Research Article

Status of Indian Higher Education Institutions Online Preparedness for Implementation of the Instructional Design

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Abstract

Instructional design (ID) plays a critical role in improving the quality and efficacy of higher education by focusing on teaching methodology and needs of learners. Indian higher education system faces issues like limited availability of resources, and a lack of readiness for the digital age. This study examines the status of instructional design in Indian higher education and assesses its readiness for online learning through a survey of 848 faculty members across various Indian states and union territories, the study examines the implementation of ID principles, identifies barriers to adoption, and evaluates institutional preparedness for online and blended learning models. Findings reveal a mixed landscape of institutions have policies favourable to online education, 33.5 per cent offer only partial support, and 6.4 per cent lack favourable policies. There are infrastructure gaps; near 32.1 per cent of institutions have the facilities needed for online learning, while 8.8 per cent lack. Another issue is internet connectivity; 49.2 per cent of respondents said they had strong connectivity, 43.2 per cent said they had moderate connectivity, and 6.6 per cent said they had no connectivity. Learning Management Systems (LMS) are implemented only at 29.1 per cent of institutions. Additionally, Instructional Design faculty training and awareness is also insufficient. Although there has been progress, the study finds that there are still large gaps. To build a more successful and equitable higher education system in India, study recommends better infrastructure facilities, strong policy frameworks, faculty training be given top priority, and the significance of ID be made more widely known.

Keywords: Instructional Design, Indian Higher Education, Online Learning, Digital Infrastructure, Outcome-Based Education, Equitable Access, Universal Design for Learning, Institutional Readiness

Introduction

Instructional design (ID) is a methodical process of creating educational experiences and resources to support efficient learning. It attempts to close the gap between learning results and educational goals by improving pedagogy, cognitive psychology, and adding technology. ID is vital in determining the efficacy and quality of higher education by making sure that instructional strategies cater to wide range of learners and changing international trends. In higher education, instructional design is essential for developing curricula, improving teaching strategies, and making sure that learning opportunities meet the needs of various student populations. The significance of instructional design has increased as higher education institutions around the world struggle with the difficulties of digital transformation. This is especially after COVID-19, which hastened the adoption of online and blended learning methods. Adopting excellent

instructional design, however, is fraught with difficulties.

Rapid technological innovation and the growing need for easily accessible, high-quality education are driving a major revolution in Indian higher education. The Indian higher education is among the biggest in the world, with more than 40,000 institutions and 1,000 universities. But in spite of its size, the system has several problems, such as inconsistent quality, restricted resource availability, and a lack of readiness for the digital era. These issues are made worse by sole conventional lecture-based teaching techniques, a lack of knowledge of and integration of pedagogical innovations, insufficient faculty training, and reluctance to embrace technology-enhanced learning. Furthermore, the adoption of contemporary teaching methodologies is complicated by elements like fixed curricula, student demographics, huge class numbers, and infrastructure limitations. By promoting innovation in curriculum delivery, improving teaching and learning quality, and elevating the overall educational experience, instructional design, with its emphasis on structured, learner-centred approaches, has the ability to address many of these issues.

This paper aims to evaluate the system's readiness for online learning and investigate the state of instructional design in Indian higher education. It will attempt to explore the degree to which ID principles are implemented, the challenges it faces while implementing, and successful case studies where instructional design has been used successfully. The study will also assess Indian higher education institutions' preparedness for the shift to online and mixed learning models, taking into account elements including student accessibility, faculty training, and technology infrastructure. By doing this, it seeks to offer a thorough grasp of how instructional design contributes to improving the calibre and accessibility of Indian higher education.

Instructional Design Described and Defined

It might be difficult to define instructional design because there are so many different definitions in the literature. In its most basic form, instructional design is a methodical and organised process for developing effective, interesting and engaging learning opportunities. It entails analysing learning needs, creating and developing educational resources, and assessing how well they work to fulfil the desired intended outcomes. It is the process of turning teaching and learning ideas into lesson plans and instructional activities.

A learner-centred, research-based method that uses pedagogical ideas and technology to design, develop, implement, and assess relevant learning experiences is instructional design. In order to customise learning and enhance results, it places a strong emphasis on flexibility, inclusion, and the technology integration. In order to align with 21st century needs of students in a digital world that is changing quickly, modern instructional design also prioritises creating for a variety of learning contexts, such as online, hybrid, and blended formats. Through deliberate and scalable teaching practices, the objective is to promote critical thinking, skill development, and engagement.

In recent years, the role of the instructional designer has grown increasingly centred on the development of eLearning integration within the instructional design process. When developing curricula for eLearning activities, academics or teaching faculty—SMEs (subject matter experts) are consulted by instructional designers. With roots in educational theory and cognitive psychology, Globally, learner-

centred design, feedback, organised planning, and alignment with learning outcomes are all emphasised by ID frameworks such as ADDIE (Analysis, Design, Development, Implementation, Evaluation) (Branch and Kopcha, 2021). ID makes sure that organised curriculum design, activities, assessments, and technology integration are used to achieve Course Learning Outcomes (CLOs) and Programme Learning Outcomes (PLOs) in the framework of Outcome-Based Education (OBE) (Bates, 2020). However, disparities still exist, especially in emerging nations like India where institutional preparedness differs greatly.

ADDIE Model for Instructional Design

The ADDIE model is a popular framework for instructional design that has five stages: analysis, design, development, implementation, and performance and training evaluation.

The ADDIE supports-

- Designing, developing, implementing, and assessing training and performance;
- Creating course materials that adhere to pedagogical and technology approaches;
- The development and application of instructional elements; and
- The creation of instruments for assessment and evaluation.

The creation of ADDIE is linked to the efforts of numerous significant developers and organisations in the field of instructional design.

Key Contributors to the ADDIE Model

1. Florida State University (FSU) and U.S. Military (1970s)- The ADDIE idea was first used in the 1970s, Interservice Procedures for Instructional Systems Development (IPISD). The five phases of the original model eventually gave rise to the more adaptable ADDIE framework that is in use today.
2. Briggs, Gagné, and Others (Foundations in Instructional Design)- Significant thinkers like Leslie Briggs and Robert Gagné (Conditions of Learning, 1965) helped to establish the theoretical underpinnings of systematic instructional design, which in turn impacted ADDIE. Later on, Gagné's Nine Events of Instruction (1985) emerged as a crucial element in the ADDIE Design phase.
3. Evolution by Later Scholars- Overtime scholars and practitioners (such as Dick and Carey, Merrill, and Reigeluth), made it more flexible and interactive. Current ADDIE place more emphasis on ongoing feedback loops than on a strictly linear procedure.

How Each ADDIE Phase Connects to ID Principles

ADDIE Phase	ID Principle	Key Activities
A. Analysis	Needs Assessment and Learner Analysis	Identifying learning gaps, analysing learner demographics.
B. Design	Structured Curriculum Planning	Defining learning objectives, choosing instructional strategies (blended learning, microlearning), selecting assessment methods (quizzes, projects).

ADDIE Phase	ID Principle	Key Activities
C. Development	Content Creation and Resource Building	Developing e-learning modules, interactive activities, training faculty on digital tools.
D. Implementation	Delivery and Engagement	Rolling out courses via LMS, hybrid models, or SWAYAM; providing technical support.
E. Evaluation	Continuous Improvement	Formative Evaluation (feedback during the course), Summative Evaluation (final assessment of learning outcomes).

Literature

NEP 2020 and ID Principles

The National Education Policy (NEP) 2020 emphasises technology-integrated, learner-centric education, aligning closely with the principles of Instructional Design (ID). The policy advocates for flexible, multidisciplinary learning, online/blended education, and outcome-based curricula—all of which require structured ID frameworks to ensure effective implementation. NEP's push for digital infrastructure (e.g., SWAYAM, LMS adoption) and teacher training mirrors ID's focus on pedagogical innovation, accessibility, and data-driven design.

NEP 2020 Directives:

Category	Section	Key Provisions
Digital Infrastructure and Online Education	24.4	The "National Educational Technology Forum (NETF)" to supervise digital content, infrastructure, and capacity building
	11.7	Advocates for blended learning models and integration of MOOCs (e.g., SWAYAM) into mainstream education.
Faculty Training and Capacity Building	15.5	
	11.6	Emphasises the need for faculty to adopt learner-centred approaches.
Policy Frameworks and Institutional Autonomy	12.6	Encourages universities to adopt flexible, outcome-based curricula.
	23.5	Calls for "light but tight" regulations to foster innovation in online education.

Research Studies

Papers and studies reflect the evolving nature of instructional design, particularly its integration with technology, data, and learner-centred approaches:

Foundational Studies on Instructional Design

1. Chen, L., and Wang, Y. (2023): Personalisation in Online Learning

   "AI-Driven Personalisation in Online Learning: Effectiveness and Ethical Implications."

   Study examines how AI tailors learning experiences (adaptive content, chatbots, recommendation systems) and discusses ethical concerns (data privacy, bias). AI-driven platforms improved course completion rates by 22 per cent by dynamically adjusting content difficulty based on learner performance. The key insights highlighted that AI improves engagement but requires transparency to avoid over-reliance on automation. AI reduced human instructor interactions, leading to 12 per cent lower satisfaction in courses with minimal faculty involvement.

2. Trust and Pektas (2021): AI in Instructional Design

   "Exploring the Use of Artificial Intelligence in Instructional Design: Opportunities and Challenges."

   Study examines AI's transformative impact on instructional design, including automated content generation, adaptive learning systems, and AI-driven analytics. It also discusses challenges like ethical concerns and over-reliance on automation. Study points Automated content creation reduced course development time by 30 per cent and Personalised learning paths improved outcomes for diverse learners. Study recommend AI-driven ID could address scalability issues but requires policy frameworks for equitable implementation.

   Kumar and Ritzhaupt (2020): Competencies of Instructional Designers

   "What Do Instructional Designers Do? A Study of Competencies and Practices."

   Study investigates the evolving roles and required competencies of instructional designers in 21st century, particularly their adaptability to new technologies, pedagogical knowledge, and project management for diverse learner needs. It highlights the shift toward more dynamic, tech-integrated design practices. Only 28 per cent of Indian instructional designers reported formal training, compared to 65 per cent in the U.S. Lack of institutional support and standardised certification programs in India. Therefore, calls for national faculty development programs to bridge the ID skills gap.

The Critical Role of Personalised Learning in Instructional Design (ID)

3. Siemens, G., and Long, P. (2021): Analytics in Learning and Education

   "Penetrating the Fog: Analytics in Learning and Education."

   This paper explores the role of learning analytics in instructional design, emphasising how data-driven insights can inform the design of personalised and adaptive instruction, and educational decision-making, helping educators "penetrate the

fog" of uncertainty in teaching and learning processes. This improves teaching and learning outcomes. Paper insights that Learning Analytics enables adaptive learning paths by tailoring content based on individual learner data.

Bates (2020): Teaching in a Digital Age

"Teaching in a Digital Age: Guidelines for Designing Teaching and Learning."

This book serves as a fundamental manual for educators and instructional designers in creating effective digital learning experiences. It emphasises pedagogical soundness, accessibility, and scalability, offering practical strategies for adapting teaching methods to the digital age. Moving from traditional lecturing to designing interactive online courses demands specialised training. Only 12 per cent of Indian faculty reported receiving such training (NCERT, 2023). Faculty trained in ID frameworks (e.g., ADDIE) were 3× more likely to use LMS features effectively (e.g., discussion forums, analytics).

Hodges, C., Moore, S., Lockee, B., Trust, T., and Bond, A. (2020)

"The Difference Between Emergency Remote Teaching and Online Learning."

This paper clarifies the distinction between hastily implemented remote teaching (due to emergencies like COVID-19) and well-designed online learning. It underscores the critical role of instructional design in ensuring meaningful learning experiences rather than just temporary solutions.

Improved Learning Outcomes with ID Training

4. Martin and Bolliger (2022): Engagement in Online Learning Environments

   "Engagement Matters: Student Perceptions on the Importance of Engagement Strategies in the Online Learning Environment."

   This study emphasise on engagement strategies in online learning. The researchers conducted a large-scale survey across multiple universities, identifying that interactive and learner-centred design significantly boosts engagement. It underscores interactive elements (discussion forums, quizzes), instructor presence (timely feedback, video lectures), the need for deliberate design choices to maintain motivation and participation. From Indian perspective the study underscores the need for localised ID strategies that address infrastructural and cultural gaps in online education.

The Evidence-Based Applications

5. Johnson, M., and Lee, K. (2023)

   "The Role of Extended Reality (XR) in Instructional Design: A Meta-Analysis."

   The study evaluates VR/AR/MR applications in education. The study evaluates effectiveness of XR for learning outcomes (e.g., retention, engagement), optimal implementation strategies (e.g., blended vs. standalone use), subject-specific impacts, particularly in STEM fields. Highlighting Instructional Design

Principles for XR Integration study recommend Scaffolded Learning: Pair XR with structured activities. XR is most effective when integrated with guided instruction, not as a standalone tool.

6. Branch, R. M., and Kopcha, T. J. (2021)

   "Instructional Design Models."

   The paper explores various instructional design models, like ADDIE, SAM, and Design Thinking, and discusses their adaptability and relevance in contemporary educational contexts, particularly in digital and hybrid learning. According to the study ADDIE Model shows it is often neglected in Indian HEIs, leading to mismatched curricula (e.g., theory-heavy engineering programs) of Analysis phase. Only 29.1 per cent of Indian institutions use LMS (original study), failing ADDIE's design principles. Less than 20 per cent employ analytics to assess learning outcomes.

7. Reiser, R. A., and Dempsey, J. V. (2021)

   "Trends and Issues in Instructional Design and Technology."

   This book (4th edition) discusses current trends in instructional design, including the integration of immersive technologies, gamification, and microlearning. It also addresses ethical considerations and the growing influence of data-driven design.

Objectives and Research Questions

The key objective of the study is to understand the status of instructional design implementation in Indian higher education institutions.

The research questions are as follows:

- How effectively instructional design principles are used in Indian universities and colleges?
- How prepared are Indian institutions for online education?

Methodology

The study data was collected via a descriptive and exploratory survey (questionnaire) from faculty members from Indian higher education institutions across India. The total of 848 participants with major from Andhra Pradesh (109), Tamil Nadu (109), Telangana (86), and fewer participants from Sikkim, Dadra and Nagar Haveli, Daman and Diu, and Ladakh (one participant from each state/UT) covering from Central Universities, State Universities, deemed universities, and private universities. The data was collected from 848 participants.

Data

The primary data on infrastructural facilities, online preparedness and policies framework reveal significant insights into the readiness of Indian higher education institutions for digital learning.

Infrastructural Facilities

The integration of robust infrastructural facilities ensures that instructional designers can implement practical applications to enhance learner engagement and outcomes. Moreover, adequate infrastructure supports inclusivity by accommodating diverse learning needs and ensuring accessibility for all students.

a) Access to Devices for Supporting Online Education

The data on the availability of infrastructural facilities in the form of access devices for supporting online education indicates that:

Table-1: Institution have infrastructural facilities in the form of access devices for supporting online education

		Frequency	Percent
Valid	Yes, fully equipped	272	32.1
	No facilities available	75	8.8
	Some facilities	492	58.0
	Can not say	8	.9
	Total	847	99.9
Missing	System	1	.1
Total		848	100.0

Source: Primary data

- The majority of institutions (58.0 per cent) have some facilities for online education but are not fully equipped.
- About one-third (32.1 per cent) are fully equipped, indicating a significant portion with adequate infrastructure.
- A small percentage (8.8 per cent) lack any facilities, highlighting a gap that needs to be addressed.

The findings emphasise the importance of addressing infrastructural disparities to ensure equitable access to online education. While many institutions are making progress, there is a clear need for enhanced support and resources to achieve full readiness.

b) Internet Connectivity for Supporting Online Education

The data on the availability of internet connectivity for supporting online education indicates that:

Table-2: Institution have infrastructural facilities in the form of Internet connectivity for supporting online education

		Frequency	Percent
Valid	Good internet connectivity	417	49.2
	No internet connectivity	56	6.6
	Moderate connectivity	366	43.2
	Can not say	8	.9
	Total	847	99.9
Missing	System	1	.1
Total		848	100.0

Source: Primary data

- Nearly half (49.2 per cent) of the respondents reported having good internet connectivity, indicating that a significant portion of institutions are well-equipped to support online education.
- A small percentage (6.6 per cent) of respondents stated that their institutions lack internet connectivity, which is a critical barrier to online education.
- A substantial number of respondents (43.2 per cent) reported moderate internet connectivity, suggesting that while internet access is available, it may not be fully reliable or sufficient for seamless online learning.

The findings emphasise that addressing these connectivity issues is crucial for ensuring that all institutions can provide reliable and effective online education.

Online Preparedness

The adoption of SWAYAM courses by educational institutions is a significant

step towards integrating digital learning platforms into traditional education systems. This analysis examines the extent to which institutions have framed policies and necessary measures to adopt SWAYAM courses for their students.

a) Institutions' SWAYAM Adoption Policy Progress

The data on whether institutions have framed policies and necessary measures to adopt SWAYAM courses for their students indicates that:

Table-3: Institution framework on policies and necessary measures to adopt SWAYAM courses for its students

		Frequency	Percent
Valid	Yes	281	33.1
	No	239	28.2
	Under Process	327	38.6
	Total	847	99.9
Missing	System	1	.1
Total		848	100.0

Source: Primary data

- 33.1 per cent (281 of 847) of institutions have framed policies and measures for adopting SWAYAM courses.
- 28.2 per cent (239) suggest that institutions have not yet framed such policies.
- 38.6 per cent (327) of responses show that the process of framing these policies is ongoing.

This data suggests that while a considerable number of institutions are actively working towards adopting SWAYAM courses, there is still a notable percentage that has not yet taken steps in this direction.

b) Institution Adoption or Subscription of a Learning Management System (LMS)

The data on the adoption or subscription of a Learning Management System (LMS) by institutions for supporting online education indicates that:

Table-4: Institution adoption or subscription of a Learning Management System (LMS) by institutions for supporting online education

		Frequency	Percent
Valid	Yes	247	29.1
	No	319	37.6
	Partially	179	21.1
	Can Not Say	102	12.0
	Total	847	99.9
Missing	System	1	.1
Total		848	100.0

Source: Primary data

- Less than one-third (29.1 per cent) of the respondents reported that their institution has fully adopted or subscribed to an LMS.
- A larger percentage (37.6 per cent) stated that their institution does

not have an LMS, highlighting a substantial gap in the digital tools required for effective online education.

- About one-fifth (21.1 per cent) indicated partial adoption of an LMS, suggesting that some institutions are in the process of implementing or integrating these systems but are not fully equipped.
- A notable percentage (12.0 per cent) were unsure about the adoption status of an LMS at their institution.

The high percentage of institutions without an LMS underscores a critical need for investment in digital infrastructure to support effective online education.

Policy Framework

The institutional policy framework for supporting online education is a critical factor in ensuring the effectiveness and scalability of digital learning. This highlights the need for more comprehensive and inclusive policy frameworks that address infrastructure, faculty training, and student accessibility. Strengthening these policies will ensure equitable access to quality online education and support the evolving needs of learners in a rapidly changing digital landscape.

a) Institutions' framework on policies for supporting ICT based teaching

The data provides insights on whether Institution frame some policies for supporting ICT based teaching indicates that:

Table-5: Institution framework on policies for supporting ICT based teaching

		Frequency	Percent
Valid	Yes	323	38.1
	No	116	13.7
	At Some level	308	36.3
	Under Process	100	11.8
	Total	847	99.9
Missing	System	1	.1
Total		848	100.0

Source: Primary data

- Over one-third (38.1 per cent) 323 of the respondents reported that their institution has framed policies to support ICT based teaching, indicating a significant commitment to integrating technology in education.
- A smaller percentage (13.7 per cent) of respondents stated that their institution has not framed any policies for ICT based teaching, highlighting a gap in institutional support for technology integration.
- A similar percentage (36.3 per cent) 308 of respondents indicated that their institution has policies at some level, suggesting partial implementation or ongoing development of ICT based teaching policies.
- About one-tenth (11.8 per cent) of the respondents reported that policy framing is under process, indicating that these institutions are in the transitional phase of adopting ICT based teaching policies.

Overall, the findings suggest that many institutions are moving towards embracing ICT based teaching, but there is still room for improvement.

b) Institutional policies favourable for supporting Online Education

The data provides insights on whether Institutional policies favourable for supporting online education indicates that:

Table-6: Institutional policies favourable for supporting online education

		Frequency	Percent
Valid	Yes	451	53.2
	No	54	6.4
	Up to certain extent	284	33.5
	Can not say	58	6.8
	Total	847	99.9
Missing	System	1	.1
Total		848	100.0

Source: Primary data

- 53.2 per cent Majority of institutions have policies that are favorable for supporting online education, which is a positive indicator of their readiness for digital learning.
- 33.5 per cent of respondents reported that policies are only favorable to a certain extent, indicating partial support or areas needing enhancement and room for improvement.
- 6.4 per cent of institutions have policies that are not favorable, highlighting a need for policy improvements in these institutions.
- 6.8 per cent of respondents were unsure, suggesting a need for better policy communication and development.

Overall, while many institutions are well-positioned to support online education, there is a need for continuous evaluation and enhancement of policies to ensure comprehensive support for digital learning environments.

Data Analysis

NEP 2020 and Primary Data

The findings and recommendations of this study align closely with several key initiatives outlined in India's National Education Policy (NEP) 2020, which emphasises digital transformation, equitable access, and faculty development in higher education.

a. Digital Infrastructure and Online Education

- The study's finding that only 32.1 per cent of institutions are fully equipped for online learning underscores the urgency of NEP's call for infrastructure upgrades.
- Recommendation: Accelerate the implementation of NETF to address gaps in LMS adoption (29.1 per cent) and internet connectivity (43.2 per cent moderate).

b. Faculty Training and Capacity Building

- The study reveals that faculty lack ID training, which correlates with low LMS usage (29.1 per cent) and ineffective online engagement.
- Recommendation:Institutionalize

CPD programs focused on:

- ◊ Course design using ADDIE/ SAM models (Branch & Kopcha, 2021).
- ◊ Diversity to address Universal Design for Learning (UDL) (Tarconish et al., 2023).

c. Policy Frameworks and Institutional Autonomy

- The study notes that 53.2 per cent of institutions have favorable online policies, but enforcement is weak.
- Recommendation: Strengthen policy frameworks to mandate:
  - ◊ ID-aligned curricula (e.g., OBE integration).
  - ◊ Annual audits of digital readiness (LMS usage, faculty training metrics).

d. Equitable Access and Inclusion

- The study highlights regional disparities (e.g., 8.8 per cent institutions lack any facilities) and low UDL adoption.
- Recommendation: Scale up DIKSHA-like platforms and subsidize devices for rural institutions, aligning with NEP's equity goals.

e. Research and Innovation

- The study identifies gaps in AI-driven ID adoption (Trust & Pektas, 2021) due to infrastructure limitations.
- Recommendation: Fund research projects exploring:
  - ◊ Low-bandwidth ID solutions for rural areas.

AI-powered personalised learning within India's resource constraints.

Insights from Literature and Data

The primary data is linked with the reviewed paper and analysed critically.

- The roles and skills of instructional designers are examined in the paper "Competencies of Instructional Designers" by Kumar and Ritzhaupt. The primary study shows Lack of institutional support and standardised certification programs in Indian institutions and calls for national faculty development programs to bridge the ID skills gap.
- AI in Instructional Design study by Trust and Pektas examines AI's transformative impact on instructional design, including automated content generation. Elevating the primary study and relevance to Indian institutions: AI-driven ID could address scalability issues but requires policy frameworks for equitable implementation
- Bates book serves as a foundational guide for educators and instructional designers in creating effective digital learning experiences. The original survey's finding that only 29.1 per cent of institutions use LMS aligns with Bates' observation that untrained faculty default to passive content uploads rather than interactive design.
- The primary study underscores the need for localised ID strategies that address infrastructural and cultural gaps in online education linked to Martin and Bolliger study on engagement strategies in online learning.

Data Findings

a. Infrastructural Challenges: A Major Barrier

The absence of suitable infrastructure is one of the biggest obstacles to the successful application of instructional design in Indian higher education. According to the research, only 32.1 per cent of institutions are fully prepared for online learning and 58.0 per cent have some facilities. Additionally, 8.8 per cent of institutions have no to negligible facilities, which is a serious issue that requires attention. Likewise, another issue is internet access, which is essential to online learning. Of the institutions surveyed, 49.2 per cent report having decent internet connectivity, 43.2 per cent have only moderate connectivity, and 6.6 per cent have no connectivity at all. In addition to making, it more difficult to conduct online education, these infrastructure flaws make already-existing disparities worse by placing students from universities with less funding at a disadvantage.

b. Policy Frameworks: Progress and Gaps

The policy environment pertaining to instructional design and online education is further clarified by the study. ICT-based teaching supported by higher education institutions, 53.2 per cent of institutions have policies that encourage online learning, sizable fraction 38.1 per cent partially supports institutions' policies, 36.3 per cent have only partially implemented, and 13.7 per cent have no policies at all. This suggests that although the value of ICT in education is becoming more widely acknowledged, stronger and more inclusive policy frameworks are required. This understanding has not yet been fully translated into workable policies. This notion is further demonstrated by the implementation of SWAYAM courses, a crucial step in the integration of digital learning systems. 38.6 per cent of institutions are now in the process of adopting SWAYAM courses, while 33.1 per cent have developed policies to do so. This implies that even while there has been some progress, much more work needs to be done before digital learning platforms are completely included into the system of higher education.

c. Faculty Training and Awareness

Faculty training is another crucial issue that needs focus. Faculty training and their understanding in adjusting to new pedagogical approaches and technological advancements is critical to the effective use of instructional design concepts. However, the study shows that faculty members lack awareness and training, which makes it difficult to use ID effectively in the classroom. Programs for faculty development that integrate technology and instructional design concepts must be given top priority by institutions. This will guarantee that faculty members are prepared to fulfil the various demands of their students in addition to improving the quality of instruction.

d. The Role of Learning Management of Learning System

Another area with notable disparities is the implementation of Learning Management Systems (LMS). Just 29.1 per cent of institutions have subscribed to or fully embraced an LMS, compared to 37.6 per cent that have not and 21.1 per cent that have just partially done so. This reveals a significant deficiency in the technological resources needed for successful online learning. Online course management, student progress monitoring, and faculty-student contact are all made possible by LMS platforms. One major obstacle to the effectiveness and scalability of online education in

India is the absence of broad adoption of LMS platforms.

Conclusion

Instructional design (ID) is not merely a theoretical framework but a practical tool that can address many of the systemic issues plaguing Indian higher education. The exploration of instructional design in Indian higher education, especially in the context of online preparedness, reveals a complex landscape marked by both progress and persistent challenges. The systematic approach of ID, which involves analysing learning needs, designing tailored instructional materials, and evaluating outcomes, is essential for creating engaging and effective learning experiences. India has made significant strides in integrating technology and instructional design principles into higher education, there remains a substantial gap between the current state and the ideal scenario of a fully digital, inclusive, and effective learning environment. The implementation of ID principles in Indian higher education is uneven. While some institutions have embraced ID to enhance their teaching methodologies and curriculum delivery, many others continue to rely on traditional, lecture-based approaches that are ill-suited to the demands of the digital age. The findings from this study underscore the critical role of instructional design in shaping the future of higher education in India, especially as the sector grapples with the dual challenges of scale and diversity.

Higher education in India could be revolutionised by instructional design, but there are a few things that must happen before this can happen. First, investment needs to be spent on infrastructure, especially on internet connectivity and access devices. Second, organisations need to create and put into effect thorough policy frameworks that facilitate the fusion of instructional design concepts with ICT. Third, to guarantee that teachers are prepared to use technology in the classroom, faculty training initiatives need to be given top priority. Lastly, more advocacy and understanding of the value of instructional design in raising the standard and accessibility of higher education are required.

To conclude, the results of this study demonstrate the advancements and difficulties in the implementation of instructional design in Indian higher education. Even if there are positive indications of progress, especially with regard to the creation of policies and the uptake of digital learning environments, there are still large gaps. All stakeholders including legislators, educators, and researchers, must work together to close these gaps. India can use instructional design to build a more effective and inclusive higher education system by emphasising teacher training, infrastructure, and creating strong policy frameworks. Digital transformation is a difficult and complicated process, but with the correct approaches and dedication, it can result in notable improvements in the quality and accessibility of Indian higher education.

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