



Online and Blended Learning Models in NEP 2020: Opportunities and Challenges

Madhabi Barman

Research Scholar, Department of Education, University of Lucknow

Lucknow, Uttar Pradesh- 226007, India

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ABSTRACT

Nowadays, e-learning use is increasing day by day. The National Education Policy (NEP) 2020 represents a fundamental shift in India's approach to technology-enabled education, emphasizing online, digital, open, and distance learning as a valuable way to boost access, equity, quality, and flexibility. This paper gives an overview of the concept of online and blended learning from different perspectives, such as the holistic and educational perspectives. It also describes the various online and blended learning models. This paper also discloses the methods used in online and blended learning, such as synchronous learning methods and asynchronous learning methods, which help the reader to select the best learning methods. This paper adopts a qualitative methodology based primarily on UGC regulations and the NEP-2020 policy documents. The analysis suggests that online and blended learning can develop educational opportunities, support lifelong learning, improve flexibility and expand access to quality educational resources. It also describes the challenges and opportunities of online and blended learning.

1. Introduction

Education is undergoing a significant transformation, with digital technologies increasingly influencing how information is created, distributed, and evaluated. This transition is especially significant in India because of

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the country's huge and diversified learner population, geographical inequities, socioeconomic differences, and growing need for flexible forms of education. The National Education Policy (NEP) 2020 establishes a comprehensive framework for responding to these developments, emphasising technology as a significant means of boosting educational access and quality (NEP-2020). Incorporating technology into classroom instruction has created significant interest and research opportunities. Blended learning is widely used in educational institutions for its flexibility, quick delivery, and continuous learning (Rasheed, Kamsin, Abdullah, 2020).

NEP 2020 encourages online and digital education, emphasising that technology should enhance rather than replace classroom instruction. The policy emphasises the importance of face-to-face learning and encourages the development and replication of effective blended-learning models adapted to certain disciplines. It also suggests conducting studies on online assessment, digital pedagogy, content standards, and technological standards.

2. Conceptual understanding of Online and Blended learning

2.1 Online learning

Online learning is defined as educational activities offered primarily via internet-enabled digital platforms. It could comprise recorded lectures, live virtual classrooms, learning management systems (LMS), online discussion forums, digital assignments, quizzes, e-books, virtual laboratories, and online exams.

Online learning may be:

Synchronous: Synchronous learning is when teachers and students interact in real time through a virtual classroom.

Asynchronous: Asynchronous learning allows students to access learning resources at their convenience. Recorded lectures, e-books, discussion boards, assignments and online quizzes are all typical features.

Self-paced: Students have control over the speed and sequence of their learning.

MOOC-based: MOOCs, or Massive Open Online Courses, are online educational programs that allow for unlimited participation and free access via the Internet. Learners take part in large-scale online courses provided by platforms such as SWAYAM.

NEP 2020 promotes an online educational approach to improve access and ensure educational continuity, especially when traditional face-to-face education is disrupted (PM India).



2.2 Blended learning

Blended learning is an educational approach that combines the traditional classroom system with a carefully designed online learning system. In a blended classroom environment, students participate in a mix of face-to-face learning and digital learning experiences. Blended learning models integrate both traditional and online learning methods, allowing learners to benefit from the structure and social interaction of a face-to-face classroom (Bhatt, 2023). It is flexible for students. The inclusive conceptualization indicates that any mix of face-to-face and online learning could be defined as blended learning (Hrastinski, 2019). Blended Learning combines many modalities of delivery, teaching methods, and learning styles to create a dynamic and relevant learning environment (Kaur, 2013).

Common blended models include:

1. **Flipped classroom model:** Students use class time for discussion, problem-solving, and application after studying digital resources beforehand.
2. **Rotation model:** Students mix between face-to-face instruction and online learning activities.
3. **Flex model:** Online learning is the primary structure, with teachers providing face-to-face support when it is required.
4. **Enriched virtual model:** Students generally learn online but periodically participate in face-to-face classes.
5. **Hybrid course model:** A planned part of the curriculum is delivered online, and the remainder is delivered through normal classroom teaching.

3. NEP 2020 and the Policy Framework for Digital Education:

NEP 2020 integrates technology into a larger vision of equitable, Multidisciplinary, flexible, and learner-centred education. Its digital education requirements include online teaching, digital repositories, virtual laboratories, online assessments, teacher training, and digital content and pedagogy standards. The Digital India Campaign aims to empower citizens and create a knowledge economy through digital platforms.

The policy recognizes that digital education involves more than just placing traditional lectures online. It requires proper material, technology, and pedagogical norms. This is especially significant because the quality of digital education is dependent on instructional design, teacher competency, learner support, and evaluation procedures, as well as internet connectivity.



Government initiatives associated with NEP 2020 include the National Digital Education Architecture (NDEAR), the National Education Technology Forum, DIKSHA, SWAYAM, and Virtual Open School initiatives.

At the higher education level, Distance Education Bureau (DEB) is the implementing bureau of the UGC regulations the providing a formal regulatory framework for distance and open education programmes in the country. The regulations establish minimum standards for online education programmes (University Grants Commission).

According to the National Education Policy (2020), given the emergence of digital technologies and the emerging importance of leveraging technology for teaching-learning at all levels from school to higher education, this Policy recommends the following key initiatives:

1. **Pilot studies for online education:** Appropriate agencies, such as the NETF, CIET, NIOS, IGNOU, IITs, NITs, etc. will be chosen to conduct a series of pilot studies, in parallel, to evaluate the benefits of integrating education with online education while mitigating the downsides and also to study related areas, such as, student device addiction, most preferred formats of e-content, etc. The results of these pilot studies will be publicly communicated and used for continuous improvement.
2. **Digital infrastructure:** There is a need to invest in the creation of open, interoperable, evolvable, public digital infrastructure in the education sector that can be used by multiple platforms and point solutions, to solve for India's scale, diversity, complexity and device penetration. This will ensure that the technology-based solutions do not become outdated with the rapid advances in technology.
3. **Online teaching platform and tools:** Appropriate existing e-learning platforms such as SWAYAM, DIKSHA, will be extended to provide teachers with a structured, user-friendly, rich set of assistive tools for monitoring the progress of learners. Tools, such as, two-way video and two-way audio interfaces for holding online classes are a real necessity, as the present pandemic has shown.
4. **Content creation, digital repository, and dissemination:** A digital repository of content including creation of coursework, Learning Games & Simulations, Augmented Reality and Virtual Reality will be developed, with a clear public system for ratings by users on effectiveness and quality. For fun - learning, student-appropriate tools like apps, gamification of Indian art and culture, in multiple languages, with clear operating instructions, will also be created. A reliable backup mechanism for disseminating e-content to students will be provided.
5. **Addressing the digital divide:** Given the fact that there persists a substantial section of the population whose digital access is highly limited, the existing mass media, such as television, radio,



and community radio will be extensively used for telecasts and broadcasts. Such educational programmes will be made available 24/7 in different languages to cater to the varying needs of the student population. A special focus on content in all Indian languages will be emphasized and required; digital content will need to reach the teachers and students in their medium of instruction as far as possible.

6. **Virtual Labs:** Existing e-learning platforms such as DIKSHA, SWAYAM and SWAYAMPRAKHA will also be leveraged for creating virtual labs so that all students have equal access to quality practical and hands-on experiment-based learning experiences. The possibility of providing adequate access to SEDG students and teachers through suitable digital devices, such as tablets with pre-loaded content, will be considered and developed.
7. **Training and incentives for teachers:** Teachers will undergo rigorous training in learner-centric pedagogy and on how to become high-quality online content creators themselves using online teaching platforms and tools. There will be emphasis on the teacher's role in facilitating active student engagement with the content and with each other.
8. **Online assessment and examinations:** Appropriate bodies, such as the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other identified bodies will design and implement assessment frameworks encompassing design of competencies, portfolio, rubrics, standardized assessments, and assessment analytics. Studies will be undertaken to pilot new ways of assessment using education technologies focusing on 21st century skills.
9. **Blended models of learning:** While promoting digital learning and education, the importance of face-to-face in-person learning is fully recognized. Accordingly, different effective models of blended learning will be identified for appropriate replication for different subjects.
10. **Laying down standards:** As research on online/digital education emerges, NETF and other appropriate bodies shall set up standards of content, technology, and pedagogy for online/digital teaching-learning. These standards will help to formulate guidelines for e-learning by States, Boards, schools and school complexes, HEIs, etc.

4. Major Online and Blended Learning Models:

4.1 **Synchronous Online Learning:** In synchronous learning, teachers and students interact through live virtual classes. This platform supports lectures, presentations, discussions, collaborative activities, and provides immediate feedback. There are some advantages-

- Real-time interaction.



- Social interaction among students.
- Immediate doubt clarification.

4.2 Asynchronous Online Learning: Asynchronous learning allows students to access learning resources at their leisure. Recorded lectures, e-books, discussion boards, assignments, and online quizzes are common components. This concept is especially beneficial for students who have employment, family responsibilities, or limited access to set timetables.

4.3 Flipped Classroom: The flipped classroom flips the normal sequence of teaching. Students first study videos, texts or other digital resources independently, and classroom time is devoted to application, discussion, projects and problem-solving. This paradigm closely reflects the learner-centred and competency-oriented approach promoted by NEP 2020

4.4 Technology-Supported Blended Learning: This model incorporates digital resources into traditional classroom instruction. In addition to traditional classroom instruction, teachers can employ LMS platforms, online quizzes, digital libraries, virtual laboratories, recorded lectures, and collaborative tools. Such integration is especially essential to NEP 2020 because the policy acknowledges the importance of face-to-face learning while promoting technology-enabled education.

4.5 MOOC-based Learning: Massive Open Online Courses (MOOCs) refer to a method of education where learners use the internet to gain knowledge or skills. MOOCs is a well structure learning MOOCs are online courses designed for a large number of learners, often providing video lectures, reading materials, quizzes, assignments, discussion forums, and certificates.

4.6 Virtual Laboratories and Simulations: Virtual laboratories allow students to perform virtual experiments in digital environments. They can supplement practical instruction in situations when physical laboratory resources are limited. However, virtual laboratories should generally supplement rather than replace hands-on practice, particularly in subjects where psychomotor skills are important.

5. Opportunities of Online and Blended Learning

5.1 Flexibility: Digital learning provides flexibility in terms of time, location, and space. Students can revisit anytime, anywhere recording lectures, learning materials, enabling individualized learning pathways.



5.2 Personalized learning: Differentiated instruction can be enabled by technology such as adaptable resources, digital assessment, and learning analytics. Students can receive additional practice in areas where they are having difficulty.

5.3 Active Learning: It demonstrates the transition from passive to active learning. The classroom transforms from a presentational structure to active learning. This involves putting learners in situations that encourage them to read, speak, listen, and think (Kaur, 2013).

5.4 Multilingual and Inclusive Content: Digital platforms enable the creation and distribution of educational content in Indian languages and formats that are easily accessible. This can promote language variety and increase participation among students who may be underserved by English-dominated educational resources.

5.5 Continuous Professional Development: Online education can offer teachers and working professionals possibilities for continual learning without necessitating extended absences from their jobs. NEP 2020 emphasizes continuous professional development and the integration of technology into teacher education and professional learning.

6. Challenges of Online and Blended Learning

6.1 Technical Challenges: The technological challenges do not involve getting technologies to work on networks. Instead, they focus on using and supporting appropriate technology to ensure program success (Kaur, 2013). The technical challenges include-

- Ensure that participants can successfully use the technology.
- Resisting the impulse to use technology just because it is available.

6.2 Digital Divide: The biggest challenge is unequal access to devices, reliable internet, electricity, and digital resources. Students from economically deprived homes may have to share electronic devices or rely on smartphones with limited capabilities.

6.3 Lack of trained teachers: Effective online teaching requires more than transferring classroom lectures to video conferencing platforms. Teachers need training in digital pedagogy, instructional design, online assessment, learner engagement and digital content creation.



6.4 Organizational Challenges: Although management frequently concurs that blended learning is the best course of action for training programs, it ignores the fact that this is a complicated process that requires consideration beyond a single program (Kaur, 2013). Organizational challenges are as follows-

- Overcoming the misunderstanding that blended learning is less successful than traditional classroom training.
- Redefining the function of the facilitator.
- Managing and monitoring participant progress (Hofmann, 2011).

6.5 Language and Accessibility barriers: A large proportion of high-quality digital material remains organized in English. Learners with disabilities may also confront inaccessible platforms, films without captions, and poorly designed documents or interfaces that may not work with assistive devices.

6.6 Privacy and Data Security: Digital education encompasses the gathering and analysis of student data is an integral part of digital education. Institutions must consequently develop responsible policies for data protection, cybersecurity, consent, and the right use of learning analytics.

Conclusion

NEP 2020 establishes a strong policy foundation for incorporating online and hybrid learning into India's education system. Its approach is crucial because it goes beyond just advocating the replacement of classrooms with digital platforms. Instead, it acknowledges the complementary roles of technology and face-to-face education and advocates for effective blended models adapted to various educational environments.

Online and blended learning provide significant opportunities to increase access, flexibility, promote lifelong learning, improve resource availability, and create digital competencies. Simultaneously, the digital gap, poor infrastructure, teacher preparedness, learner engagement, assessment, accessibility, language, and quality assurance continue to be significant problems. The future of digital education in India is thus dependent on equality, quality, and pedagogy, rather than technology alone. To ensure the successful implementation of NEP 2020, governments, regulators, institutions, instructors, students, and technology provider must work together. The best sustainable approach is likely to be one in which digital learning enhances educational opportunities while face-to-face interaction maintains the social, practical, and experiential features of education.



Finally, online and blended learning should be considered as part of a larger shift toward flexible, inclusive, learner-centred, and competency-based education.

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