics of distance education as a system and have explored some of the options available for improving efficiency and effectiveness, as in the case of a cost study on open schooling (Rumble & Koul, 2007). In the present research study, the examination of cost-effectiveness is based on analysing income and expenditure, passing/graduation, dropout, and past studies on the unit cost of conventional higher education and ODL.

## Conceptual Framework for the Study

The foregoing review of the research and literature provided the base for developing an appropriate conceptual framework for this study. Important reviews conducted by COL, ICDE, and AAOU, among others, also were significant.

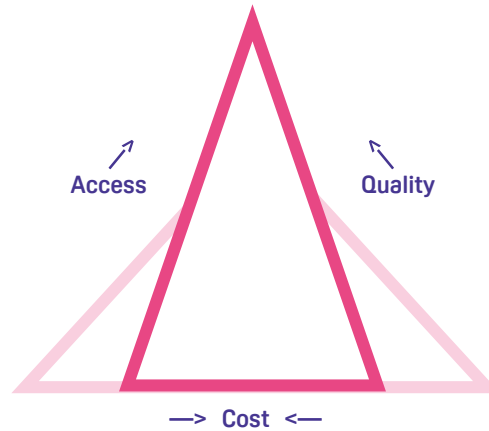
The conceptual framework of the study (as given in Figure 3 below) draws heavily upon critical discourses and formulations by Rumble and Koul (2007), Panda and Gaba (2008), Daniel (2004a, 2004b, 2019), Daniel et al. (2009), Latchem (2007, 2016), Power and Gould-Morven (2011), Ossiannilsson et al. (2015), Tait (2018a, 2018b), Panda (2020) and COL (2021). Latchem (2007) underlined the importance of research and evaluation at three levels: *national* (policy, cost-effectiveness, quality), *institutional* (learners, decision making, training), and *practitioner* (reflection on practice, and ODL scholarship). In this study, we have taken up the “scholarship of teaching and learning” — i.e., discipline pedagogy and research pedagogy (teaching–learning), the specification of operational quality processes, and the learner-centric integrated use of technology — as crucial for ensuring quality in higher education/ODL, based on the NEP-2020’s strong argument in support of them (Government of India, 2020).

Based on the “iron triangle” proposed by Sir John Daniel (Figure 1), experts Daniel, Kanwar and Uvalić-Trumbić (2009) further reflected on the triangle of access, cost and quality in the context of higher education, and more specifically open and distance learning. While on the one hand, access may increase cost and reduce quality, on the other hand, an increase in quality may further enhance the cost.



*Figure 1. The relationships between cost, access and quality.*

While it may not be possible to achieve all three at the same time, one may aim to achieve at least two of the three. However, a balance between the three can be maintained. This depends on making trade-offs between them and limiting how much they stretch. The authors argue that one can extend the iron triangle (Figure 2) where access can be increased, quality can be maintained and cost can be reduced (to achieve economy of scale) if more TEL (i.e., online and blended learning) is adopted.

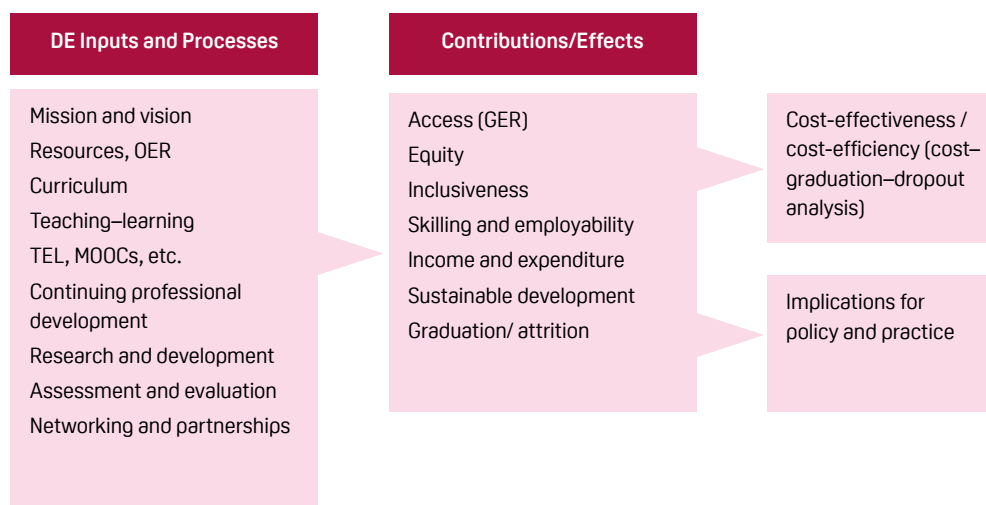


*Figure 2. Extension of the triangle's sides.*

Power and Gould-Morven (2011) further extended this triangle model/argument, arguing for BOLD (blended online learning design) in which accessibility (in place of access), cost-effectiveness (in place of cost), and quality (as a constant) assume significance or prioritisation for stakeholders. While students are concerned with accessibility, teachers are concerned with quality, and institutional leaders are concerned with institutional cost-effectiveness. A balance can be maintained in terms of a fulfilment threshold for each one's needs. The authors suggested increasing the use of distance and online learning, faculty involvement in decision making, and efficient utilisation of resources. In a recent work, Daniel revisited the triangle (Daniel, 2017) and argued for: extending the vector of “access” through technology-enabled/online learning; extending the vector of “quality” to quality assurance, processes, and learning outcomes; and extending the vector of “cost” to increase the reduction of institutional and private costs through using more OER and MOOCs, implementing open badges and credentialling, and enhancing the skills of faculty and staff. This has been considered in our conceptual framework, and in relation to arguments on cost and quality (Panda, 2020).

Our conceptual framework (Figure 3) also takes into account:

- Crowther's (1969) concepts of “open to people” (democratisation, social justice, development), “open to places” (extending reach through interactive technologies), “open to methods” (organising online pedagogy) and “open to ideas” (new subjects and new ways of teaching old subjects)
- the costing considerations articulated by Panda and Gaba (2008)
- the quality model of Ossiannilsson et al. (2015)
- the 24-question quality framework by Latchem (2016)
- the recent articulations on open universities by Tait (2018a, 2018b)
- COL's very recent work on ODL policy in the Commonwealth (COL, 2021)



*Figure 3. Conceptual framework of the study.*

Based on the above framework, the research design was formulated as given below.

## Methods

### 1. RESEARCH METHODOLOGY

The present research study employs a mixed-methods approach: policy and document analysis to address part of Research Objectives 1 and 2; and a survey to address Research Objectives 1 to 4, based on which derivations have been made for Research Objective 5. Mixed-methods research was employed to address three aspects: (i) document analysis, (ii) a survey of access, equity and other features, and (c) a survey of institutional cost-effectiveness (income-expenditure, passing/graduation).

### 2. POPULATION AND SAMPLE

India has 17 open universities (including IGNOU and two newly established state open universities) and about 110 recognised dual-mode university DEIs (including about 60 UGC-recognised online education providers). Since a 10–15% response rate was expected, the survey questionnaire was administered online to all the OUs and DEIs, with the expectation that four to five OUs and about ten DEIs would respond. COL also administered an online questionnaire to the institutional heads, which was subsequently followed up. We received responses from two OUs and three DEIs, and as far as possible, institutional annual reports of OUs were accessed to collect institutional statuses on ODL.

### 3. TOOLS AND TECHNIQUES/INSTRUMENTS

The tool for this study comprised a survey questionnaire on policies, learner charters, access and equity, programme and course design and development, learner support services, technology-enabled teaching-learning/learner support/assessment and evaluation, online learning (including the use of OER and MOOCs), skilling and employability, quality assurance mechanisms, leadership and governance, graduation and attrition/dropout, recurring and non-recurring income and expenditure, and expenditure for programmes (see the Appendix).

#### 4. PROCEDURE FOR DATA COLLECTION

COL sent the online questionnaire to all institutional heads, then followed up with repeated requests. Only five institutions responded (two OUs and three DEIs); an attempt has been made to analyse the obtained response sets to make any significant interpretations. Some available data were accessed from the annual reports of some open universities. These data were supplemented by cost data provided by COL, as well as data analysed in a CEMCA report (CEMCA, 2016), a COL report (2021), and various policy documents and guidelines from the UGC, based on the recommendations of the National Education Policy 2020.

The following three sections are devoted to analysing the status of ODL in India (Section II), the Covid-19 response and innovative teaching-learning (Section III), and recommendations for the way forward (Section IV).



# Section 2:

## The Status of ODL in India

Correspondence education in India was initiated to address the issues of flexible access to mass education, continuing education, and continuing professional development, and the institutional cost of education. With the advent of open universities (i.e., a provincial OU in 1982 and the national OU in 1985), the focus shifted to offering needs-based, skills-based and development-oriented TEL, though the concerns of access and equity were still addressed. From the admission of just 1,112 undergraduate students in 1962 in correspondence courses at the University of Delhi, the system of distance and open education has grown rapidly to include 17 OUs and about 110 dual-mode DEIs (reduced from the earlier mentioned 264 due to the new UGC ODL-Online Regulations 2020). These cater to the educational needs of about 4,286,922 students, which comprises about 11.1% of the total higher education students in the country. Recently, the national regulator UGC has also accepted online programmes being offered by about 900 autonomous colleges across the country.

In the Indian higher education system, the open universities have brought in significant changes and developments with respect to (and have taken the lead in):

- diversified and needs-based programmes and courses
- addressing national development and continuing professional development in a variety of professions
- new pedagogy design and instructional/learning design
- the scholarship of teaching and learning
- more TEL
- reforms in credit-based/modular courses and credit transfers
- the use of multiple-media resources (print, audio, video, multimedia, web-based, including a national repository of knowledge resources)
- cross-border delivery of programmes

In many ways, ODL and open universities have been at the forefront of curricular and technological reforms in comparison to the conventional HEIs.

The period of ODL development in India from 1960 to 1985 was inspired by the goal of providing access and second chances to those who could not get into the regular system due to constraints of time and previous academic achievements. This period also witnessed the emergence of the first open university with a philosophy of enhancing learner competencies within a lifelong learning framework. During the period 1986–2006, the 1986 National Policy on Education was put in place, which stressed equality of educational opportunity, out-of-class educational opportunities, and flexibility in the subjects offered and studied. The period witnessed diversified programmes of study, pedagogic innovations specific to ODL, programmes on continuing professional development, experiments in curriculum–pedagogy–ICT linkages, and emphasis on

cost-effectiveness and economy of scale. IGNOU was accorded the status of an apex body to co-ordinate ODL standards all over the country. A dedicated national satellite for education (EduSat) was placed for uplink from the IGNOU campus, with two-way audio and videoconferencing capabilities. This period also witnessed expanded privatisation of ODL. Subsequently, ODL institutions moved towards competition with full parity of esteem, changing the student clientele from older to much younger generations, a focus on increasing the GER (sometimes at the cost of internal quality due to low-cost educational delivery), and developments in web technology and social technologies and networks, though without any flexible integration of technology with pedagogy and student personalised learning (termed “technology bewilderment”). Private universities entered ODL, and high-standard conventional public universities and institutions began offering ODL/OLL.

It is worth emphasising that the past decade has seen tremendous developments in TEL, curricular development of 21<sup>st</sup>-century skills, resource-based (OER- and MOOC-based) self-learning as well as collaborative networked learning, employability and sustainable development initiatives to address the changing nature of jobs as well as national and global development imperatives, among others. A new digital learning ecosystem is emerging, and education is becoming more competitive, networked, and needs- and community-based. “Learning for development” has become the new “mantra” for this century. In this changing context and amidst growing aspirations for increased higher and professional education, central and state governments may not be in a position to establish thousands of F2F conventional campuses; ODL is therefore being considered for centre stage to address the demand for mass quality education at lower cost. It has often been asked whether the ODL system, while addressing the concerns of mass education, can also meet the requirements of quality and employability while still achieving economy of scale. It is in these contexts that COL proposed conducting an in-depth study on the status and future possibilities of ODL in the country, to address the emerging issues and concerns about higher education in relation to ODL policy, practices, and transformation in the country.

According to data recorded by the Distance Education Bureau of the UGC (the national regulator of ODL) as of 25 January 2022, the distance and online programmes approved and offered by HEIs include the following:

- HEIs offering ODL: 41 (programmes offered = 793)
- OLL-entitled HEIs: 56 (programmes offered = 328)
- OLL-eligible HEIs: 2 (programmes offered = 10)

The All India Survey on Higher Education for 2019–2020 (MOE, 2021) indicated that by 2020, India had one central open university (IGNOU), 14 state open universities (SOUs, with two more established subsequently), two state private open universities, and 110 dual-mode universities offering ODL programmes, with 4,286,922 students enrolled, which was 11.1% of the country’s total enrolment in HE. About two million of these (almost half) were in undergraduate programmes and one million (about one fourth) in postgraduate programmes. The data for 2020–21 for IGNOU are presented below and show its massive operation within and outside the country:

Students (3.3 million)	Teachers (444)	Academics (340)
Non-teaching staff (2,499)	Programmes (239)	Courses (3,345)
Schools of study (21)	SWAYAM courses (102)	Regional centres (67)
Learning support centres (2,047)	Overseas centres (23)	Academic counsellors (14,826)

IGNOU also has a presence in 28 countries through the Pan-Africa e-Network (PAN) project and in 14 countries through overseas study centres. The OUs generally have been at the forefront of curriculum

reforms in response to national and regional development needs, human resource development needs, labour market requirements, and the continuing professional development needs of various professions. OUs have competed successfully with the conventional universities in offering programmes in cutting-edge and niche-market areas. They are also flexible and responsive enough to introduce new programmes and courses based on their own independent statutory procedures. Notably:

- IGNOU has operational freedom from the UGC regulation to design and offer programmes according to its own ordinance-based regulations.
- The SOUs depend on the UGC’s approval of their programme design and offerings.
- The dual-mode university DEIs need UGC approval. For at least one year, they have to offer ODL programmes for which programmes in the F2F mode already exist, and online programmes for which programmes in the ODL mode already exist (though the 2022 new regulation for OLL proposed changing this restriction).
- The 100 top-ranking universities (in the National Institutional Ranking Framework) can offer ODL and online programmes without the regulator’s approval.
- The UGC has granted about 900 autonomous colleges permission to start OLL programmes in 2022.
- The respective professional education regulators in engineering, medicine, architecture, and teacher education, among others, have restricted what skill-based degree programmes can be offered through ODL and OLL.

In spite of the regulatory constraints, there have still been innovations in programmes offered by the OUs. For instance, in 2021–22, IGNOU introduced various new programmes offline (including the PGD in Migration and Diaspora, MA in Community and Social Responsibility, MA in Journalism and Mass Communication, MA in Environmental and Occupational Health, and BAs in Sanskrit and in Urdu) and online (MA English, Bachelor of Social Work, MBA, Bachelor of Computer Application and Master of Computer Application), among others. Further, IGNOU offers 64 multidisciplinary programmes, 121 interdisciplinary programmes, 31 programmes with multiple entry–exit options, over 400 skill-development courses (in agriculture, health science, performing and visual arts, computer sciences, sciences, and vocational education and training). It also offers 34 online programmes and has contributed 121 online MOOC courses to the SWAYAM national online platform.

Prasad (2018) has appropriately argued for consideration and further reflection on what ODL promised (i.e., guiding principles) versus what it has achieved so far (i.e., actual practice):

Guiding principles (dharma)	Actual practice (karma)
Democratisation of education	Large number and economy of scale
Social justice	Programme diversity
Sustainable development	Private players
Technology mediation	Profit motive
Quality requirement	More technology, less human intervention, possible loss of quality
Teacher as facilitator	
Institution teachers	

Prasad (2018) identified important variables that need to be given special attention in considering quality: diversity of programme offerings; learning resources; student support services; student evaluation; and administrative services. To these one may add skilling and employability, and the development of holistic competencies (including 21<sup>st</sup>-century skills) for jobs/vocations/professions, lifelong learning, and happy living (“happiness skills”). It has been generally found that ODL operates with lower marginal cost and therefore achieves lower unit cost in comparison to conventional F2F education. However, there is a conflict or mismatch between achieving surplus and fulfilling social goals. In this context, Prasad commented:

It is distressing to observe the attitude of some dual-mode universities which accept ODL students, but exhibit no sense of ownership or pride in them. Their usefulness is measured in terms of surplus generation. It is disheartening to listen to some vice-chancellors boasting of their achievements in terms of surpluses generated through [the] distance mode. (quoted in Daniel, 2018, p. 10)

As noted earlier, there have also been restrictions imposed by respective regulators — general as well as professional. UGC has imposed the general restrictions stipulating that only programmes offered through the F2F mode can also be offered through ODL, and that only programmes offered through ODL can be offered online. The regulators of professional programmes (especially AICTE) have imposed restrictions stating that programmes with intensive skill components cannot be offered through the ODL/online mode, and that the first HE degree should be by the F2F mode only. Daniel (2018) identified these as misguided policies. He further highlighted, appropriately so, that dual-mode universities following the same dharma of educational democratisation as open universities sometimes do better than the latter. Further, he suggested that open universities need to seriously reflect on issues of democratisation, social justice, development, using interactive technology, organising online pedagogy, and exploring new subjects for design and delivery. These have been examined in four categories: access, equity, cost-effectiveness and quality.

## Access

Since 1962, when the first correspondence education was instituted at the University of Delhi, DE has expanded considerably for higher and further education in India. While in 1967–68, when the country had no open university, there were only 8,577 DE students (0.62% of total HE), the number had increased to over 382,099 by 1985–86 (10.59% of total HE), then over three million in 2004–5 (27.27% of total HE), 4.2 million in 2011–12 (16.16% of total HE), and over 4.28 million in 2019–20 (11.12% of total HE) (Table 5).

*Table 5. Enrolment (conventional and distance)*

Year	Conventional HEI	OUs	DEIs	Total DE
1967–68	1,370,261	-	8,577	8,577
1985–86	3,605,029	17,009	355,090	382,099
2004–5	11,038,543	886,612	2,124,591	3,011,203
2011–12	25,990,000	1,777,000	2,424,000	4,201,000
2019–20	38,536,359	-	-	4,286,922

Sources: MOE (2021); IGNOU (2016).

As noted earlier, of the 4.28 million students by 2020, about one third study at the undergraduate level and above one fourth study at the postgraduate level (Table 6). For OUs, these figures were about 56% and 24%, respectively, in 2013–14 (CEMCA, 2016). The percentage of certificate and diploma students went down from about 20% to less than 5% during the same period. Overall, males outnumber females, but female enrolment is higher in research degree, postgraduate and integrated programmes of study.

The trend for 2020–21 in data recorded from selected DEIs shows variations between UG and PG admissions, as well as student enrolment and passing, i.e., who received certificates/diplomas/degrees on completion of a programme of study (Table 7). The percentage of the pass-outs varied from 14.80% to 73.29% during the period.

*Table 6. Programme-wise and gender-wise enrolment in ODL, 2020*

Programme Level	Male	Female	Total
PhD	44 (43.56)	57 (56.44)	101
MPhil	33 (47.82)	36 (52.17)	69
Postgraduate	504,711 (45)	616,735 (55)	1,121,446
Undergraduate	1,745,438 (59.81)	1,172,409 (40.19)	2,917,847
PG Diploma	50,863 (57.17)	38,103 (42.83)	88,966
Diploma	58,916 (49.07)	61,144 (50.93)	120,060
Certificate	18,795 (50.09)	15,951 (49.91)	34,746
Integrated	774 (20.99)	2,913 (79.01)	3,687
<b>Total</b>	<b>2,379,574 (55.50)</b>	<b>1,907,348 (44.50)</b>	<b>4,286,922</b>

Source: MOE (2021). Figures in parentheses are percentages.

*Table 7. Enrolment and pass trends (selected DEIs)*

2019–20						
Institution Name	Certificate	D/PGD	UG	PG	Total	Passes
UPRTOU		8,506	22,115	17,504	48,125	28,750 (59.74%)
Aligarh Muslim University	84	1,272	1,358	299	3,013	2,047 (67.93%)
CDOE, Tezpur University	-	-	-	-	352	258 (73.29%)
DDE, Utkal University	-	-	-	-	-	-
BRAOU	320	317	98,648	17,067	116,352	34,064 (29.27%)

2020–21						
Institution Name	Certificate	D/PGD	UG	PG	Total	Passes
UPRTOU					51,367	11,899 (23.16%)
Aligarh Muslim University	93	1,016	1,392	531	3,032	
CDOE, Tezpur University	-	-	-	-	71	35 (49.29)
DDE, Utkal University	-	-	-	-	-	-
BRAOU	673	376	93,744	18,767	113,560	16,815 (14.80)

There is also wide diversity in programme offerings — dual-mode DEIs offer most of the programmes offered by the parent conventional university, while OUs have gone beyond the conventional universities to offer programmes in many development, community-oriented, needs-based and lifelong learning areas. In fact, OUs are far ahead of conventional universities in programme offerings in non-conventional areas due to their operational flexibility (and the rigid structure of conventional institutions). Starting from just three programmes in 1983–84, the OUs offered 1,338 programmes in 2013–14, with subsequent increases. Further, dual-mode DEIs are restricted to offering programmes in their university’s jurisdiction and SOUs to their state jurisdiction, while IGNOU has the mandate to offer programmes all over the country and overseas. Their learner support centres (LSCs) are also diversified and facilitate democratisation in education. Of the 1,961 LSCs, some are in remote and specialised areas — 84 for defence personnel, 170 for the hilly north-east states of the country, mobile e-learning terminal vans in rural areas, 340 special LSCs for the disadvantaged groups, 163 for inmates in various jails across the country, and 84 adopted villages in the Government of India’s Unnat Bharat Abhiyan scheme (for holistic rural community development).

## Equity

In conventional higher education, equity in terms of enrolment stands as follows: females 49%, SC 14.7%, ST 5.6%, OBC 37% and other minorities 7.8%, leaving only 35% enrolment from non-disadvantaged communities. These institutions also implement the constitutional provision of covering over 50% of the costs for disadvantaged students (SC, ST, OBC, minorities and persons with disabilities [PWD]), funding generally reimbursed by the government. The ODL institutions also follow the same reservation policy — since entry to the institution/programme is open to anyone, regardless of previous examination scores — and waive fees for disadvantaged students; however, these institutions often cover these costs from their own funds.

The ODL institutions, and especially the OUs, are expected to contribute to equity and inclusivity in educational opportunities. The comparative data from 2003–4 to 2013–14 (CEMCA, 2016) given in Table 8 show that overall female enrolment increased from 35% to 42% (decreasing only at KSOU, MPBOU, NSOU and PSSOU); the enrolment for Scheduled Caste students varied from 14% to 16%, for Scheduled Tribe students from 4.6% to 9%, and for Other Backward Classes from 30% to 38%.

*Table 8. Profile of distance learners enrolled at SOUs*

SOUs	Years	Female	Rural	SC	ST	OBC
BRAOU	2003–4	34.6	42.3	21.3	6.1	30.7
	2009–10	41.4	62.2	20.2	6.3	45.0
	2013–14	43.3	66.1	22.3	8.1	49.1
VMOU	2003–4	23.6	NA	10.6	6.2	-
	2009–10	35.7	45.0	13.2	11.3	31.0
	2013–14	38.0	54.4	13.1	11.1	37.9
NOU	2003–4	24.2	55.2	8.7	3.2	38.8
	2009–10	34.0	66.8	8.8	2.8	28.6
	2013–14	36.2	66.5	8.2	3.7	40.6
YCMOU	2003–4	33.0	47.0	14.9	4.9	25.9
	2009–10	39.3	48.4	10.5	3.5	27.0
	2013–14	35.5	63.0	15.1	6.2	28.0
MPBOU	2003–4	39.9	57.6	11.9	9.9	29.9
	2009–10	36.6	55.6	18.1	12.1	27.6
	2013–14	37.8	NA	11.2	12.4	37.1
BAOU	2003–4	32.3	49.1	12.4	5.6	-
	2009–10	43.1	46.9	19.9	6.9	-
	2013–14	47.6	64.4	25.2	15.2	0.1
KSOU	2003–4	52.1	NA	NA	NA	NA
	2009–10	46.5	51.0	12.5	6.0	8.3
	2013–14	NA	NA	NA	NA	NA
NSOU	2003–4	44.8	50.7	20.1	4.8	-
	2009–10	41.2	NA	16.8	2.7	6.6
	2013–14	40.7	4.1	20.7	4.3	12.9
UPRTOU	2003–4	27.5	42.3	10.9	0.0	34.4
	2009–10	40.1	65.3	0.1	0.3	37.8
	2013–14	45.2	69.3	13.0	0.5	50.0

TNOU	2003–4	38.8	49.8	13.9	0.7	71.8
	2009–10	40.4	39.8	18.4	0.7	70.1
	2013–14	49.1	43.5	27.1	0.0	72.9
PSSOU	2003–4	–	–	–	–	–
	2009–10	40.7	61.9	16.9	17.7	34.4
	2013–14	38.9	NA	13.4	27.6	41.1
UOU	2003–4	–	–	–	–	–
	2009–10	34.4	60.1	7.8	2.6	12.2
	2013–14	46.4	60.2	16.0	803	3.6
KKHSOU	2003–4	–	–	--	–	–
	2009–10	44.3	41.9	11.0	12.2	31.0
	2013–14	43.9	42.4	4.1	11.3	35.9
Percentage of the total enrolment	2003–4	35.1	49.3	13.9	4.6	38.6
	2009–10	39.8	53.7	13.4	6.5	30.0
	2013–14	41.9	53.4	15.8	9.1	34.1

Note: Figures in columns 3–7 are percentages. NA = not available.

Source: CEMCA (2016).

For IGNOU, while both fresh enrolment and re-registration of students increased during the 2014–15 to 2018–19 period (Table 9), a rough estimate of the present rate shows a declining trend. However, female enrolment hovers around 45–46%, enrolment from rural areas is around 43%, and it is increasing for other disadvantaged groups (SC 11.75%, ST 7.99%, and OBC 18.49% in 2018–19).

*Table 9. Equity in enrolment: IGNOU*

Indicators	2014–15	2015–16	2016–17	2017–18	2018–19
Fresh students	418,914	455,501	549,438	653,054	673,842
Re-registration	323,771	340,630	374,628	420,175	475,429
Passes	135,898 (18.29%)	149,044 (18.72%)	159,339 (17.24%)	153,169 (14.27%)	148,513 (12.92%)
<b>Total</b>	<b>742,685</b>	<b>796,131</b>	<b>924,066</b>	<b>1,073,229</b>	<b>1,149,271</b>
<b>Rural/Urban</b>					
Rural	200,286 (44.71%)	309,812 (41.63%)	338,791 (40.32%)	235,320 (24.59%)	455,432 (43.39%)
Urban	247,588	434,280	501,328	721,614	594,039
<b>Gender</b>					
Male	237,769	387,411	439,927	508,503	705,560
Female	210,021 (46.91%)	322,565 (45.43%)	365,710 (45.39%)	408,165 (44.52%)	288,380 (29%)
Transgender	84	351	287	307	104
<b>Caste</b>					
General	267,749	436,228	468,725	565,313	613,931
SC	42,757	69,494	94,686	102,739	116,839 (11.75%)
ST	34,265	59,839	73,548	74,753	79,431 (7.99%)
OBC	103,104	142,199	168,965	174,170	183,843 (18.49%)
PWD	3,540	3,998	3,958	6,892	3,676

Source: IGNOU annual reports.

Enrolment for prison inmates also increased over a five-year period: 1,191 (2014–15), 1,529 (2015–16), 4,276 (2016–17), 2,463 (2017–18), and 2,245 (2018–19).

The 2020–21 data received from ODL institutions (Tables 10, 11 and 12) show that female enrolment is 37–46%, rural enrolment is 25–72%, and disadvantaged enrolment is SC 81–90%, ST 1–16%, and PWD 1–2.63%.

*Table 10. Gender distribution, 2020–21 (selected DEIs)*

Institution Name				% Distribution		
	Male	Female	Total	Male	Female	Total
UPROU	32,296	19,071	51,367	62.87	37.13	100.00
Aligarh Muslim University	1,506		1,506	100.00	0.00	100.00
CDOE, Tezpur	44	27	71	61.97	38.03	100.00
DDE, Utkal University	-	-	-	-	-	-
BRAOU	61,336	52,207	113,543	54.02	45.98	100.00

*Table 11. Geographical distribution, 2020–21 (selected DEIs)*

Institution Name				% Distribution		
	Rural	Urban	Total	Rural	Urban	Total
UPROU	36,922	14,445	51,367	71.88	28.12	100.00
Aligarh Muslim University	756	2,276	3,032	24.93	75.07	100.00
CDOE, Tezpur	-	-	-	-	-	-
DDE, Utkal University	-	-	-	-	-	-
BRAOU	67,840	41,703	109,543	61.93	38.07	100.00

*Table 12. SC/ST/PWD distribution, 2020–21 (selected DEIs)*

Institution Name					% Distribution			
	SC	ST	PWD	Total	SC	ST	PWD	Total
UPROU	31,182	305	316	31,803	98.05	0.96	0.99	100.00
Aligarh Muslim University	1,852	29	21	1,902	97.37	1.52	1.10	100.00
CDOE, Tezpur	31	6	1	38	81.58	15.79	2.63	100.00
DDE, Utkal University	-	-	-	-	-	-	-	-
BRAOU	97,989	16,741	1,219	115,949	84.51	14.44	1.05	100.00

## Cost-Effectiveness

While central universities are funded by the central government, the state universities are funded by their respective state governments, and the private universities are self-financed. In the case of ODL, there are variations: while the central and state governments partially fund the OUs, the national MOOC platform SWAYAM is fully funded by the central government, the dual-mode DEIs are largely self-sustaining, and the private ODL institutions are fully self-financing.

In the past, ODL has been identified as more cost-effective than conventional higher education (Ansari, 1992; Datt & Gaba, 2006; Gaba et al., 2011; Kulandai Swamy, 1991; Panda & Gaba, 2008; Pillai & Naidu, 1991). The studies and reports indicate that ODL makes significant contributions to national development and continuing education/lifelong learning. Decades ago, the National Education Commission and the National Education Policy 1986 strongly recognised distance education and recommended its further expansion in the country. The National Education Policy 2020, though it does not devote any specific chapter or section to ODL, strongly advocates for drastic changes in education structure and processes, including blended learning (in which ODL plays the greatest role), to increase the GER and to reform instructional processes and quality at low cost. The NEP-2020 also ensures parity of esteem for all systems — F2F, ODL, online and blended.

- Pillai and Naidu (1991) analysed the unit costs of IGNOU and found that faculty salary consumed the largest portion of funds; with respect to developing course units and producing print materials, nearly half of the expenditure was incurred for composing text. They further found that economies of scale can be maintained up to an enrolment of 300,000. Kulandai Swamy (1991) analysed IGNOU's capital and operating costs and found that capital expenditure on buildings and campus development decreased over the years, while expenditure on equipment, furniture and libraries increased. On the other hand, this analysis indicated that expenditure on the development and production of course materials remained almost constant at 28%, but the percentage expenditure on student support services had almost doubled, from 29.8% to 57.48%.
- Naidu (2005) found that IGNOU's recurring expenditure increased from INR 3 million in 1985–86 to INR 1145.2 million in 2002–3. The salary component was only around 25% of the total recurring expenditure during 1990–91 to 2000–1. In 2001–2 and 2002–3, this further declined to 20% and 18%, respectively. He also found that the costs of course development, production and maintenance accounted for about 30%, whereas the remaining costs were shared by student support services and overheads. The delivery costs were expected to be met from students' fees, while the rest were subsidised through government funds and other internal resources.

The data collected by COL and given in Table 13 show that most of the Indian OUs are generating more than 70% of their income through student fees: YCMOU (63.38%), UOU (70.33%), IGNOU (83.68%), PSSOU (87.21%), TNOU (89.77%). Government grants varied from zero (KSOU and YCMOU) to 39% (KKHSOU).

*Table 13. Sources of income of selected Indian OUs, 2020 (in INR)*

OUs	Government	Students Fees	Other Sources	Total Revenue
BAOU	79,718,200 (23.86)	144,712,590 (43.31)	109,699,705 (32.83)	334,130,495 (100.00)
BRAOU	115,900,000 (15.95)	469,100,000 (64.56)	141,600,000 (19.49)	726,600,000 (100.00)
IGNOU	800,000,000 (11.16)	6,000,000,000 (83.68)	370,000,000 (5.16)	7,170,000,000 (100.00)
KKHSOU	131,050,666 (39.39)	104,081,279 (31.29)	97,534,214 (29.32)	332,666,159 (100.00)
KSOU	0	230,532,371 (28.68)	573,327,946 (71.32)	803,860,317 (100.00)
OSOU	67,200,000 (36.62)	74,093,350 (40.37)	42,223,900 (23.01)	183,517,250 (100.00)
PSSOU	4,000,000 (2.39)	145,814,000 (87.21)	17,390,000 (10.40)	167,204,000 (100.00)
TNOU	10,932,000 (6.31)	155,492,062 (89.77)	6,781,739 (3.92)	173,205,801 (100.00)
UOU	130,570,200 (25.53)	359,693,825 (70.33)	21,159,752 (4.14)	511,423,777 (100.00)
YCMOU	0	1,048,066,650 (68.38)	484,656,948 (31.62)	1,532,723,598 (100.00)

Note: Figures in brackets are percentages of total.

Source: COL.

As per the new Government of India policy, HEIs could avail themselves of the loan scheme provided by the national Higher Education Funding Agency (HEFA), and by 2022, nearly 97 HEIs had already been funded under this scheme (PIB, 2022). This clearly shows that while the conventional HEIs are now depending on external loans as sources of income, the OUs and ODL institutions are better placed to support their expenditure with resources generated internally.

The 2021 data collected by COL and given in Table 14 show that most of the OUs had spent more than half of their money on programme delivery: BRAOU (50.64%), BAOU (57.11%), KKHSOU (59.14%), PSSOU (76.72%), UOU (75.55%), YCMOU (61.92%) and OSOU (36.58%), the exceptions being TNOU (0.22%), KSOU (40.43%) and IGNOU (42.86%). Staff salary and other expenses varied from 23.58% (PSSOU) to 99.78% (TNOU).

*Table 14. Trend of expenditure for select Indian OUs, 2021 (in INR)*

OUs	Staff Salary	Programme Delivery	Total Expenditure
BAOU	72,301,472 (42.89)	96,284,321 (57.11)	168,585,793 (100.00)
DBROAU	275,800,000 (49.36)	282,900,000 (50.64)	558,700,000 (100.00)
IGNOU	4,000,000,000 (57.14)	3,000,000,000 (42.86)	7,000,000,000 (100.00)
KKHSOU	129,354,783 (40.86)	187,230,378 (59.14)	316,585,161 (100.00)
KSOU	402,729,318 (59.57)	273,372,698 (40.43)	676,102,016 (100.00)
OSOU	27,972,936 (36.58)	48,497,031 (63.42)	76,469,967 (100.00)
PSSOU	64,700,000 (23.58)	213,200,000 (76.72)	277,900,000 (100.00)
TNOU	131,591,333 (99.78)	288,125 (0.22)	131,879,458 (100.00)
UOU	91,939,086 (24.45)	284,068,868 (75.55)	376,007,954 (100.00)
YCMOU	349,848,444 (38.08)	568,918,086 (61.92)	918,766,530 (100.00)

Note: Figures in parentheses are percentages of the amount above them.

Source: COL.

Table 15 shows that most of the OUs faced a revenue deficit because fewer students enrolled during Covid-19. When per unit fee income is related to per unit expenditure, most SOUs faced a deficit (except TNOU and YCMOU). However, considering total revenue collected, most SOUs have surplus funding available, except in the case of PSSSU, which has a deficit of INR 3,306 per student.

*Table 15. Cost of education and fee per student in select Indian OUs, 2021 (in INR)*

OUs	Total Expenditure (a)	Enrolment (b)	Cost per Student (c)	Student Fees (d)	Fee per Student (e)	Revenue in 2021 (f)	Average Revenue per Student (g)	Surplus/ Deficit per Student
BAOU	168,585,793	17,992	9,370	144,712,590	8,043	334,130,495	18,571	9,201
BRAOU	558,700,000	113,802	4,909	469,100,000	4,122	726,600,000	6,384	1,475
IGNOU	7,000,000,000	729,306	9,598	6,000,000,000	8,227	7,170,000,000	9,831	233
KKHSOU	316,585,161	13,709	23,093	104,081,279	7,592	332,666,159	24,266	1,173
KSOU	676,102,016	16,508	40,956	230,532,371	13,965	803,860,317	48,695	7,739
OSOU	76,469,967	13,959	5,478	74,093,350	5,308	183,517,250	13,146	7,668
PSSOU	277,900,000	33,492	8,298	145,814,000	4,354	167,204,000	4,992	-3,306
TNOU	131,879,458	12,207	10,804	155,492,062	12,738	173,205,801	14,189	3,385
UOU	376,007,954	90,264	4,166	359,693,825	3,985	511,423,777	5,665	1,499
YCMOU	918,766,530	604,999	1,519	1,048,066,650	1,732	1,532,723,598	2,533	1,014

Note: (i) Cost per student (c) = a/b. (ii) Fee per student (e) = d/b. (iii) Average revenue = f/b. (iv) Surplus/Deficit = g-c. (v) The cost calculations are based on averages, while cost per student in different programmes varies across different programmes.  
Source: Based on data collected by COL.

Table 16 shows that when the total expenditure was compared with the total number of graduates (i.e., certificates issued) for the year 2020, it was found that the highest cost per graduate was for KSOU (INR 76,061) and the lowest was for YCMOU (INR 4,526); so of all the OUs, YCMOU was the most cost-efficient.

*Table 16. Cost per graduate/Cost efficiency, 2020 (in INR)*

OUs	Total Expenditure	Certificates Issued	Cost per Graduate
BAOU	168,585,793	12,323	13,681
BRAOU	558,700,000	18,543	30,130
IGNOU	7,000,000,000	237,844	29,431
KKHSOU	316,585,161	9,922	31,907
KSOU	676,102,016	8,889	76,061
OSOU	76,469,967	1,602	47,734
PSSOU	277,900,000	12,893	21,554
TNOU	131,879,458	7,774	16,964
UOU	376,007,954	11,284	33,322
YCMOU	918,766,530	203,004	4,526

Source: COL.

IGNOU has been receiving external funds (i.e., earmarked funds) ranging from INR 1,050 million to INR 1,350 million each year, 10% of which is income accrued to the university as institutional overhead and which is an additional source of non-government support to the university income. For 2018–19, the total income of IGNOU was INR 8,450 million (with internal resources generating up to 84%, and only 10% government support), while expenses were INR 7,470 million (with 45% establishment expenses and 30% academic expenses). These figures indicate that the establishment expenses need to be reduced in the future to enable more personalised e-teaching/learning and e-support, and to enhance quality.

## Quality

Rao (2020), in a significant reflective and forward-looking review, argued for ODL to move more from the brick-and-mortar structure to digitised structures and operation in the design, development, and delivery of distance and online learning programmes. Given the pedagogic perspective of blended learning for all modes of educational delivery, as specified in the NEP-2020, it is necessary for ODL institutions to move towards more use of technology for learning resources development, learner support services, and assessment and evaluation activities. “With a greater role to be played by the Open and Distance Learning (ODL) system, it is inevitable that the ODL system will have to be transformed to a learner-centric approach, coupled with technology-enabled online education system” (Rao, 2020, p. 82). He exemplifies the movement of IGNOU towards digital content, technology-mediated counselling, online admission, a variety of web resources, online assessment, digital libraries, professional development in these areas, and a gradual move to OER and virtual labs.

IGNOU has established procedures for the design, development, delivery and evaluation of ODL/online programmes. There are also standard statutory and operating procedures that faculty and academics must follow for course design, development, and delivery. While learner support practices follow established rules, the open university has recently formulated standard operating procedures for all aspects of learner support. The other aspects of quality implementation include the following:

- The introduction of a choice-based credit system in undergraduate programmes, which is being extended to other levels of programmes.
- Multidisciplinary programme design and offerings, provision for recognition of prior learning (RPL)/credit transfer, and options for multiple entry and exit for learners.
- Besides its own online programme platform (the Moodle LMS), it also offers online academic support to learners through WEAS (web-enabled academic support). In addition, IGNOU is the national co-ordinator for developing certificates and diplomas for national SWAYAM MOOCs (open to contributions from all HEIs in the country), and it has contributed over 120 SWAYAM MOOCs to the national online MOOC basket.
- Additional services include fee exemptions for disadvantaged students (scheduled caste, scheduled tribe, inmates of various jails); a 15% fee exemption for students who opt for online digital learning materials (rather than physical printed copies); learning support centres in remote and hilly areas (as well as jails and red-light areas); an alumni and innovation portal for connecting with alumni and facilitating start-ups and innovations; placement cells at headquarters and its regional centres; a digitised grievance redressal system; an enhanced ERP/cloud-based university management system through the national platform, called Samarth; specialised texts and audio for learners with special needs; and academic counselling in regional languages.

These and a few other initiatives and practices led IGNOU to secure the highest grade of A++ in its first assessment and accreditation, conducted by the statutory National Assessment and Accreditation Council (NAAC) of the UGC. This has led to the university attracting significant national and provincial government projects and tasks that align with its goal of developing employability, recognition and parity of esteem. The university has received union ministry agreement to use the skill development centres of industrial training institutes and polytechnics as its work/practice centres (functioning under the Ministry of Skill Development and Entrepreneurship). It also is mandated for the professional development of national and regional officials and functionaries involved in skilling and employability under this ministry, all over the country. Since the university has already been at the forefront of implementing various recommendations of the NEP-2020, it has been given the responsibility of training/developing the awareness of over 1.51 million university and college teachers in the country on various NEP-2020 recommendations and implementation strategies.

Though most open universities follow the established practice of programme design, development and delivery (through a three-tier model of HQ–RC–LSC), many dual-mode university DEIs follow the outsourcing model, with course development, course delivery and learner support activities outsourced to private agencies. Besides innovations in these areas by the national open university, as noted above, some SOUs have adopted innovations, too. For instance, KKHSOU's systematic process of developing SLMs, and NSOU's development of e-SLM and digital delivery (including the Moodle LMS, an OER repository, and a mobile app) have been reported as best practices in ODL (Panigrahi & Mishra, 2021). An example of best practice in the use of OER is that of UOU, which not only has an institutional OER policy but also has developed SLMs using OER. For instance, it reduced the institutional cost of course development by 97% and the faculty time to develop the courses in a programme from 550 days to 70 days (information provided in the online survey).

There are also other best practices in the use of ICT for e-learning and community radio for providing learner support. BAOU has been a pioneer among state open universities in using a variety of ICT tools and platforms for e-resources and e-support, including OMKAR (the Open Matrix Knowledge Advancement Resource), Swadhyay TV, Swadhyay Radio, Mobipedia, and ask-me kiosks. KKHSOU uses various ICT tools

for teaching-learning and learner support — a virtual learning environment to offer various ICT-enabled programmes (through the ePragya and eBidyā LMSs), mobile learning through the Lurningo app, and student SD (secure digital) cards for downloading course videos. Similarly, this state open university has also used community radio (Jnan Taranga) since 2010 for its learners and for community participation; this is now available through the Internet and can be accessed from anywhere in the globe (Panigrahi & Mishra, 2021).

As can be seen from Table 17, some distance education institutions follow multidisciplinary programme design, the development of skill-based courses, the use of OER and MOOCs, and the distribution of student satisfaction surveys as part of their curricular and instructional design practice. Many state open universities have their own institutional OER policy (UOU, OSOU and NSOU, among others). The OER policy of Odisha State Open University is well defined and robust, with a built-in quality assurance and review system, and is available through a single window of eGyanagar and the OSOU mobile app. At NSOU, the OER-based resources are available at the LMS, accessed online through a mobile application and offline using a micro-SD card (Panigrahi, 2018).

*Table 17. Institutions' responses on curriculum and instructional design*

Institution Name	Programmes	Courses	Multi-disciplinary	Skill-based	Discipline Area(s)	% Use of OER	Use of MOOCs	SS Survey	Survey Frequency
UPRTOU	127	940	Yes	Yes	No	Not at all	Yes	No	-
AMU	24	34	No	Yes	Art Comm	50–75%	No	Yes	After each semester
CDOE, Tezpur	7	7	No	No	NA	25–50%	No	Yes	Yearly
BRAOU		54	Yes	Yes		Up to 25%	No	Yes	Yearly

Some state open universities and DEIs used video lectures and YouTube, as well as online conferencing, during the pandemic. Most have internal quality assurance cells and alumni networks. A few conduct research in ODL. Some have research ethics committees, though without any provision for research incentives. BRAOU has a training institute and annual training plans (Table 18). The national open university not only conducts research in ODL and incentivises it through a best research paper award, but also has research ethics guidelines, along with training plans, including for research, and it follows up through alumni networks and tracer studies.

*Table 18. Institutions' responses on the use of media resources, training and research*

Institution Name	Alumni Network	Innovative Media	Media During Covid-19	Training Plan	Incentive for Research	Research in DE	Ethics Committee	Area of Research	Internal Quality Assurance
UPRTOU	Yes	Video lect.	Video lect.	No	No	Yes	No	Teacher	Yes
AMU	Yes	Online	Online	No	No	Yes	No	Quality	Yes
CDOE, Tezpur	Yes	Online	Online	No	No	No	Yes	-	Yes
BRAOU	Yes	YouTube	YouTube	Yes	No	Yes	Yes	Online	Yes

With technological advances, the availability of OER, and the development of platforms, especially by American universities and companies, MOOCs are becoming popular globally as well as in India. Technology deployment and use in ODL in India has evolved from the use of audio and video (plus radio and television), through teleconferencing, to the current web-based platforms and resources, including MOOCs. It is generally believed that technology use contributes to increasing not only access but also the quality of education and student learning. Most open universities and dual-mode DEIs are using these technologies at different scales for programme offerings and learner support. With the initiation of the national platform SWAYAM in 2014 by the Government of India, MOOCs are now being used by HEIs and their students to obtain up to 40% of their course credits from the national platform and transfer these credits to their course or programme of study to obtain a final degree. At present, the following MOOC platforms are being used for distance and online learning.

- SWAYAM (<https://swayam.gov.in>): This national platform has offered courses for schools, colleges and universities since 2016. The four-quadrant (Q) approach followed in its instructional design comprises Q1 e-content, Q2 video lectures, Q3 additional web resources, and Q4 self-assessment tests/quizzes (including discussion forums). Nine agencies are involved in co-ordinating the platform content nationally: IGNOU and NITTTR for certificate and diploma-level courses; NCERT and NIOS for school education; CEC (of UGC), AICTE, IIMB and NPTEL for undergraduate education; UGC, AICTE, NPTEL and IIMB for postgraduate education; and NPTEL (see below) for engineering education. Class Central notes ten million registered users for SWAYAM (the highest being for Coursera, at 45 million by 2021), and 154 universities have accepted credit transfer for courses offered through SWAYAM (PIB, 2021).
- NPTEL (<https://nptel.ac.in>): A consortium created by seven Indian Institutes of Technology (IITs) and the Indian Institute of Science in 2003, the National Programme on Technology Enhanced Learning is a sub-platform of SWAYAM that provides instructional videos in engineering and related subjects.
- mookIT (<https://www.mookit.in>): Created by IIT-Kanpur in 2012, it offers Arch4Cloud certification in collaboration with IIT-Ropar, available in six languages.
- IITBX (<https://www.iitbombayx.in>): Created by IIT-Bombay in 2014 by integrating Drupat 8 and Open edX, the platform provides for four types of MOOCs — eduMOOCs, skillMOOCs, teachMOOCs and lifeMOOCs.
- IIMBx (<https://www.iimb.ac.in/iimbx>): Created in 2014 and presented by the faculty of IIM-Bangalore, it offers MOOC courses in various areas of management.
- agMOOCs (<https://www.agmoocs.in>): Created in 2015 by a consortium comprising IIT-Kanpur, COL, IIM-Calcutta and the University of Agricultural Sciences (Raichur), the platform offers MOOCs in agricultural education to students, faculty and agri-practitioners, with joint certification by IIT-Kanpur and COL.
- Odisha State Open University, in collaboration with CEMCA, offers a MOOC for the orientation/training of academic counsellors for ODL and online learning.
- There is also a Vskills MOOC for banking and finance, with 2.5 million registered users.

A comparative study by Bordoloi et al. (2020) indicated that as of 2019, comparison of data from CEC, UGC and IGNOU showed course enrolment and certification status for postgraduate courses was highest, followed by undergraduate courses, and then certificate and diploma courses. Official data on the actual

number of students at various levels (from certificate to postgraduate) who have transferred their credits earned from SWAYAM to their respective institution for the awarding of certificates and degrees are difficult to access (though the percentage of students who registered for exams at SWAYAM varied from 1% to 3%).

As part of institutional and programme evaluation towards quality assurance, all the universities and colleges in the country are required to go through the NAAC accreditation process once every five years. Six open universities — BAOU, IGNOU, KKHSOU, NSOU, UPRTOU and YCMOU — which have already been accredited by NAAC, have in place the system and processes stipulated by various NAAC indicators (as is mandatory, their self-study and accreditation reports are available on their university websites). These open universities and those who await NAAC accreditation also work towards adhering to and confirming the following institutional programme indicators (including the institutional self-study report):

1. Curricular Aspects: curriculum planning, design and development; academic flexibility; curriculum enrichment; system of feedback.
2. Teaching–Learning and Evaluation: learner enrolment; learner diversity; teaching–learning process; profile and quality of teachers and academics; evaluation process and reforms; learner performance and learning outcome; learner satisfaction survey.
3. Research, Innovation and Extension: promotion of research and facilities; resource mobilisation for research; research publications and awards; consultancy; extension activities; collaboration.
4. Infrastructure and Learning Resources: physical facilities; IT infrastructure; learning resources.
5. Learner Support and Progression: learner support; learner progression; alumni engagement.
6. Governance, Leadership and Management: institutional vision and leadership; strategy development and deployment; faculty development/empowerment strategies; financial management and resource mobilisation; internal quality assurance system.
7. Institutional Values and Best Practices: institutional values and social responsibilities, best practices, institutional distinctiveness.
8. Overall SWOC analysis (strengths, weaknesses, opportunities, challenges).

The ODL institutions in India (especially the open universities) have provisions and practices for maintaining quality in programme/course design, development, delivery, evaluation, and associated administrative, leadership and governance mechanisms.

## Conclusion

It is worth emphasising that the ODL institutions, especially the open universities, have contributed significantly to the following reforms in HE (which have also been emphasised for the entire HE system across the country in the National Education Policy 2020): (i) needs analysis-based curriculum and instructional/learning design for programmes and courses across disciplines and levels (certificate, diploma, degree), (ii) provision of programmes and courses in diversified areas of study, combining traditional, niche-market, developmental, national human resource development, and continuing professional development programmes, as well as programmes in regional languages (the last not yet being viable in conventional colleges and universities), (iii) programmes directly addressing the needs of women, local communities, and disadvantaged sections of society, (iv) multidisciplinary programmes with multiple entry–exit options under a definite policy of credit transfer, and (v) the use of multiple media to scale for all programmes and courses.

These distinct achievements of the ODL system are now being valued and recommended for the entire HE system under the aegis of the NEP-2020.

In future, the open universities and DEIs have their respective institutional plans for expansion and innovation. IGNOU, for instance, plans to increase activities relating to OER and MOOCs, develop e-resources, establish an online system of continuous assessment and term-end examinations, upgrade its infrastructure for online teaching-learning, enhance e-support mechanisms, deploy data analytics for student tracking, offer vocational education through industry collaboration and the development of skill-based courses and programmes, recognise prior learning, establish skill LSCs and e-skill LSCs, and build quality assurance into various standard operating procedures with definitive institutional policies.



# Section 3:

## The Covid-19 Response and Innovations

Starting March 2020, Covid-19 compelled the country's entire education system (including conventional higher and professional education and the ODL system) to engage in compulsory remote teaching by using various interactive conferencing systems/platforms. In comparison with the conventional system, the ODL system was more acquainted with ICT-enabled teaching-learning and therefore quickly adapted to the new normal. During 2020–21, innovative measures were adopted in both systems, some of which are reported below and may facilitate the visualisation of TEL for ODL in the near future.

### Covid-19 and Conventional Higher Education

Like elsewhere in the world, the Covid-19 pandemic severely affected India and the Indian education system. This led to the closure of educational institutions, putting teachers and students into an unexpected and unfamiliar state of compulsory remote teaching-learning. This impacted about 247 million children in schools and about 28 million children in preschools and anganwadis (Sharma, 2021), as well as over 45 million students in higher education institutions. Alternative academic calendars, along with lockdowns, were issued from time to time. All HEIs switched to home teaching and learning, using preferred online platforms such as Google Meet, Microsoft Team, Zoom, Moodle Cloud, Skype, etc. in the absence of a dedicated, well-networked, and dynamic national online teaching-learning platform. Most institutions did not have an integrated (either proprietary or open-source) online learning platform/LMS of their own. Institutions left their respective departments/disciplines to explore their own strategies to deal with the situation and see to it that teaching-learning went on.

For a detailed discussion on various government and non-government initiatives for online teaching-learning and learner support during Covid-19, see Sharma (2021) and Singh et al. (2021). Notable among the initiatives were:

- DIKSHA (Digital Infrastructure for Knowledge Sharing)
- SWAYAM, Manodarpan (for psychological support)
- DTH Swayam Prabha (television channels)
- Gyan Darshan (an educational TV channel, which by government order was telecast by private DTH operators such as Tata Sky, Airtel, etc.)
- the Prime Minister's eVidya platform (to unify digital, online and on-air education efforts)
- Digital Daan (by the Digital Empowerment Foundation, to collect electronic devices such as smartphones, laptops, etc. and redistribute them to rural, tribal and marginalised areas/populations in 130 districts of 25 states across the country)
- 289 community radio stations

Some institutions opted for technological innovations, but most had to depend upon existing online conferencing platforms. Below are five cases of traditional campus-based HEIs engaging in innovative uses of a combination of technology and pedagogy for online teaching–learning during Covid-19.

***Design-Thinking-Based Curriculum and Blended Learning:*** Tezpur University (India) and the University of Dhaka (Bangladesh) embarked on a collaborative project to design and offer management programmes using curricula developed through a design-thinking approach. These were offered through a blended mode, combining F2F, interactive learning through the Moodle LMS, heutagogic videoconferencing, digital open books, and online examinations (Hasan et al., 2021). In this design approach, learners gained access and learned problem solving using e-learning tools and through learner–learner and learner–teacher interactions by the use of alternative prototypes.

***SWOC Analysis:*** At the University of Delhi, Dhawan (2020) undertook a SWOC analysis to facilitate technology-enabled pedagogic approaches for teachers for online teaching during the pandemic. The strengths included learner-centred, flexible customisation of procedures and processes to meet learner needs, a variety of tools for creating various learning environments in numerous disciplines, providing blended teaching–learning (combining lecture, audio, and video as well as synchronous and asynchronous interactions), and offering resilient solutions for any disruption during Covid-19. The weaknesses included technical difficulties, time and location flexibility, diversified capabilities and competencies, gender and language proficiency, and technology versus individual learning styles. Opportunities included remote working, the use of tools that facilitate higher-order learning (critical thinking, problem solving, meta-cognitive skills), and teacher application of pedagogic approaches matched with student needs and content needs. The challenges were many: moving from offline to online, developing digital content with student engagement, achieving quality e-learning content, covering institutional infrastructure costs and student costs, and ensuring digital literacy and digital equity. The author described the application of e-learning at DU during the pandemic, and various EdTech start-ups that began and/or expanded their operations during this period (including Byju’s, Adda247, ClassPlus, Jungroo Learning, Global Gyan, Vedantu, Unacademy, and Kahoot).

***Undergraduate Architecture Programme:*** In a nation-wide survey of architecture teachers during Covid-19, Varma and Jafri (2021) reported the responses of teachers from 82 institutions in 20 states. While 34% of the institutions had already been following online teaching, all of them shifted to online teaching during Covid-19, though 54% reported that doing so was not easy. Most used online resources from NPTEL and SWAYAM, as well as edX and Coursera. Though online teaching was effective for professional courses, it was most difficult for design studios (almost 41% found it ineffective). Most preferred blended teaching, especially for courses on design studio (on which architecture heavily depends). The respondents suggested teacher training, collaboration among clusters of educational institutions, more immersive teaching–learning processes, specialised architecture pedagogy, and, in the longer term, an interface between virtual and augmented reality for visualisation, representation and communication.

***Open-Book Examinations:*** Ashri and Sahoo (2021) reported an innovative method of using open-book examinations (OBEs) during Covid-19, adopted by the University of Delhi for semester examinations (75% of marks) and internal assessment (25%, further divided into class tests ten marks, assignments ten marks, and class attendance five marks). The authors conducted a SWOC analysis, based on which a comparative study was conducted using OBEs and CBEs (closed-book examinations) for 212 Bachelor of Commerce students. The results indicated the OBE students scored higher than the CBE students. The authors argued that an OBE allows students to be anxiety and stress free, use appropriate cognitive strategies, and prepare for real-world decision making, though the OBE approach was largely resisted by the teachers and student

unions. The authors recommended developing an appropriate infrastructure, revamping curricula for higher-order learning, upgrading the evaluation system, and training teachers for new TEL and evaluation methods.

**Teaching Laboratory Practices:** In a multi-county study of approaches taken by universities (including in India) to deliver teaching and laboratory practices during Covid-19, Gamage et al. (2020) reported that in the fields of engineering, science and technology, while it was easy to deal with experimental designs, data-recording and analysis skills, and developing technical judgment, it was very difficult to deal with familiarising students with equipment techniques and materials, and developing practical skills during online teaching. The authors recommended that institutions deal with student engagement in learning, multimedia use, scenario-based learning, and learning through digital games.

## Covid-19 and ODL

The Covid-19 pandemic compelled all the ODL institutions (open universities and dual-mode university DEIs) to engage in online teaching through the use of various online conferencing platforms (for teachers as well as academic counsellors in learning support centres/study centres). Only a few institutions (including IGNOU) used their existing online LMS (especially Moodle) and other media, including community radio stations. Discussed below are a few reported innovative strategies that were adopted by ODL institutions to deal with the sudden pivot to remote teaching. The ODL institutions did, however, have prior experience of teaching at a distance, combining self-learning modules, learning support-centre interactions, and technology-enabled teaching and learner support.

**National Open University:** What follows is a brief analysis of teaching–learning at IGNOU during Covid-19, based on reports by Mohapatra and Pant (2021), Srivastava et al. (2020), CIQA (2020) and Jena (2020). Following the lockdown in March 2020, IGNOU issued guidelines for all teachers, staff, academics and counsellors of learning support centres to conduct all academic, administrative and support activities from home, though the staff involved in examinations worked from the office again starting in July 2020. IGNOU continued to design and develop programmes and courses (12 new online programmes and 56 new MOOCs during the period); uploaded 750 courses comprising 2,800 modules to its eContent app; uploaded 350 courses comprising 1,100 modules to eGyankosh (the national digital resource repository); and continued online teaching through Moodle, Google Meet, and Zoom, two-way teleconferencing, interactive radio counselling, Gyandhara (Internet radio), Gyan Vani (radio), Swayam Prabha (television channels), MOOCs, and Facebook counselling.

Academic counselling from headquarters and LSCs took place online (and continues to date, with weekly sessions ranging in number from 107 to 3,082, including in various regional languages); online support was provided through WEAS and Twitter handles (e.g., computer and information science courses), emails, WhatsApp and Telegram App; projects and viva voce exams took place through videoconferencing; assignment submission and evaluation (above six million assignments) were undertaken through email and Google Forms (through an online portal for assignments at HQ and RCs); student grievance redressal was through iGRAM and the National Scholarship Portal, as well as SMS and WhatsApp messages. There was a switchover from the existing ERP to Samarth, the national portal of the Government of India, for internal office automation, and orientation programmes for counsellors, as well as workshops and extended contact programmes took place through videoconferencing. The regional centres were active in applying innovative measures relating to webinars; the use of mobile apps, WhatsApp groups, and e-programme planners; SMS alerts for registration, examinations, assignments, projects, internships, viva voce exams, and counselling; specially developed YouTube videos and shared links for student guidance; and the E-Shiksha (e-education) platform for all regional centres as a one-window solution for all types of learner support.

***Covid-19 and Nursing Programmes:*** In a study on 120 Diploma in Nursing Administration students and 30 Post-Basic Nursing students, Sood (2020) reported that even nursing students had shifted completely to online learning, using Google Drive, Google Classroom, and YouTube for sharing materials. Nursing teachers used WhatsApp, Facebook, Google Classroom, and Zoom, in that order, to conduct online sessions. Pedagogic communication focused primarily on online conferencing, PowerPoint presentations, email communication, and the sharing of audio books and YouTube videos. The author reported constraints on Internet access for larger files and larger groups, and suggested making assignments and formative assessment more practice oriented, modifying the pedagogy of theory and practical sessions, and engaging in significant teacher training on creatively and innovatively teaching nursing.

***Covid-19 and Social Media:*** In a qualitative study based on online interviews across three universities dealing with ODL, Dutta (2020) reported faculty use of Skype, YouTube, NPTEL videos, and Google Classroom to connect to and interact with students, with a twin focus on academic counselling and mental health counselling. The author suggested further research and development in online/blended pedagogy to enhance collaborative learning, the development of critical thinking skills, student motivation and engagement, and career-building skills.

***Online/Blended Learning and Academic Analytics:*** In a nation-wide comprehensive study on those who had attended a 2020 CEMCA workshop, Bordoloi, Das and Das (2021) used Google Forms to conduct an online survey of 79 teachers and 41 students (who used a mix of F2F and ODL modes), gathering data relating to various aspects of online teaching-learning during Covid-19 and analysing the findings with Google Analytics. The responding teachers and students had used, in order of preference, mobile apps, digital library, Web resources, learner portal, Internet radio, and the LMS. While most used smartphones and laptops, they also accessed and used online resources from SWAYAM (especially due to constraints relating to outside syllabus content and difficulty with credit transfer) and YouTube. e-SLM was preferred by most; over 50% liked online classes, 57% preferred OER, and 43% appreciated various MOOCs. Future learning preferences were blended learning (62.2%), online learning (22.7%) and F2F learning (15.1%). Poor connectivity and low ICT skills were the major constraints. Based on their research, the authors suggested the development of appropriate teaching-learning pedagogies, uniformity in course contents, the creation of an OER repository, an integrated national LMS, blended learning models, and capacity building for teachers and educators.



# Section 4:

## The Way Forward

The ODL institutions (and especially the open universities) in India have come a long way, with significant developments and contributions in programme and course offerings, curricular innovations, pedagogic applications, technology-enabled learning, and contributions to national and regional human resource and professional development needs, including leadership in continuing education and lifelong learning. It is time to reflect further on what more needs to be done, especially in the changing context of global developments and contemporary changes in higher education, including those suggested by the National Education Policy 2020. The ODL institutions also must facilitate the achievement of 50% GER in HE by 2035, as envisaged in the NEP-2020.

It should be emphasised that the mandate for India's ODL institutions has been to reach the unreached, provide needs-based education at learners' doorsteps, and address the needs of the disadvantaged. It is therefore arguable that comparing the ODL institutions with the country's best HEIs is neither desirable nor viable. However, the bottom line is that there should be some quality benchmarks with respect to consumers' actual utilisation of the education they gain, and the quality of the education processes. This, though, requires learners being able to undertake independent study, the deployment of appropriate and qualitative learning resources, learner engagement in individual and collaborative practice, and personalised scaffolding. These are very specific areas where the ODL institutions need to reflect further on their provision and performance. Over and above, as Rajagopalan (2007) remarked, in the absence of a vibrant student body (as in the case of campus-based institutions, which compels the administration to solve student problems), in ODL, in the absence of an immediate F2F student body, it is therefore the leadership that matters; and at times, in this respect, one is confronted with a lack of clarity, commitment, and considered decision making.

In ODL institutions in India, there has been considerable expansion of academic programmes and courses, but with scant consideration to skill development and employability, and a near absence of continuous programme evaluation, student satisfaction surveys and graduate tracer studies. Hence, there is scepticism about whether this huge repertoire of programmes replicates those that already exist in campus institutions, and whether they contribute to developing the knowledge and competencies required for individual and socio-economic development. As Rajagopalan's review (2007) noted, vocational education and training (VET) in agriculture, manufacturing, the service sector, and other areas attracts students with the possibility of employment. The SOUs and DEIs have been found lacking in addressing this, instead mostly duplicating campus-based programmes. That review and Prasad's (2018) pointed out that most DEIs continue to use ODL to create a surplus to meet recurring and developmental expenses of the campus university/college.

There is a clear distinction between the creation of quality resources and the deployment and needs-based consumption of those resources. Quite a few research studies, including those by Rajagopalan (2007), Prasad (2018) and Panda and Garg (2019), point out that the initial rigour brought to course writing and to audiovisual scripting and production has now been diluted in the name of TEL and the use of OER — suggesting that TEL, OER and MOOCs will need more rigour in terms of addressing the emerging pedagogies of TEL as well as discipline-specific pedagogies. Tremendous technology deployment has remained a showcase for provision (with the assumption that mere availability leads to use), when in reality,

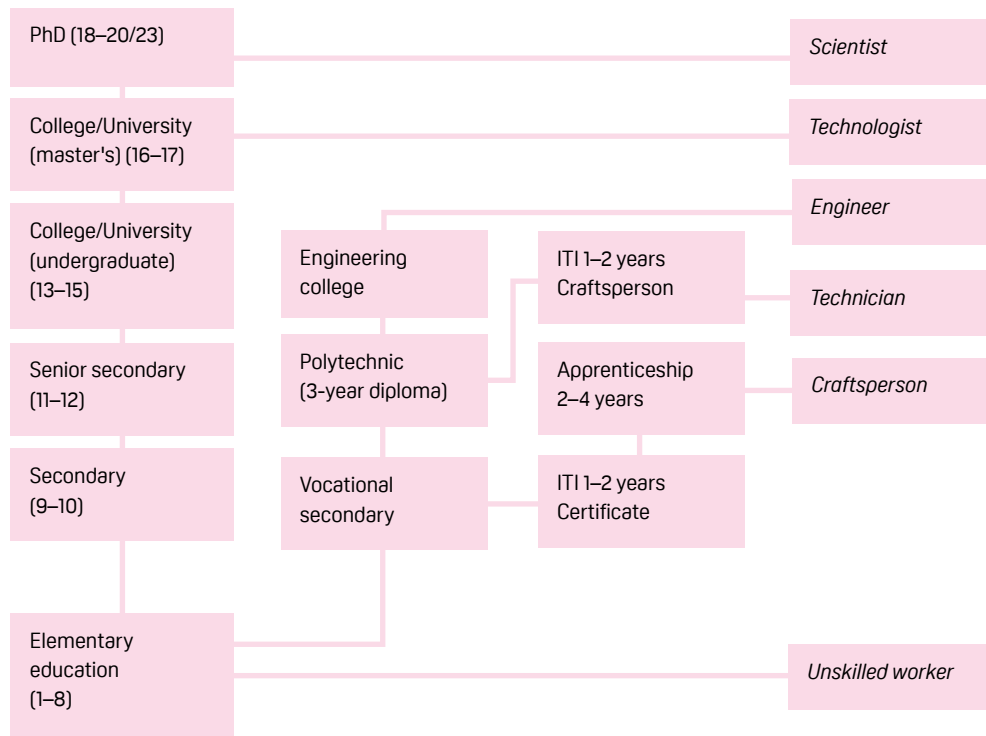
it may not become an essential and integrated ingredient for consumption. Even today, technology remains supplementary, without any integrated use in the curriculum by teachers and students; it is therefore not surprising that technology still stands at the periphery of ODL. As Prasad (2018) suggested, there is an urgent need to shift from the “learning resources–study centre support” model of ODL to a “networked resource-based–virtual collaborative” model that includes learner support. This is a requirement of the changing times and will give learners more flexibility as well as reduce institutional cost. It should also be considered that in a developing country like India, where most people live in rural areas, both models need to be strengthened within a viable economic framework (not necessarily at the cost of each other). This calls for blended teaching–learning, in which technology is integrated into the curriculum and is based on discipline-pedagogy and technology-pedagogy requirements. This is what the NEP-2020 advocates, and this is an area where the ODL institutions can lead the blended and flexible learning system within the entire higher education system.

Based on a critical review of state open universities in India, a recent study by CEMCA (2016) appropriately suggested that SOUs consider improvements in several areas: address targets that had been ignored; recognise prior learning; introduce new pedagogies; have economically relevant curricula; offer dynamic and 24/7 support services, digital resources and e-gateways; use MOOCs and OER; and have technology-driven governance.

Based on the foregoing discussions and analysis in the present report, the following priority recommendations are made for India’s various ODL institutions to consider with respect to their policy and practice.

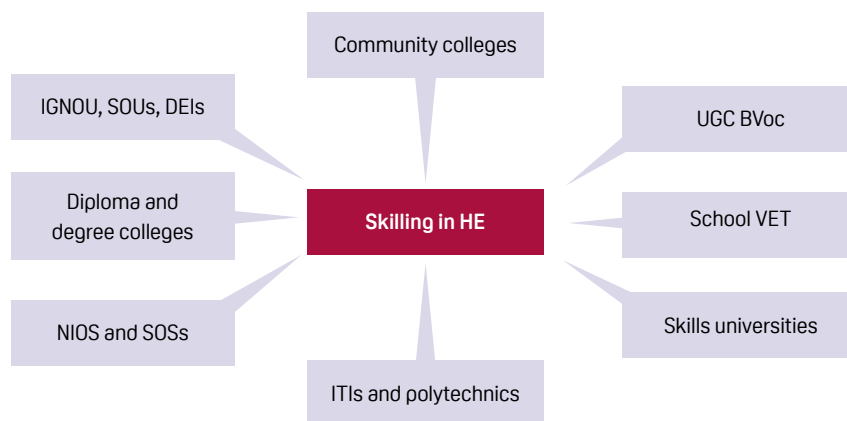
## Integrating Employability into the Curriculum

The issue of employability in education/higher education has been raised for quite some time, and as a result, the Ministry of Skill Development and Entrepreneurship (MoSDE) was established, the National Skill Development Policy of 2013 was renewed in 2015, the NSQF is being implemented, there are parallel streams of school and college vocational education, and a few skills universities have been established. The national VET architecture is depicted in Figure 4, and the various agencies/organisations involved in VET/skilling are shown in Figure 5. At present, the general HE and VET institutions do not have flexible mobility linkages, and general HE lacks any significant built-in skilling and employability in its curriculum (IIEP, 2021; Panda, 2019). It has often been argued that the country lacks: an integrated VET/skilling ecosystem in alignment with the NSQF (hence the upcoming National Higher Education Qualifications Framework, NHEQF); equivalency of skilling across general and professional education vis-à-vis various independent regulators (AICTE, the Medical Council of India, the Indian Nursing Council, etc.); and both horizontal and vertical mobility. The highest numbers of unemployed undergraduates need to be employed, and the higher education system needs to be made employable (Panda, 2019).



Note: Numbers in parentheses are ages.

*Figure 4. Institutional structure of VET.*



*Figure 5. Major institutional players in skilling in higher education.*

Any skilling and competency-building programme must conform to the NSQF (levels 1 to 10). The requirements/structure from certificate to doctoral degree (in any programme/course related to any vocation, job or profession) are as follows:

Level 4	Certificate, 6 months, 30 credits (after grade 12)
Level 5	Diploma, 1 year, 60 credits (after grade 12)
Level 6	Advanced diploma, 2 years, 120 credits (after diploma)
Level 7	BVoc, 3 years, 180 cumulative credits (after grade 12)
Level 8	PG diploma, 1 year, 60 credits (after BVoc)
Level 9	MVoc, 2 years, 120 credits (after BVoc)
Level 10	Research degree

Notes: BVoc = Bachelor of Vocational Education; MVoc = Master of Vocational Education; 1 credit = theory 15 hours, practicum 30 hours, experiential learning 40–45 hours, over a 12- to 14-week semester.

The National Council for Vocational Education and Training is developing a Unified Credit Framework across sectors to be implemented at all levels of education, including HE and ODL. The existing UGC Choice-Based Credit System (CBCS), implemented all over the country for undergraduate education (including ODL), is founded upon outcome-based learning and combines four categories of competencies: discipline competencies, interdisciplinary/multidisciplinary competencies, social and life-skills competencies (including 21<sup>st</sup>-century skills and happiness competencies), and job/vocation/profession competencies. The Ministry of Education has in place a skill matrix for community colleges, called SAMVAY (Skill Assessment Matrix for Vocational Advancement of Youth). As per the NSQF, higher education institutions need to follow the qualification packs prepared by the respective vocation Sector Skills Councils (SSCs), based on National Occupation Standards (which are competitive and equivalent globally), and at the end of graduation there is joint certification by the concerned SSC and HEI.

The NEP-2020 proposes to map the pathways between higher education and VET, as well as alignment between the NSQF and NHEQF such that the degrees from both pathways are standardised, with equivalency in learning outcomes.

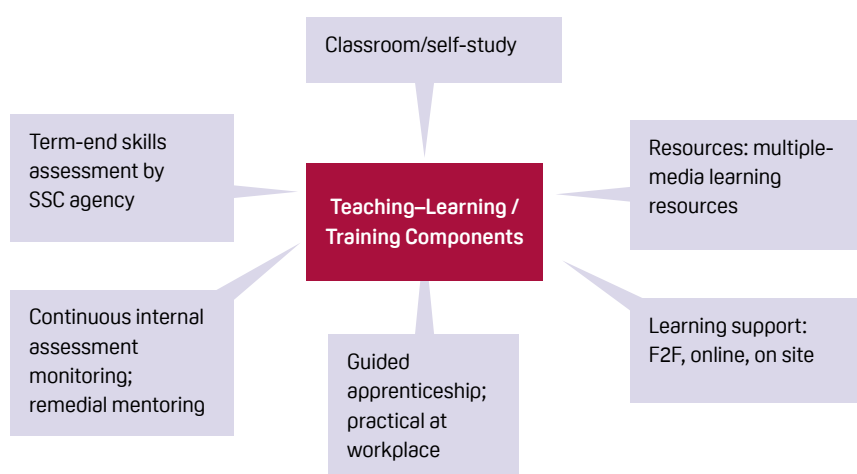
In the ODL sector, some of the open universities and dual-mode universities are offering a BVoc (Bachelor of Vocational Education) degree and have implemented the four-competency matrix of the CBCS. IGNOU has already collaborated with the MoSDE to use the existing skill centres of the Industrial Training Institutes (ITIs) and polytechnics to offer training for its skill-based courses. The university will accredit/recognise up to 50% of the skills acquired by ITI and polytechnic graduates, who can then earn the remaining 50% of their credits from IGNOU to obtain an undergraduate degree from the open university.

What ODL and all of Indian higher education require are to:

- revisit and adapt the NSQF
- develop curricula jointly with industries and employers
- gear curricula towards labour/job/vocation/profession market/needs in the economy
- help create a skill-training ecosystem/network (and significantly enhance its quality)
- train instructors/teachers and mentors for the new skill/competency ecosystem

- build skilling and employability (including the essential and holistic competencies of critical thinking, problem solving, emotional intelligence, professional ethics, communication, leadership, innovation and happiness) into skill-based courses in all of their programmes, within a framework of theory–practicum–internship and in conformity with the NSQF
- do this in a modular and flexible manner such that credit-based horizontal and vertical mobility can be implemented through the framework of multiple entry–exit, as stipulated in the NEP-2020.

The above should be based on national and regional skill mapping — in alignment with the NSQF and NHEQF, RPL, and the credit transfer framework — and on building skilling and employability as part of lifelong learning. The various teaching–learning/training components that could be considered in a holistic manner are given in Figure 6.



*Figure 6. Teaching–learning requirements for skilling/VET.*

### **Recommendations:**

The ODL institutions need to:

- i) identify and develop courses and programmes (and/or convert existing courses/programmes) in light of multidisciplinary and 21<sup>st</sup>-century competencies, with
  - a) learning outcomes that comply with the NSQF
  - b) flexibility for the recognition of prior learning
  - c) multiple entry–exit options
  - d) horizontal and vertical mobility to and from research, higher studies, and the world of work
  - e) vertical mobility between skill institutions and skill universities
- ii) develop curricula in collaboration with industries and employers

- iii) transact teaching–learning/training within a theory–practicum–internship framework, including
  - a) compulsory practicums taking place in identified skill centres and virtual skill centres,
  - b) certified trainers/instructors
  - c) consideration of VET pedagogy and micro-credentials
  - d) rigorous built-in monitoring
  
- iv) adopt blended learning strategies in judicious combinations of
  - a) self-study and F2F workshops
  - b) internships and online collaborative assignments/projects/engagement
  - c) employer/start-up/industry collaborations for graduate placement and self-entrepreneurship

## Rethinking Assessments

One of the weakest dimensions of quality in higher education has been the traditional student assessment strategies followed by HEIs. Various national policies (especially NPE-1986) issued guidelines on reforming the examination system, and “question banking” in various general and professional education areas was subsequently taken up as a priority by the Association of Indian Universities. Many universities implemented this innovation, though students derived the greatest benefit by using question banks to prepare for examinations.

A sizeable number of institutions (especially IITs and IIMs) have made significant moves towards more formative, constructivist, high-order cognitive and meta-cognitive assessment and evaluation systems. A 2019 UGC report (UGC, 2019) recorded that the examination pattern in higher education institutions tested “memory learning,” and it recommended a shift to considering assessment *of* and *for* higher-order learning. Most universities have moved to the semester system, with a combination of internal assessment (25–30% weight) and term-end examination (TEE, given 70–75% weight). The three-hour TEE usually tests students’ recall and strategic reproduction, without any display of critical thinking, problem solving, creativity or innovation. In this system, most of the universities, which also have an affiliated system of colleges, spend the bulk of their time conducting examinations for students of the affiliated colleges and struggle to declare results before the next academic year. The UGC report (2019) insisted on reforming the examination system for conventional and open universities so that it would assess students’ overall development “in terms of their critical thinking, problem solving ability, right application of knowledge, and maintain ethics [sic]” (p. 13).

One significant development is outcome-based learning, which most of the ODL institutions have followed in the design and development of self-learning materials, based on which assignments and projects are designed and evaluated, and which term-end examinations are conducted. In practice, however, exceptions notwithstanding, there is a large gap in congruence between learning outcomes, student engagement in activities and practice, and student (formative and summative) assessment of learning outcomes. The UGC proposes to design student assessment and evaluation as per the requirement of the discipline and the concepts taught, as follows:

- **Purpose:** Assessment and evaluation to be formative (generally, “assessment for learning,” or as NEP-2020 underlines, “assessment as learning”) as well as summative (assessment of learning).
- **Nature of Data:** Quantitative evaluation (for subject-based scholastic achievement) and qualitative evaluation (for non-scholastic aspects, including student attitude as well as moral and ethical development).
- **Domain:** Scholastic achievement (general academic practices, whether F2F or ODL) and non-scholastic achievement (co-curricular activities, emotional intelligence, community engagement, etc.).
- **Measurement Method:** Criterion-referenced assessment (relating to a standard/level of a learning outcome); norm-referenced assessment (in relation to a cohort of students); and self-referenced assessment (i.e., in relation to one’s earlier performance, to improve learning further).

The regulator suggests developing an assessment rubric that specifies learning outcomes and criteria, the various levels of performance, and the grading/scoring system. It also insists on shifting from an absolute grading system to a relative one, and conversion into grade-point average (GPA), which will facilitate credit transfer across Indian institutions (vis-à-vis the CBCS) and with overseas institutions; the NEP-2020 also strongly recommends this, under cross-border educational delivery. These changes will prepare the ground for technology-enabled on-demand examinations for blended and flexible learning, with options for multiple entry and exit.

The open universities and DEIs follow generally a 25–30% assignment and 70–75% TEE system. The targeted objectives are always to meet the deadline for turnaround of assignments with tutor comments and grades/scores, and to peacefully conduct term-end examinations (theory, practical, projects, etc.). Some institutions have made exceptions. For example, IGNOU provides for alternative assessment methods specific to discipline/programme requirements — such as logbooks for health sciences, field work for social work, workshops and extended contact programmes for teacher education and teacher professional development, internships for business administration and tourism, among others.

The changing curricular and pedagogic models for blended and online learning have induced significant changes in student assessment strategies. Assessment in online and blended learning should be authentic (drawing upon real-life experiences), engaging (tapping into learner prior experience and interests), responsive (providing formative feedback), as well as rigorous and valid (based on learning outcomes). The assessment rubric should relate to learning outcomes and corresponding learner activities (within the framework of “learning outcome, learner activity, learning assessment”). Various assessment strategies need to be considered, based on the appropriate learning theory or instructional design theory. For example, drawing upon Bloom’s taxonomy, the following strategies may be considered for ODL, online learning and blended learning:

- *Knowledge/information:* quizzes, flash cards, gaming, drag and drop
- *Understanding/comprehension:* animation, simulation, tutorials, open-ended essays
- *Application:* instructional gaming, case studies, interactive tutorials
- *Analysis, synthesis, creativity:* case studies, portfolios/e-portfolios, project-based learning, computer simulation, virtual labs, high-order multiple-choice questions, group work, peer assessment, discussion forums

Open-source social technologies and social networks may be used to ensure assessment of individual reflective learning (e.g., through blogs) and collaborative reflective learning (e.g., through wikis). The assessment rubric should establish a strong connection between formative and summative assessment (e.g., discussion through blogging and chat, leading to a case study and reflective journal, and then to a portfolio or project). An example that received a national award for best ICT application for teaching–learning was the Postgraduate Diploma in e-Learning, offered by IGNOU (Panda & Mythili, 2018), which followed a blended model with corresponding assessment strategies that are summarised in the box below. There are other best practices that ODL institutions may consider, in the context of discipline and programme/course requirements.

Blended Learning	Teaching and Learning	Assessment Strategies
Independent study of OER and other digital resources	Direct instruction: virtual class, presentation, OER, guidance	Computer-marked assignment
Discussion through Google Groups	Interaction (learner-to-learner): Google Groups with guided mentoring	Tutor-marked assignment
Weekly virtual class through Adobe Connect	Authentic tasks: Moodle project	Google Groups assessment
Discussion forum in the Moodle LMS	Reflection on practice: critical discussion	Discussion forum assessment
F2F compulsory workshop for hands-on audio, video, Moodle, blog, wiki	Learning nuances: F2F workshop on open-source technologies	WS assessment for audio, video, blog, wiki
Monthly presentations on progress and activities	Self-regulation: e-portfolio	Assessment of monthly presentations
Project report on design development, delivery and evaluation of module on Moodle	Online 24/7 technology support, and constructive engagement in authentic tasks	Individual and group projects E-portfolio Moodle project report

### Recommendations:

- i) The ODL, online, and blended learning programmes need to judiciously use developments in ICT for online/technology-enabled/technology-supported admission and student databases, linked to online formative assessment and summative evaluation. The current technology-enabled assessment needs to be fine-tuned and scaled up to a “dynamic and networked system of assessment” that is linked to learning and learner analytics.
- ii) Rethink the weight given to continuous assessment and term-end examinations by providing increased weight to formative/continuous assessment of various types and including authentic assessment in overall assessment practice suitable for a digital world.
- iii) Institutions need to go beyond the traditional assignment + TEE strategy to employ a variety of discipline/subject-specific assessment strategies, mostly spread across frequent formative assessment cycles, including question bank-based multiple-choice questions, cases, e-portfolios, simulations, role plays, and project-based learning, among others.

- iv) There must be linkage between (1) “learning outcomes, learner activities, assessment rubric” focused on discipline and interdisciplinary competencies, and (2) 21<sup>st</sup>-century skills, including critical thinking, real-life problem solving, innovative articulations and applications, and happiness life skills.
- v) The assessment needs to be more learning outcomes/competencies based for discipline-specific core understanding, multi- and interdisciplinary understanding, application in context, virtual applications and tests, and activities and assessment strategies that facilitate job and occupational competencies.

## Micro-credentials and Lifelong Learning

Of late, the DEIs have been moving towards “course-wise registration” (especially for skill-based courses), largely due to (i) the provision of credit transfer for courses through the national SWAYAM-MOOCs platform (UGC has allowed 40% credit transfer for higher education students taking courses from SWAYAM, towards their degree), and (ii) the requirement for multidisciplinary programmes and multiple entry–exit pathways for higher education students, as underlined in the NEP-2020. These initiatives towards a system of lifelong learning, as well as the need for additional skilling and the development of competencies for professional and/or job-market and lifestyle changes, require the use of micro-credentials.

Globalisation, digitalisation, and ongoing requirements for upskilling and reskilling necessitate that ODL institutions develop courses based on micro-credentials and educational badges. The Bologna Process of 2020 and the European Higher Education Area have already adopted these, as did UNESCO in 2021. Though micro-credentialling does not complement or provide alternative pathways to conventional course-based learning outcomes, it equips learners to acquire additional skills and competencies as part of lifelong learning and the continuing professional development and upskilling that are essential for new job markets and changing lifestyles. UNESCO (2021) calls for a human-centred approach to micro-credentials, which focuses on the four primary goals of equity, inclusion, quality, and lifelong learning.

Developments relating to Industry 4.0 (or the Fourth Industrial Revolution) — which focuses on cyber-physical systems, digital systems and related processes, including artificial intelligence, the Internet of Things, machine learning, cloud computing, and learning analytics, among others — necessitate further upskilling and training through micro-credentials. This movement has led further to the consideration of modularity, micro-degrees, interactive product development, blockchain, trademarking of degrees (e.g., the Udacity’s “nano degree,” edX’s “micro master’s degree”), and collaborative corporate learning (through micro-skill certification). Further, as Brown et al. (2021) remarked, “universities, quality assurance agencies, and government policy-makers are giving more serious attention to new recognition frameworks and digital models of higher education” (p. 229). Though HEIs — particularly their training divisions — have already moved to digital badges, micro-credentialling has gone beyond this to ensure that such micro-modules lead to prescribed institutional courses and provide credentials that are additional or supplementary to a certificate or degree. Micro-credentials can be bundled or unbundled, credit bearing or non-credit bearing.

COL has developed a short-course delivery platform, COL Commons, to offer needs-based courses to improve teaching and learning, and to supplement additional learning and skilling through micro-credentials. The courses can be completed within three to five hours of study, and partner institutions can contribute short courses to the platform and use such courses for their certificate/diploma/degree programmes. These courses are licensed as OER, and partner institutions are free to use the platform, offer joint certification, undertake collaborative course development, and develop credit-transfer policies. IGNOU has entered a MOU with COL to contribute to and use the platform for short courses

(micro-credential courses) offered towards further competency development and continuing professional development for its learners and graduates.

### Recommendations:

- i) The ODL institutions should move to develop short, micro-credentialled, competency-based courses, as determined by national and regional job-market and upskilling needs, to further enhance their students' and graduates' employability. They should build such micro-credentials and short courses into their usual credit-based course system in various disciplines of study. Institutions can join COL Commons to contribute to its basket and use it for their learners and graduates (with due regard for the respective regulators, the VET ecosystem, and the NSQF and NHEQF).
- ii) Develop a national framework for micro-credentials that is aligned to the NSQF and NHEQF.

## Digitalisation of the Sector (Infrastructure, Connectivity, Content, TEL)

There have been tremendous developments in ICT for education generally, and for higher education in particular, including (i) a dedicated national education satellite (EduSat, now decommissioned) hosted/uplinked from the IGNOU campus, and (ii) a national online courses/MOOCs platform (SWAYAM) hosted by the Government of India. During the past few years, the government has implemented several TEL initiatives for schools, higher education sectors, and training and development (MHRD, 2020b). The initiatives during the 2020–2022 Covid-19 period have been tremendous, undertaken by both the union government and the state/union territory governments, including fast-forwarding previous ICT initiatives and provisions. The state/union territory governments have undertaken several activities to address systemic resilience: digital classrooms, ICT labs, online admissions, e-content repositories, online interactive resources, educational radio and TV, Web TV, an e-learning portal, computer-based learning, mobile applications in teaching–learning, and digital initiatives in examinations.

The national digital platform DIKSHA (Digital Infrastructure for Knowledge Sharing), initiated in 2017, has been used extensively for digital content sharing and interactive teaching–learning through mobile, tablet, PC, smart board, and television interfaces, including for lesson planning, content generation and dissemination, practical sessions and homework, assignments, question banks, quizzes, and teacher training. DIKSHA also hosts NISHTHA (the National Initiative for School Heads' and Teachers' Holistic Advancement) and VidyaDaan, a national program for individuals and organisations to contribute “e-learning resources in the education domain to ensure that quality learning continues for learners across India” (see <https://vdi.diksha.gov.in>). Besides these, the ePathshala also provides e-content for school students, teachers, parents, and teacher educators (<https://epathshala.nic.in/>).

For higher education and ODL institutions, there are provisions for and extensive use of:

- Gyandarshan TV channel
- Gyan Vani radio channel
- 32 TV channels from Swayam Prabha (five channels for education)

- the IGNOU-e-Gyankosh (a repository of online digital self-learning print, audio and video curriculum-based materials)
- e-PG Pathshala from UGC
- INFLIBNET (a digital content repository for various HE disciplines)
- NPTEL engineering and technology videos, available at SWAYAM (a four-quadrant national online course/MOOC platform, comprising digital content, online videos, additional web resources, and self-assessment quizzes for each course)

While only a few open universities have their own OER policy (and therefore possibly use OER in their courses and programmes), many open universities and DEIs have contributed online courses to the national SWAYAM basket, though only a few have been using such courses towards credit transfer for their own degrees. Besides radio and TV broadcasts, some ODL institutions have used local community radio for short-range broadcasting and interaction with their students. Further, a few ODL institutions have their own online LMS, including Moodle, for online programme delivery and/or online learner support.

IGNOU provides:

- e-SLM (print in pdf, audio, video) through its e-Gyankosh open repository
- an e-content app
- QR code-based course access
- synchronous and asynchronous television broadcasting and interaction through the 24/7 Gyan Darshan channel and five channels of Swayam Prabha TV
- regional interactive FM radio stations
- synchronous and asynchronous radio through the Gyan Vani radio channel and Gyandhara interactive Internet-based radio
- online learner support through a WEAS platform
- course content offerings through SWAYAM

Only a few institutions have a reasonable amount of standard infrastructure in place (in comparison to conventional universities generally). For instance, IGNOU has a centralised student registration system, computer and Wi-Fi facilities, and facilities for online education, including 1000 Mbps connectivity from the National Knowledge Network, 1 GBPS network connectivity, a multimedia production lab, and a heating, ventilation and air conditioning facility for servers and data.

In the ODL system generally, the provision of infrastructure is wanting, and there is a need for a national one-window institutional system for TEL and learner support (for individual institutions to connect to, customise, and network with). This is also applicable to an institutional online platform. In spite of tremendous development and deployment of technology, its integration for teaching–learning (as part of programme and course design) has remained either supplementary or complementary (without “integrated” technology use). Connectivity has been a major issue, in spite of significant infrastructure investment by central and state governments and national private players. This is evident from the case studies from the Covid-19 period presented in a preceding section.

The quality of digital content is another issue. Quite a few open universities and DEIs offer online programmes through their own LMS (generally Moodle). While the regulator, UGC, has approved only two “eligible” HEIs and 56 “entitled” HEIs to offer online programmes, Class Central (a multinational private online learning portal) lists above 375 degrees offered by Indian universities through its collaboration/ platform. Though in 2020, UGC had approved only 37 programmes to be offered by seven HEIs, the number increased to 328 programmes offered by 56 HEIs (due to exemption for HEIs with an A+ NAAC score and/or 100 top-ranking HEIs in the National Institutional Ranking Framework to offer online programmes without UGC-DEB approval). IGNOU — which established the Distance Education Council as the national ODL regulator, now transferred to UGC as the Distance Education Bureau — has been exempted by UGC from requiring prior approval before offering ODL and online programmes. Many IITs and IIMs and some private universities have been offering online degree programmes in a hybrid mode. India presents a robust ecosystem for digital education in the country, with national open schools, a national open university, several state open universities, multiple national digital platforms for learning, a MOOC platform, OER platforms, direct-to-home TV channels, community radio stations, and use of video, animation and virtual labs. However, it has not been possible to access authentic data on how many institutions and students have actually successfully completed SWAYAM courses and have transferred credits towards their degrees, or what their learning experiences have been in comparison to their institutional learning.

### **Recommendations:**

- i) Introduce a national cloud platform for higher education institutions, where institutions can host their LMS and open access repository. A federated search portal for open access resources may also be commissioned.
- ii) Set up a national digital university that provides quality blended and online learning opportunities using:
  - flexibility in combining F2F classroom teaching/counselling with online learner-learner collaboration
  - technology/conferencing integration for improved curriculum design, application of latest pedagogical practices in TEL – learner engagement in authentic and augmented activities/tasks – application of virtual labs/augmented reality/virtual internships
  - online authentic formative and summative assessment
- iii) Encourage higher education institutions to set up LMS and open access repositories for supporting blended teaching and learning.
- iv) Promote zero-rating of access to educational websites and platforms for students in higher education or provide subsidised access to data for students in distance and online learning by making arrangements with telecom service providers.
- v) Develop a National Policy on Blended Learning (as visualised in the NEP-2020 and based on the blended learning guidelines of UGC) that provides for flexible but integrated F2F learning, resource-based self-learning, and online collaborative learning in a virtual one-window environment with built-in learner/learning analytics, and that judiciously combines theory, practicums and internships.

- vi) Consider having an integrated but flexible network/platform that includes or makes provision for:
  - digitised curriculum and digital content (modular, credit-based, level-based, learning outcome-based) available in different languages and formats (pdf, Word, HTML, MP4, Braille, H5P and ePub)
  - different technology outlets and interfaces for SWAYAM, Swayam Prabha, eVidya, DIKSHA, e-PG Pathshala, e-Gyankosh and NPTEL, linked to each other in a structured curriculum-based and outcome-based framework
  - activities, context engagements, e-portfolios, internships, virtual labs, augmented reality, and micro-credentials from various disciplines built into the teaching-learning LMS.
- vii) Consider the platform and associated pedagogies needed to provide for: practical (non-theoretical) content; collaborative and interactive activities; and more engaging pedagogy, such as PBL, case-based learning, portfolio-based learning, and internship-based learning. The content design and delivery should be such that they are compatible with smartphones and other mobile devices.

## Targeting Women and Persons with Disabilities

As the foregoing analysis has indicated, women's enrolment in higher education stands at 49%, and in distance learning it stands at about 41–45%, with wide variation across institutions and across programmes within an institution. Further, the number of persons with disabilities and/or special education needs is abysmally low, which demands special attention. While the ODL institutions need to provide more education and training opportunities for women and persons with various disabilities, the focus of access should be shifted to the rural, tribal areas and low-literacy districts in various states. Education and training programmes and courses must focus on needs, competencies (including digital literacy) and local/regional requirements for employment.

Some of the women's universities, such as SNTU and Mother Teresa Women's University, offer ODL programmes that cover general, technical and job-oriented subjects, especially at the certificate and diploma levels. IGNOU's Women Empowerment Project stresses organising self-help groups (SHGs) in its certificate programme on Empowering Women Through Self-Help Groups, and addresses the need to develop master trainers for the SHGs through its 150 programme centres across the country. This also empowers participants as change agents in community development, and in the process, the learners also are trained in running micro-enterprises. Similarly, BRAOU's Centre for Women's Development focuses on developing women-related academic programmes. TNOU's vocational education diploma programmes provide opportunities for women in the areas of health assistant, ECCE, fashion design and garment making, desktop publishing, medical lab technology, and accounting software. Various vocational training centres and community colleges also offer TNOU vocational education programmes for their women learners.

Educational programmes boost employability by enhancing skills and competencies through content diversity, and by offering understanding, skills, and attributes that help graduates to gain employment and success in their occupations, communities and lives, and to make decisions for both horizontal and vertical career mobility. Programmes should also build:

- foundational technology skills and communication skills
- cognitive skills for planning, organising, problem solving and critical thinking
- community skills for interpersonal relations and citizenship skills
- work skills relating to enterprise, innovation, vocation/job-specific demands, and leadership

Academic programmes need to be diversified to meet the needs of women in specific localities and communities, with provision for specialised learner support and built-in contextual experiences that take gender into consideration. There should be flexibility in course offerings, progression (including RPL and credit accumulation and transfer, and multiple entry–exit options). Programme design may consider a combination of needs, pedagogic innovations, appropriate ICT, flexible learning pathways, and engagement in the world of work, with options for career planning guidance.

Programmes for PWD and persons with special educational needs must have:

- institutional teaching–learning and support policies specific to them
- course designs that ensure materials are accessible, with special equipment and software
- Braille print materials and keyboards, as well as audio recordings, e-text and video-to-text
- online materials and interactions, with disability-friendly websites and online transcription of both synchronous and asynchronous interactions
- conferencing with descriptions on the screen, descriptive narrations, sign language interpretations, and text telephony
- the use of email and phone for personalised support

Online learning (and, to an extent, Universal Design for Learning) best suits disabled students, largely because it requires little physical movement. Assistive technologies need to be built into such a system of learning. Further, besides considering online learning competencies, the courses should build in competencies and vocational skills specific to the particular type of disability. This boosts learners' self-efficacy and self-esteem and minimises the discouragement that can be associated with F2F interaction.

### **Recommendations:**

- i) Design programmes and courses targeting rural and tribal women in particular, and PWD generally, focusing on individual needs, diverse experiences, community needs, and skill and job needs.
- ii) Make learning resources available in regional languages (and interactions available in local dialects).
- iii) The courses must be based on local and professional needs, especially targeting agriculture, micro-enterprises, and sustainable development, and with formative/continuing support that takes into consideration learners' engagements at home and at work for their families and livelihoods. They must also provide ample guidance on skilling and employability in personal, home and job contexts.
- iv) The Government of India's Higher Education for Persons with Special Needs scheme requires further reinforcement, as does the PWD Act of 2016, in terms of curriculum development, learning resources, teaching–learning and learner support, monitoring and evaluation. In addition, assistive technologies need to be made more accessible.

In summary, based on the detailed analysis of the current status of ODL in India, we recommend the following:

For government:

- Create a facility for a national cloud hosting platform for higher education institutions, including ODL institutions, to host their LMS and open repositories.
- Provide guidelines and facilitate zero-rating of educational platforms.
- Develop national policies for blended learning and micro-credentials.
- Focus on quality assurance of learning opportunities offered on digital platforms.

For ODL institutions:

- Focus on curriculum review and the development of courses and programmes leading to employability of graduates.
- Strengthen ODL courses by using appropriate digital tools and pedagogical approaches.
- Ensure equity and inclusion in educational programmes by developing targeted courses for women, PWDs and people in rural areas.
- Encourage innovations in the use of digital technologies for teaching and learning by adopting open educational practices, micro-credentials and virtual labs.

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# Appendix: Questionnaire

## Institution

Name, Address, Contact Person/Nodal Person, Year of Establishment, Year of Offer of Programmes.

## Policies

Does your institution have statutorily approved separate policies for crucial activities? (Complete the table below):

POLICIES	YEAR FORMULATED	YEAR PUT INTO PRACTICE
Programme design and development policy		
Technology enabled learning policy		
OER policy		
Research policy		
Training/HRD and CPD policy		
Quality assurance policy		
IPR/Copyright/Plagiarism policy		

## Access and Equity

Please provide decadal student enrolment and completion data for the past ten years.

YEAR	ENROLMENT				TOTAL	COMPLETED (TOTAL AND %)	DROPPED OUT (TOTAL AND %)
	CERTIFICATE	DIPLOMA/ PGDS	DEGREE (UG)	DEGREE (PG)			
2018–19							
2019–20							

Gender and disadvantaged in decadal student enrolment.

YEAR	TOTAL ENROLMENT	MALE (TOTAL & %)	FEMALE (TOTAL & %)	RURAL (TOTAL & %)	URBAN (TOTAL & %)	LOWER CASTE (TOTAL & %)	TRIBAL (TOTAL & %)	DISABLED (TOTAL & %)
2018–19								
2019–20								

Purposed institutional strategies to enhance:

- Gross enrolment ratio:
- Access for disadvantaged sections of society (women, scheduled castes, scheduled tribes, OBCs, disabled, rural people, etc.):

### Programmes and Courses/Resources

Total programmes (      ), Certificate (      ), Diploma (      ), PG Diploma (      ),  
UG Degree (      ), PG Degree (      ), Doctoral (      ), Non Credit (      ).

Total number of courses: \_\_\_\_\_

Do you have an established programme/course development policy in place (other than statutory procedures)? Yes/No

Are programmes:

- Credit based? (1 credit =      student hours)
- Modular? Yes/No (Number =      )
- Multidisciplinary? Yes/No (Number =      )
- Interdisciplinary? Yes/No (Number =      )
- Skill based/oriented? Yes/No (Number =      )

Are courses:

- Skill based? Yes/No (Number of skill-based courses =      )

What is the nature of media integration in programmes and courses? Supplementary / Complementary / Integrated

What media components (including print, self-learning materials, and counselling) are compulsory in defining course credits?

What other media act as supplementary in the courses?

Is there any use of OER in the courses, based on OER policy? Yes/No. (% of OER use in courses: \_\_\_\_\_)

Is there any use of MOOCs? Yes/No

Do the faculty develop MOOCs for sharing with others? Yes/ No (% of courses in MOOCs \_\_\_\_\_)

Do you have a “programme evaluation” policy in your institution? Yes/No. Duration of years for each programme being evaluated \_\_\_\_\_.

Do you have a programme/course revision policy? Yes/No What factors generally contribute to course revision?

What are the general strategies (rubric) for student assessment?

- Formative: (Weightage =      ).

- Summative (Weightage = \_\_\_\_\_).

a) No. of programmes offered through cross border delivery: \_\_\_\_\_

b) No. of overseas centres: \_\_\_\_\_ No. of countries: \_\_\_\_\_ No. of students: \_\_\_\_\_

Is there any credit transfer policy for programmes/courses? Yes / No

(Please briefly outline that):

Is there any accreditation/recognition of prior learning policy: Yes/No

(Please briefly outline that):

### **Learner/Learning Support**

What is the general learner support model implemented in your institution?

- Learner support network: \_\_\_\_\_
- Technologies for learner support: \_\_\_\_\_
- % of total programme/course credits devoted to learner support: \_\_\_\_\_
- Counselling compulsory or optional: \_\_\_\_\_
- % of total budget/expenditure devoted to learner support: \_\_\_\_\_

What are the mechanisms for obtaining feedback on learner support?

a) \_\_\_\_\_

b) \_\_\_\_\_

Do you conduct any student satisfaction survey? Yes/No

- How often?
- For the whole institution or programme-wise or course-wise?
- How is the student satisfaction feedback used by your institution, faculty, and staff?

a) Institution:

b) Faculty:

c) Staff:

How are students provided with the following?

a) Academic support:

b) Information support:

c) Administrative support:

d) Personal support:

Is there a student alumni network? Yes/No

- How are such networks used by your institution and faculty?

## Media and Technology

List the varieties of media and technology used and the purposes of use.

MEDIA/TECHNOLOGY	PURPOSE OF/TASKS FOR USE

Is there any use of MOOCs in teaching-learning and training?

TASKS	TOTAL NUMBER	PURPOSE/TARGET OF USE
MOOCs developed by faculty		
MOOCs adopted by faculty		

Are online programmes offered?

LEVEL	NUMBER	DISCIPLINE AREA(S)
Certificate		
Diploma/PG diploma		
Degree UG		
Degree PG		
Non-credit		
Any blended programme		

## Innovative Practices during Covid-19

What mechanisms/strategies did you follow to address distance teaching and learning during the Covid-19 crisis?

STRATEGIES	HOW WAS THIS CARRIED OUT?

Was there any distinct/unique/innovative strategy that you adopted during Covid-19 that you would like other institutions to examine and adopt?

## Training and Professional Development

Do you have a training and/or continuing professional development policy? Yes/No

Is there any annual training plan declared at the beginning of the year/session? Yes/No

Through what mechanisms/strategies are these policies implemented?

How often does a faculty or staff member go through training programmes?

Is training counted towards job performance review? Yes/No

Is there any incentive/reward given to training/CPD completion? Yes/No. Elaborate:

What other national and international professional development opportunities are provided to your faculty and staff?

a)

b)

Is training considered a one-time or time-bound activity, or is there any provision for a lifelong professional learning trajectory? Please explain:

Are faculty and staff encouraged to go through other training/CPD MOOCs and courses? Yes/No. How are these incentivized?

How are such course completions utilized by the institution and by the faculty themselves?

Percentage of institutional budget spent on training/CPD:

## Research and Development

Do you have an institutional research policy? Yes/ No

Doctoral research policy? Yes/No

% of budget devoted to research in your institution:

Discipline research \_\_\_\_\_ ; DE research \_\_\_\_\_

What is the impact factor of your institution with respect to research?

In what way is institutional research used for institutional decision making?

Are faculty encouraged to do research in distance education and research in discipline pedagogy? Yes/No  
Explain briefly:

Is there any reward system/provision for research in DE? Yes/No. In discipline areas? Yes/No

What is the total number of publications by faculty (year-wise for the last five years)?

DE publications \_\_\_\_\_ Discipline publications \_\_\_\_\_ Publications %  
per faculty \_\_\_\_\_ Citation index per faculty \_\_\_\_\_

Total number of research degree programmes offered \_\_\_\_\_.

Is there any institutional Research Ethics Committee to examine research proposals? Yes/No

What are the priority areas of research identified and approved by your institution?

a)

b)

### Quality Assurance

Do you have an internal quality assurance system/mechanism? Yes/No. QA unit/centre? Yes/No

Do you have well laid out QA procedures/policies for:

- Programme design and development? Yes/No
- Programme delivery? Yes/No
- Learner support services? Yes/No
- Learning resources (print and digital)? Yes/No
- Human resources (development)? Yes/No
- Administrative procedures? Yes/No
- Financial aspects (income, expenditure)? Yes/No
- Teaching-learning processes? Yes/No

(Please provide a copy of or web link to those policies.)

Do you have a comprehensive and integrated student database? Yes/No. Alumni database? Yes/No

Automated system of linking database to students (interaction)? Yes/No

Is your institution accredited/quality assured by international organizations like: ICDE (Y/N), COL (Y/N), AAOU (Y/N), ACDE (Y/N), ACOE (Y/N), any other \_\_\_\_\_

Is your institution a member of any of the above? \_\_\_\_\_

Which established “quality assurance in DE/OLL” model(s) do your institution and faculty adopt/follow?

Do you have any well laid out quality standards/benchmarking indicators that are put into practice for the following?

- a) Services: staff support (Y/N), student support (Y/N)
- b) Products: curriculum design (Y/N), course design (Y/N), course delivery (Y/N)
- c) Management: strategic planning and development (Y/N)

Is your institution certified/accredited by:

- ISO 9000: \_\_\_\_\_
- International agency: \_\_\_\_\_

- Other overseas national agency: \_\_\_\_\_

To what extent does your institution use greater openness through: open educational resources, open pedagogy, and open educational practices? Explain:

Do you have specific well laid out quality benchmarks for designing, implementing and evaluating online learning programmes/courses? Y/N. Explain briefly:

### Infrastructure, Leadership & Governance

Do you have the following?

- Digital resources repository. Yes/No  
(Open to public? Yes/No)  
(Is the digital resources repository declared an OER? Yes/No)

Total number of IT labs in the institution:

Do you have a digital resource library? Yes/No

- (Is it accessible to faculty? Yes/No. To students? Yes/No)

Do you have costing models and financial efficiency procedures in place? Yes/No

To what extent have you been able to mobilize resources from:

- Government: \_\_\_\_\_
- Corporate social responsibility (CSR): \_\_\_\_\_
- Other national agencies: \_\_\_\_\_
- International agencies: \_\_\_\_\_

### Faculty and Staff

a) Total no. of faculty/teachers: \_\_\_\_\_  
Vacant positions: \_\_\_\_\_

- Faculty–student ratio:

b) Total staff (non teaching, technical, professional): \_\_\_\_\_

- Vacant positions: \_\_\_\_\_

c) Total number of counsellors: \_\_\_\_\_

- Counsellor–student ratio: \_\_\_\_\_

What is the extent of faculty access to PCs/laptops and the Internet?

Full access/Large extent/Moderate extent/Low access

Do you have national and international collaborations for academic and research purposes? Yes/No.

Please mention:

- Academic collaborations:
- Research collaborations:

What is the total worth (in USD) of annual external research funding to your institution/faculty?

What would you propose that other institutions could learn from your ODL good practices?

What are your priority areas for the future development and operation of your ODL institution?

### INSTITUTIONAL COST ANALYSIS FRAMEWORK FOR OPEN UNIVERSITIES/DTIs

1. Institution Name
2. Address
3. Year of Establishment
4. Number of Teaching Staff
5. Number of Non teaching Staff
6. Number of Other Staff
7. Income (in INR)

	SOURCE	2019	2020	
1.		Government grants		
2.		Tuition fees		
3.		Sale of study materials		
4.		Bank interest, donations, etc.		
5.		Others (please specify)		

### 8. Expenditure

YEAR	SALARIES OF FACULTY	SALARIES OF NON-TEACHING STAFF	SLM DEVELOPMENT	SSS*	OVERHEAD	TOTAL INSTITUTION COSTS
2019–20						
2020–21						

\*SSS = student support services

## 9. Programme-wise Expenditure

	2019	2020
Certificate programmes		
a) Salaries of teaching staff		
b) Salaries of non-teaching/other staff		
c) Materials development and production		
d) Student support services		
e) Institutional overheads		
A. Total Diploma Programmes		
PG Diploma Programmes		
a) Salaries of teaching staff		
b) Salaries of non-teaching/other staff		
c) Materials development and production		
d) Student support services		
e) Institutional overheads		
B. Total PG Diploma Programmes		
a) Salaries of teaching staff		
b) Salaries of non-teaching/other staff		
c) Materials development and production		
d) Student support services		
e) Institutional overheads		
C. Total Degree Programmes		
PG Programmes		
a) Salaries of teaching staff		
b) Salaries of non-teaching/other staff		
c) Materials development and production		
d) Student support services		
e) Institutional overheads		
D. Total PG Programmes		
Grand Total (A+B+C+D)		









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