

Topic

Online Education for workforce skilling in Developing Countries: Insights from India and an analysis of responses from Online Learners.

1. Introduction:

Technological advancement including AI are leading to the changing nature of work and disruptions brought about by Climate change and conflict are leaving affected populations with broken learning cycles and interrupted access to education. In addition to this, Geopolitical Factors like tariffs are destabilizing the world markets which will result in countries reshaping their manufacturing and trade priorities, thus changing the nature of skills and competencies required from a workforce.

In the wake of these recent global disruptions, a need is felt for resilient mode of education which can withstand disruptions, are affordable and can be accessed at scale without the constraint of time and location.

Online education has emerged as an important scalable means for workforce development, particularly in the developing nations of the Global South where traditional training opportunities may not meet the urgent demand for skills. Lower costs, wider and immediate reach without geographical barriers and without time lag makes quality Online Education a choice for countries, especially those with lower levels of economic development, large populations and socio-economic challenges.

In India, a country with a vast young population and significant skills gaps, the importance of Online Education has stemmed from the understanding that it has to focus on capacity development of its population if India has to continue being a fast-growing economy. India stands out among other nations of the world in terms of opportunities as well as challenges and a study of its path taken towards adopting Online mode would be of interest to other developing, underdeveloped and least developed countries. This paper provides insights from India and presents research where learner engagement and feedback is analysed with the objective of strengthening Online Education Institutional Processes for improving ease of learning online.

The research analyses the challenges faced by online learners and attempts to identify the institutional alignment required to respond to learner needs. The research and analysis can be applied to similar institutions in other developing countries who can draw lessons from the broader Global South context.

2. Background and context:

2.1 Recognising the challenge.

Recognising the major drivers expected to transform the global labour market by 2030, countries and institutions the world over have reset their focus and priorities. (World Economic Forum, 2025, Jan 7). As Skill Gaps are widening and threatening business transformation worldwide, shortages are reshaping the workforce. <https://www.weforum.org/centres/centre-for-the-new-economy-and-society/> Hence “Employability of people is to be protected, not their jobs, because the job will change, but employability will be the key” (Adecco’s Christophe Catoir 2025).

It is estimated that presently 267 million young people need access to education and skill development for sustainable livelihood (UNESCO strategy 2022–2029). To address global food security challenges, the importance of training initiatives to ensure employment and livelihood options in the future is being emphasised (FAO, 2025, Feb 28).

Hence there is an urgent need to prioritise access to Education and Skill training for resilience to changing nature of work and recovery from Climate and conflict disasters

2.2 Online mode for addressing the need for Education and skill training at scale.

The efficacy of Online Learning, (MOOCs, OERs etc) for providing access to quality education at scale across geographies is well documented. Online technologies for education and skilling are presently being adopted and refined the world over. Among the many advances taking place, more recent ones are addressing Policy guidelines on integrating Artificial Intelligence (AI) in teaching and learning in the higher education institutions (COL 2025, May 2nd) and Online course creators in universities are using Course Review Scorecards to design high-quality content (Online Learning Consortium 2025, March 6). Targeted micro-credentials are being recommended by 96% employers and more students are choosing programmes offering microcredentials. (Coursera Microcredentials report 2025). Quality assurance and regulation issues of Microcredentials are being addressed. (UNESCO IESALC 2025, May 27), and a Commonwealth Credit Transfer Framework is being developed by COL to support member governments in enhancing credit transfer mechanisms (COL 2025, April 17).

3. Objective:

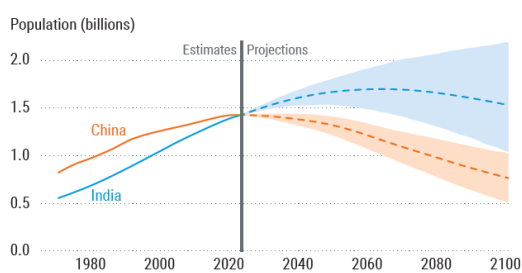
The objective of this paper is to provide Insights from India and initiatives taken by the country to adopt Online mode for education and skill training, with special emphasis on an analysis of Online learner response carried out with the objective of strengthening Institutional processes for improving ease of learning online.

4. Findings:

4.1 Demographic Dividend

India is uniquely placed as the world's most populous country, having overtaken China. (UN DESA Policy Brief No. 153 April 2023)

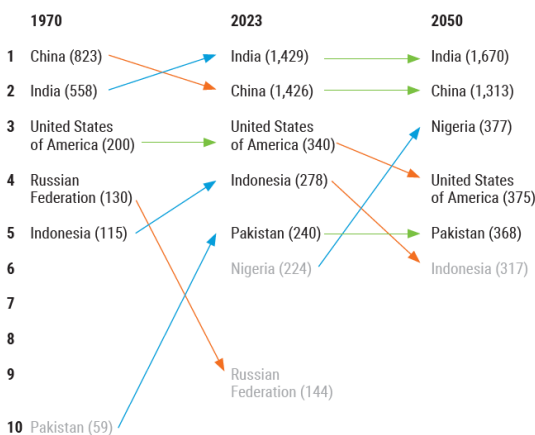
Figure 1
Trends in total population for China and India, estimates for 1970-2022 and projections for 2023-2100
(with 95 per cent prediction intervals)



Data source: United Nations, *World Population Prospects 2022*, <https://population.un.org/wpp/>.

¹ United Nations, Department of Economic and Social Affairs, Population Division (2022). *World Population Prospects 2022: Summary of Results*. UN DESA/POP/2022/TR/NO. 3.

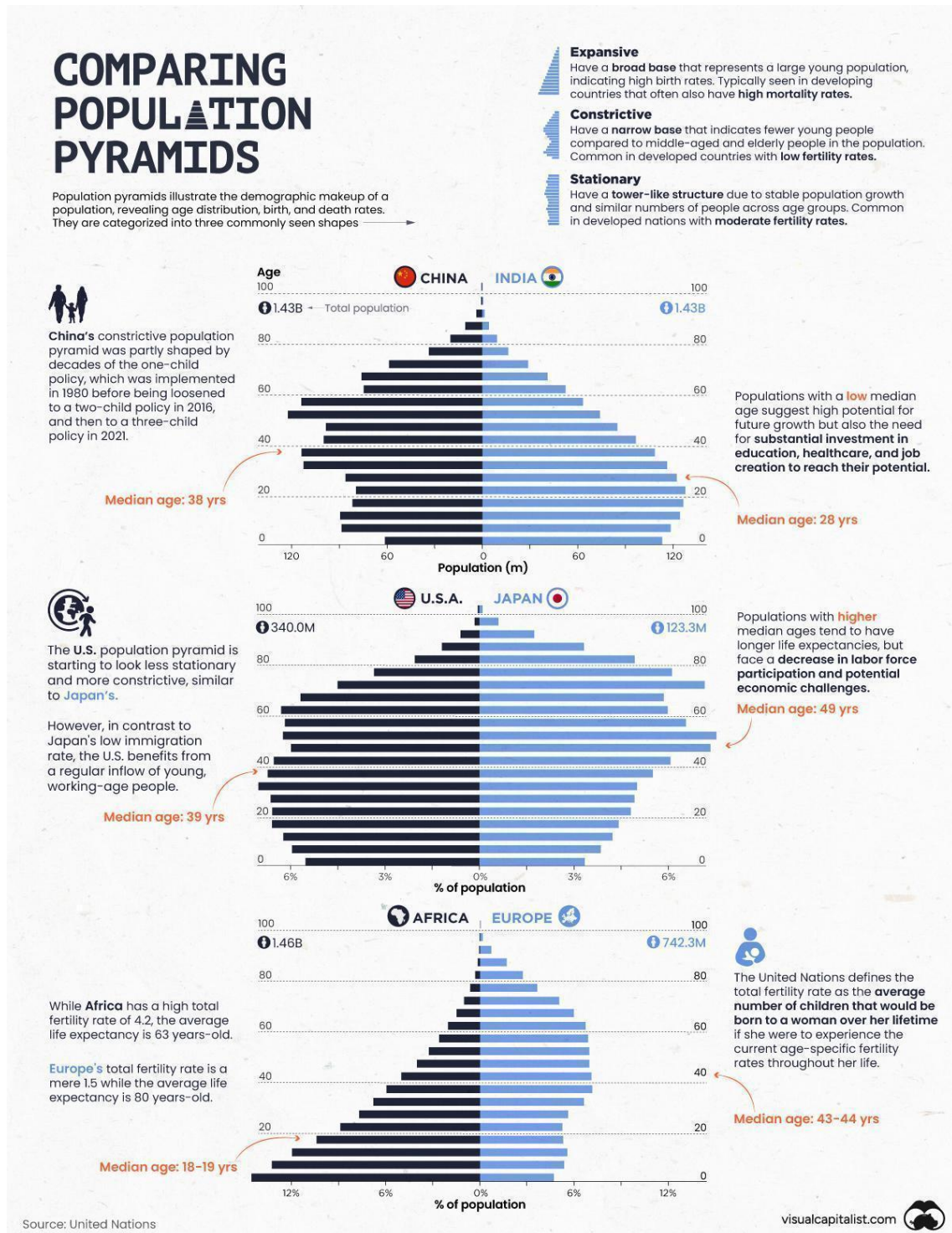
Figure 2
Top five most populous countries, estimates for 1970 and projections for 2023 and 2050



Note: Numbers in parentheses refer to total population (in millions) on 1 July of the referenced year.

Data source: United Nations, *World Population Prospects 2022*, <https://population.un.org/wpp/>.

(Fig 3) Comparing the top two countries, India has a strong base of young and working-aged people (low median age) as compared to China's population with a higher median age (Conte, N. 2023, June 1).



India faces a dual challenge- a growing youth population entering the labour market, and the global trend of industry demand for new skills amid digital transformation. Unemployment among its workforce is estimated at 4.9 % (PIB, April 2025, April 9th). Current estimates indicate that only about 2.3% of India's workforce has undergone formal skills training, compared to well over 50% in many developed countries (msde.gov.in, 2015 and Annual report 2016-17), illustrating the magnitude of the skilling gap.

4.2 Creating enabling Policy and Digital infrastructure

The Government of India has placed emphasis on the formulation of robust policies and the creation of digital infrastructure to scale online education. The National Education Policy (NEP) 2020 highlights the integration of technology through platforms like SWAYAM (UGC 2016, July 19 GoI), and recommends building open, interoperable, and evolvable digital ecosystems to support online and blended learning. NEP 2020 also empowers accredited institutions to offer programmes via Open and Distance Learning (ODL) and online modes, encouraging the adoption of emerging technologies such as Virtual Reality (VR) and Augmented Reality (AR). (Ministry of Education. 2020. GoI). NEP 2020 advocates multidisciplinary and flexible academic programmes (Ministry of Education. 2021, October 16) and recognises qualifications earned via ODL and Online modes, providing operational standards for credit transfer and micro-credentials (UGC 2020 Regulations, GoI) (UGC. <https://deb.ugc.ac.in>).

Through these initiatives , the Government envisions a significant leap in the Gross Enrolment Ratio (GER) in higher education in the country—from 26.3% in 2018 to 50% by 2035.(section 10.8 of NEP 2020) (Ministry of Education. 2021, December 6, National Education Policy 2020. GoI). (Press Information Bureau. (2020, July 29) GoI, Press Release: New Education Policy 2020.).

Telecom Equipment and Services Export Promotion Council (TEPC, 2025, May 6), in collaboration with Department of Telecommunications (DoT) of India, highlighted India’s growth in digital space where 99% of villages are connected with 5G and 82% of the population brought onto the network by deploying 470,000 towers across the country empowering 1.4 billion citizens with digital connectivity. In 2022, it was estimated that India would have nearly 1 billion internet users by 2025 (Ministry of External Affairs, GoI. 2022, May 17), In 2023, it was reported that over 50% Indians were active Internet users; and the base was predicted to reach 900 million by 2025 (The Hindu. 2023, May 4).

3G/4G/5G coverage maps of India shows the extent of cellular data networks in the country (nPerf. n.d.)

4.3 Strengthening Online Education Institutions:

Analyses of challenges faced by online learners to identify the institutional alignment required to respond to learner needs.

4.3.1 Objective:

Analysis of responses from Online learners

4.3.2 Methodology:

The study focuses on responses of learners enrolled in Online Programmes offered by Indira Gandhi National Open University (IGNOU), New Delhi, which is the largest ODL University in India, as also the largest University in the world in terms of enrolment. IGNOU online programme was launched in 2022 with 2 Programmes. In 2024 when the detailed Phase 2 in this study was undertaken, there were 42 Online programmes being offered (ignou.ac.in).

This study is considered as a representative case to analyse learner responses and understand the operational shifts needed in the Institution to align it to learner needs. Primary data is used to investigate the constraints faced by learners in online education.

Primary Data Collection: Quantitative data on frequency of operational issues across departments was analysed. Primary data was obtained from learners who approached the IGNOU Online Programme Support Portal (IOP Support) for grievance redressal. IOP support is only for Online learners. Learners submitted their grievances via an auto-response link with a Google form. The study focused on issues raised by learners, reasons for these issues, and probable institutional adjustments needed.

The data collected in IOP support does not represent all learners since other redressal portals are available in the university to address issues related to Admission/Registration, Re-Registration, Assessments, Examinations and Regional Centre related issues. However, IOP support is the only portal

for addressing LMS related issues of online learners, which is reflected in the high number of issues seen in the visualisation.

Study Design: The study consisted of two parts:

1. Phase 1:- Initial Exploratory Study: Brief study conducted from October 17, 2023, to December 1, 2023, with a sample size of 74 responses. This phase aimed to understand learners' adaptation to online study and identify issues.

2. Phase 2:- Detailed Study: Conducted from December 12, 2023 to March 11, 2025, with a sample size of 455 responses. This phase identified operational gaps specific to each division, segregating issues division-wise.

Tools and Techniques for Analysis:

Quantitative tools were used to analyse data:

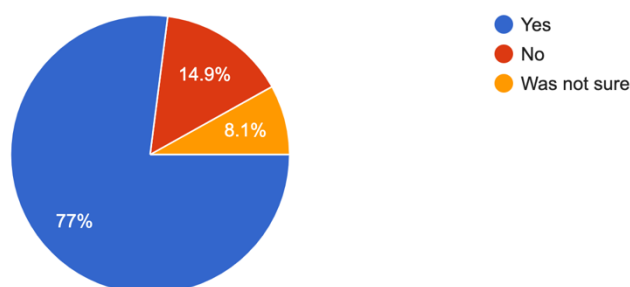
- Excel for calculating frequencies, averages, and trends based on categories
- Visualization using pie charts and bar graphs for issue frequency

4.3.3 Results:

Phase 1:- Initial exploratory study: Queries to learners and responses

1)When you took admission in IGNOU Online programme, were you aware that study will be completely Online and there will be no Face to face study ?

74 responses



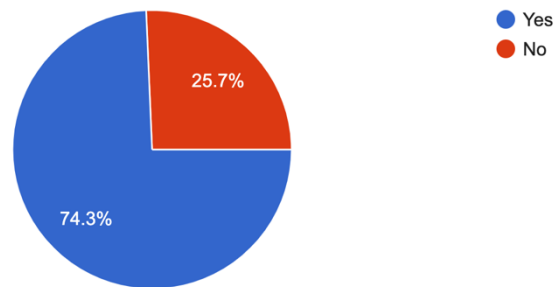
Awareness about Online Mode of Study.

Findings: Although 77% were aware that learning is completely online and there will be no F2F component, almost 23% of learners were unaware or not sure.

Operational Gap and intervention needed: Analysis shows good basic awareness of online mode but information dissemination drives were required to cover the remaining 23%.

2) Do you need more orientation for understanding the online learning environment and navigating the LMS ?

74 responses



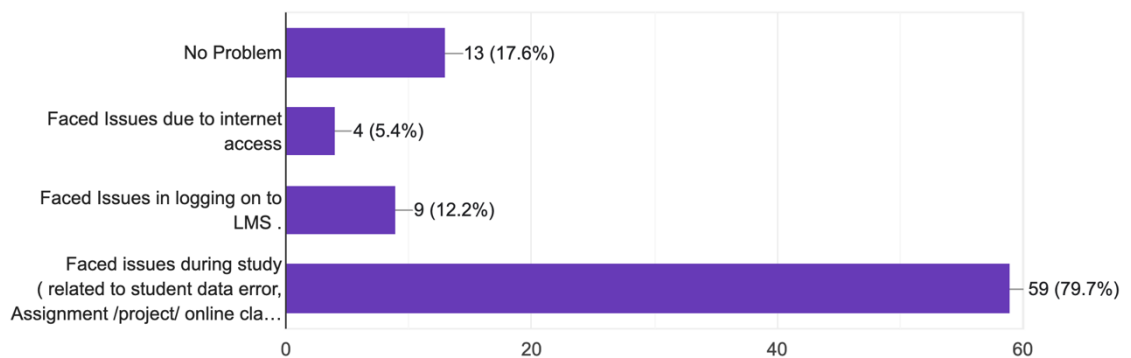
Need for orientation for studying online:

Findings: 74.3% of learners required more orientation for understanding the online learning environment, and navigating the LMS. While the learners were enthusiastic about studying online, they were unsure about how to study online.

Operational Gap and recommendations: Dominant gap. Lack of understanding among learners regarding LMS and studying online. Handholding, detailed FAQ and Information dissemination drives required.

3) What has been your experience while studying in online mode?

74 responses



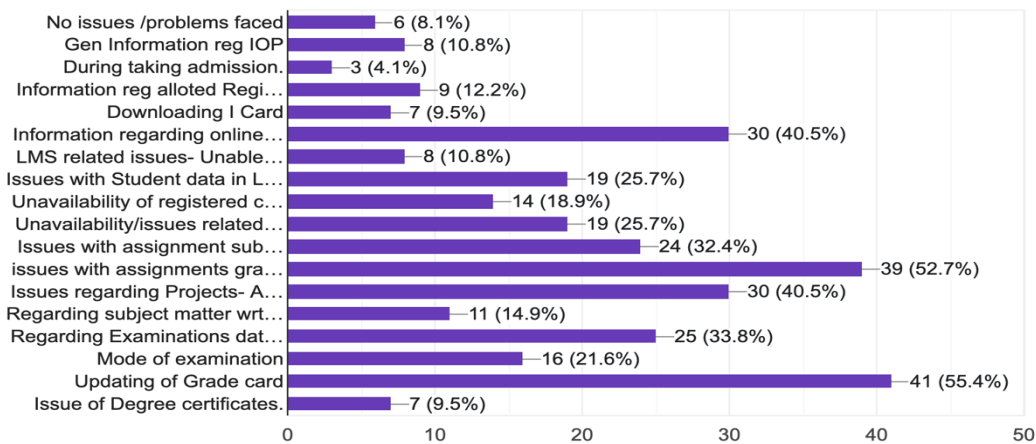
Experience while studying in online mode:

Findings: 79.7% of learners faced multiple issues while studying online.

Operational Gap and intervention needed: Prominent Operational gap. Further analysis needed to identify operational gaps specific to each department for taking corrective action.

4) Please indicate where you have faced issues during your study in online mode and need more support.

74 responses



Parameters: 1) No issues /problems faced, 2) Gen Information reg IOP, 3) During taking admission, 4) information reg allotted Regional Centre, 5) Downloading I Card, 6) Information regarding online classes, 7) LMS related issues- Unable to log in to LMS, 8) Issues with Student data in LMS, 9) Unavailability of registered course in LMS, 10) Unavailability/issues related to Assignment Question paper in LMS, 11) Issues with assignment submission through the LMS, 12) issues with assignments grades, 13) Issues regarding Projects- Approval and submission through LMS, 14) Regarding subject matter wrt Pgm of study, 15) Regarding Examinations dates and registration, 16) Mode of examination, 17) Updating of Grade card, 18) Issue of Degree certificates.

Issues faced during study in online mode:

Findings: Multiple issues faced by learners during study, prominent being activities related to assessment, and Information regarding online classes.

Operational Gap and intervention needed: Detailed study required to identify operational gaps specific to each department for taking corrective measures.

Phase 2:- Detailed Study : Queries to learners and responses

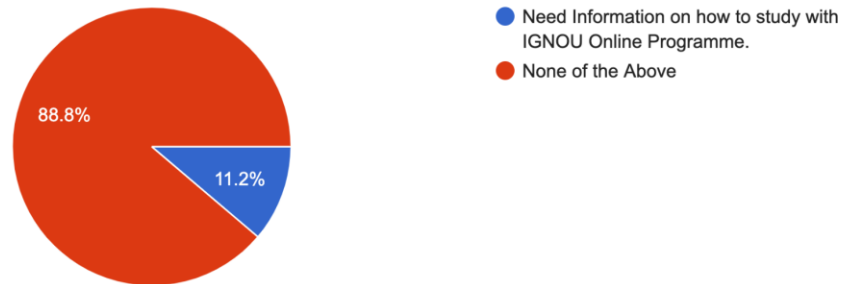
Designed to identify operational gaps specific to each department

Learner response analysis, operational department wise, was done to align the processes of operational divisions as per online learners' requirements as shown from the responses received from them.

Section A: Requirement of FAQ and Gen Information

6) Section A: (IOP FAQ and Gen Information.) Please tick the option if you need information on how to study with IGNOU Online Programme. OR Tick "None of the above" and move to next section.

455 responses



1. Section A: General Information

Categories: “Need Information on how to study with IGNOU Online Programme” (11.2%), “None of the Above” (88.8%).

Findings: Only 10% of learners sought general information, indicating that most queries are specific to operational issues rather than initial guidance. This suggests that Student Support and information dissemination may be functioning adequately for most learners.

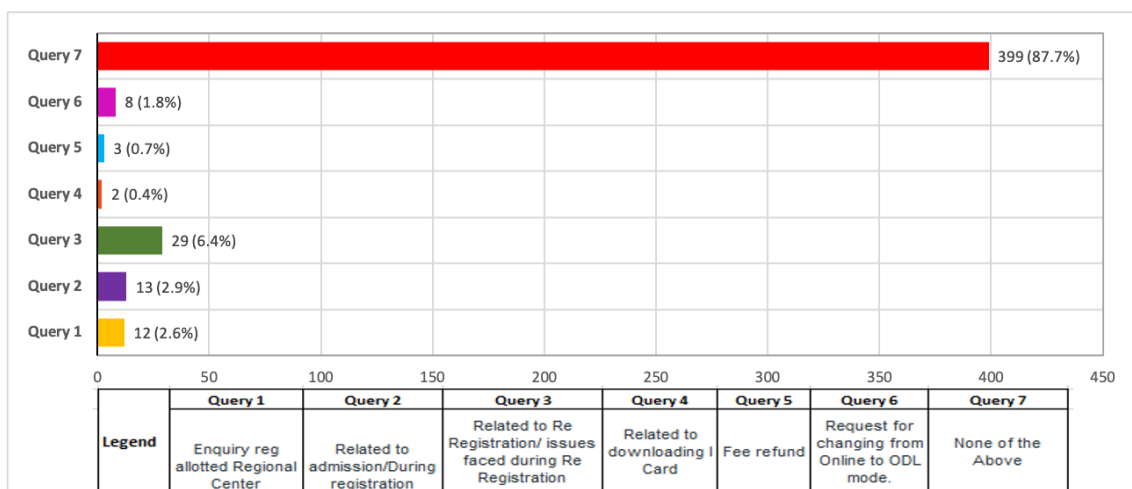
Operational Gap and intervention needed: Minimal gap; focus could shift to proactive information dissemination.

Visualization: Pie chart showing a dominant “None of the Above” category.

Section B: Issues related to Registration / Admission to an online programme. (Students Registration Division SRD)

Question: Section B: (Reg SRD) Please see below options and tick the boxes if any of them relates to your query/grievance

455 responses



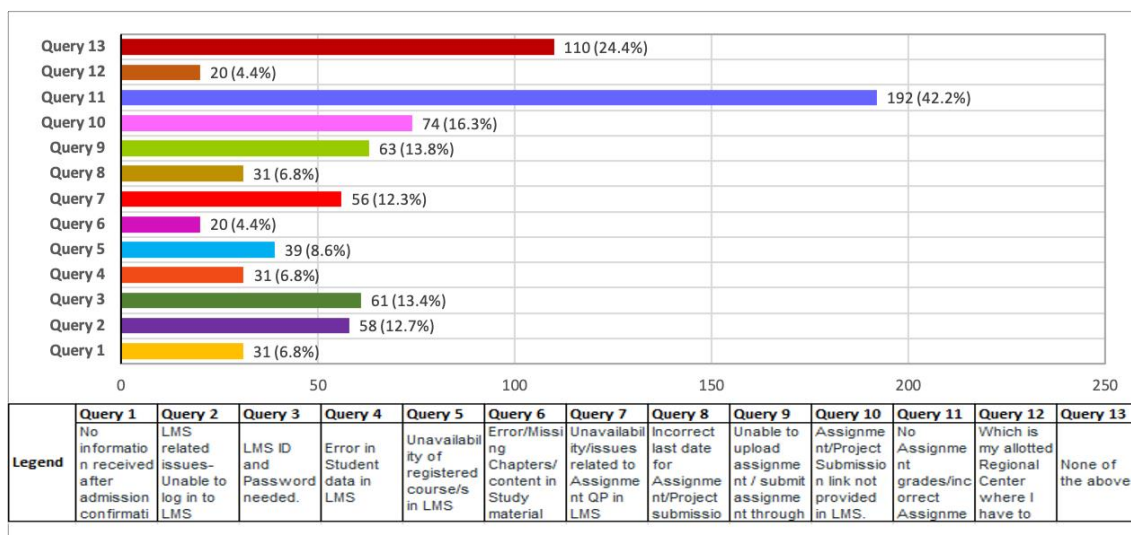
2. Section B: SRD (Student Registration Division)

- Categories: “Enquiry reg allotted Regional Centre” (2.6%)”, “Related to admission/During registration” (2.9%), “Related to Re Registration/ issues faced during Re Registration” (6.4%), “Related to downloading I card” 4%),“Fee refund” (0.7%),Request for changing from Online to ODL (blended) mode”(1.8%) (“None of the Above” (87.7%) .
- Findings: The high “None of the Above” (87.7%) suggests SRD-related problems are not a primary concern for most learners. Among others -there are few Re-registration issues followed by admission concerns. Since Admission process of Online learners are merged with already existing Admission process of ODL learners, with very few deviations, hence operational gaps are minimal.
- Operational Gap and intervention needed: Moderate gap in re-registration processes; minor streamlining of registration workflows required.
- Visualization: Bar chart with “none of the above” as the highest bar.

Section C: Issues related to Learning Management System (LMS).

Question : Section C: (Reg LMS) Please see below options and tick the boxes if any of them relates to your query/grievance .

455 responses



3. Section C: LMS

Categories: As given

Findings:

- Assignment related issues dominate-submission and grading indicating a significant operational gap. Other LMS access problems (e.g., unavailability of courses) are also notable.
- Operational Gap and intervention needed: The LMS handles the core functionalities of the Online Learners and is operationalised when Online Programmes were initiated by the institution, hence initial alignment issues are seen. These results indicated the functional area which had to be strengthened, thus enabling the institution to focus in real time with corrective measures and put guidelines in place. The most probable reason for these issues with recommendations are listed, although due to interconnected operations, other factors would also play a role.

1) Related to timely data transmission (Query 1). Operational streamlining needed

- 2) Lack of Learner familiarity with online processes, LMS and its functions(Query 2,3,9). Targeted Student support needed.
- 3) LMS and data transmission and uploading.(for eg query 4,5,6, 7,8,10).
- 4) Related to unfamiliarity of evaluators in accessing , evaluating and grading assignments etc online through LMS leading to delay in evaluation and grading (11). Training of Evaluators and academics needed.
- 5) Information gap (Query 12). Information dissemination and learner support needed.

These indicators obtained through response analysis are crucial for proactive streamlining of the operations .

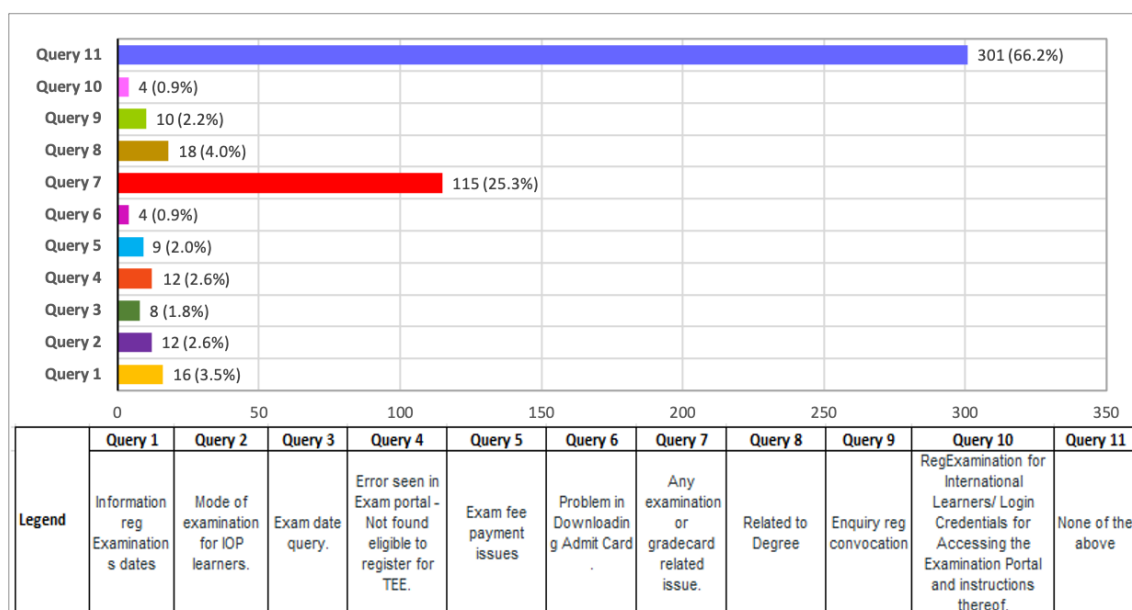
Visualization:

Bar chart with “No Assignment grades” as the tallest bar.

Section D: Issues related to Assessment / Examination (Student Examination Division SED)

Question : Section D: (Reg SED) Please see below options and tick the boxes if any of them relates to your query/grievance

455 responses



4. Section D: SED (Student Evaluation Division)

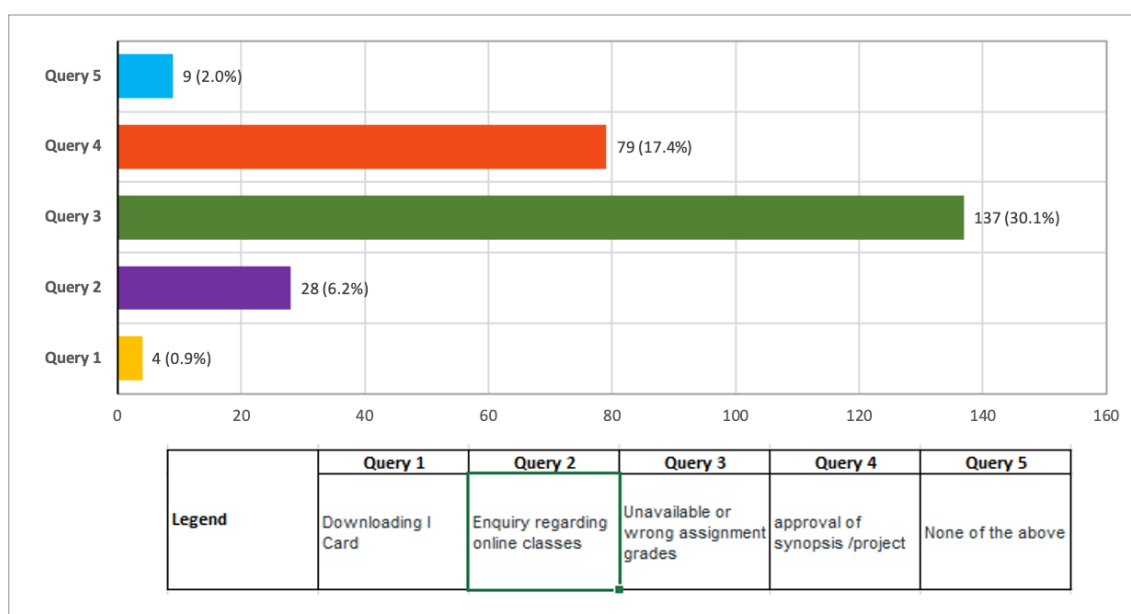
- Categories: As given.
- Findings: Examination and grade-card issues are the most common , with international learner challenges also present.
- The high 25.3% shown for “Any examination or grade card related issue”(query 7) is due to delay in updating Assignment grades on the grade-card due to lack of evaluators trained to undertake Evaluation and grading online as required by the LMS leads to delayed evaluation and grading. Lack of skilled evaluators trained in online operations is a constraint in developing countries, and is rectified through several rounds of training.
- The high “None of the Above” (66.2%) suggests SED, i.e., examination related issues are less widespread. Since the Evaluation process of Online learners are merged with the already existing evaluation/examination process of ODL learners (with very few deviations), operational gaps are minimal.
- Operational Gap and intervention needed: Moderate gap in updating of grade cards due to reasons elaborated above ; international learner support to be enhanced.

- Visualization: Bar chart with “Any examination or grade-card related issue” as the highest.

Section E: Issues related to Regional Centre (RC)

Question: Section E: (Reg RC) Please see below options and tick the boxes if any of them relates to your query/grievance

455 responses



5. Section E: RC (Regional Centre)

- Categories: As given.
- Findings: Assignment grade issues (30.1%) and synopsis/project delays (17.45%) indicate RC coordination challenges and unavailability of skilled Evaluators for undertaking assessments online through LMS. Enquiry regarding Online classes (6.2%) showed a requirement of enhanced communication and student support in these areas.
- Operational Gap and recommendations: Regional Centres are located across the country and may experience a lack of awareness regarding Online programme implementation which is essentially centralised .The analysis indicates requirement of more cycles of training of teachers and staff at the regional level, improved communication with learners as well as centralised Online LMS teams. Aligning with already existing processes within the RC needed with regard to the activities highlighted here. Detailed guidelines needed to keep all RCs in the know.
- Visualization: Bar chart with “Unavailable or wrong assignment grades” as the highest.

5. Discussion:

After passing through more than 75 years of planned educational development in India, the present NEP 2020 prioritises use of technology for education to reach the unreached. A robust digital infrastructure is in place to support this policy. A surge in Internet usage, especially in the rural areas of the country has been seen indicating that rural India continues to drive the Internet growth story in the country, giving rise to the hope that education through online mode will penetrate this sector. However, Internet usage data suggests that most of it is used for entertainment, social media and online commerce. Hence rigorous awareness interventions might be needed for popularising the concept that quality education and skill training, and credible Certification and Degrees can be obtained through studying online. Maintenance of quality of content and assessments will need to go hand in hand with the ability of educational institutions to offer learners a seamless experience while studying online. Institutional alignment to learner needs has been looked into in this paper. While the analysis of data obtained from learner responses gives insight into the various issues being faced by them and also enables operational division wise segregation of the same, this study falls short of presenting conclusive data on the grievances actually resolved, and if institutional adjustments undertaken as a result of Learners' Feedback Responses have actually resulted in reduction of particular grievances. This study would therefore be the First Step "Designed to identify operational gaps specific to each department" as mentioned above, and further research and analysis would be needed as a Second Step for "Analysing the learners' queries received and their reduction over time" which would give indicators towards success of institutional alignment.

1st phase showed 77% had good basic awareness of online mode, but the critical understanding of navigating the LMS was limited, with 74.3% requiring more orientation and only 25.7 % confident of working with LMS. In the 2nd phase of study, only 11.2% needed support, with a sharp upswing of 88.8% in learners' who were confident about studying through the LMS. This pattern is expected when learners adjust to a new method of learning for which there is negligible information availability among peers, and try to absorb information and student support provided by the institution. Good basic awareness and a sharp increase in the competence on how to study through LMS is indicative that the General Information disseminated, as well as the awareness and learner sensitisation drives conducted regarding online mode of study have been adequate for most learners.

The Registration and Evaluation processes of Online Learners have been merged with the already existing registration and evaluation/examination process of ODL learners with few deviations as needed for online mode. Operational gaps are minimal. However, the grievances definitely indicate that more proactive redressal is needed at concerned levels.

Lack of evaluators trained to undertake Evaluation and grading online as required by the LMS has led to delayed evaluation and grading, the resultant issues raised by learners are reflected in the functioning of LMS, Examination Division and also the Regional Centres. Shortage of skilled evaluators trained in online operations is a constraint in developing countries, and needs to be addressed. through several rounds of training, and sourcing evaluators from a centralized pool.

Other LMS Portal Issues can include unavailability of registered courses, inability to upload assignments/projects, missing submission links, incorrect last dates for submission and login issues, which would be mainly due to technical or human oversight. Delays in synopsis approval and other issues related to projects which impact course completion of the learner would require alignment of the processes between the concerned School of Study, Regional Centre and Evaluation Division.

Examination-Related concerns include exam portal errors, missing hall tickets, scheduling conflicts, pending assignment, project marks and grade card as well as degree delays. Issues related to delay of assignment evaluation and its fallout has been discussed and resolution of this single issue would drastically reduce learner grievance across divisions.

Many issues are minor and can be reduced through process streamlining. for which clear SOPs and notifications could be issued . for eg, Academic Counselling Support issues of Regional centres can be resolved through focussed learner support and theory or practical counselling schedules link dissemination.

It was observed from learner remarks with their responses that most of the queries pertained to issues related to operational divisions, and queries regarding subject matter were not frequent. This could be attributed to good quality learning content as also multimedia based learning where learners can access content through print or digitised self learning material, audio-video chapters, smart classrooms, interactive radio and television programmes as well as in different regional languages. It may also reflect the inherent nature of learners in a developing nation to be more focussed on Certifications as a means of obtaining employment as against improving their knowledge skill sets and competency. This attitude would be counter-productive in the coming years since employers' need would be competency and not only certification.

6. Recommendations:

Online education is proposed to address urgently needed reset in skill sets and competencies for developing countries. For institutions transitioning from F2F or ODL to Online mode, the Online learners' learning experience should be the same as ODL or F2F learners', which is possible by following the four-quadrant approach for online learners (Bonk & Zhang, 2006). While implementing, it needs to be ensured that centrality of the learner takes priority, with all other recommendations contributing to this end. Further, prioritising Student Support and Learner retention is critical.

Personal experience of handling ODL and Online operations has shown that merging online programme workflows with pre-existing institutional ODL operations is recommended wherever possible to ensure operational consistency, swift implementation and optimum resource use. Although core operations remain the same, institutions may differ in their work flows and operational path. Deviations from existing work flows may be required only during some activities unique to Online mode related to admissions, operations executed through LMS, classes online/virtual, assessments, assignments, projects submitted through LMS and term end examinations taken through Online proctored mode.

Investing in LMS Team and training of the team as well as Faculty. The LMS handles the content and core functionalities and data of the Online Learning programme and Online learners, hence investing in a competent team and its, as well as faculties', training is critical to efficient implementation.

Consistent analysis of learner responses is important. Data Analysis contributes to identifying at-risk learners and designing interventions to increase retention. Institutions can focus on gaps in real time with corrective measures that go a long way in enhancing learner satisfaction and early stabilisation of operations. Indicators obtained through response analysis are crucial for proactive streamlining of the same.

Training of Faculty, evaluators and operational staff at HQ and Regional Centres of an institution is a critical need whenever there is transition from one mode to another.

7. Conclusion:

The paper highlights the importance of Online mode for countering the challenges being faced globally.

In India, an enabling online education policy and a robust digital infrastructure has enabled adoption of online mode of learning by Institutions and has also shown that developing country learners can absorb new processes and technologies with ease. Further consistent efforts by institutions to understand challenges faced by online learners in order to sustainably align the institution as per learner needs promises to enhance acceptability of this mode of learning among the population. As developing countries attempt to give access to education and skills to their populations, this study would be of interest to their Institutions who are in the process of transitioning from conventional mode of education to completely Online mode.

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