

# SWAYAM and SWAYAM plus: Catalysts for Inclusive Education in India

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## Abstract

*India is planning to deliver universal school education by 2030 and a 50% higher education enrollment rate by 2035, using technological innovation to enhance inclusivity and quality in education. The flagship MOOC platform of India, SWAYAM, plans to empower students from disadvantaged groups through free courses, and SWAYAM Plus targets employability through industry-agnostic professional development. The current study assessed their impact on technical architecture and functionalities using descriptive survey design with quantitative questionnaires, web user and course team analytics. The results indicate improved access and skill building for students but also indicate challenges like the digital divide and poor course completion rates. Solution proposals for enhancing accessibility and participation are presented, highlighting the platforms' capability to democratize education and sustainable development.*

*Keywords: MOOCs, NEP 2020, Inclusive Education, Employability, Technology*

## 1. Introduction

Open and distance learning has been a disruptive innovation in the global higher and school education landscape (Christensen, 2008 ; Christensen, Horn, Caldera, & Soares, 2011). “Massive open online courses (MOOCs) have been at the center of the disruption, offering scalable, flexible, and typically freely available education, which enables alignment with Sustainable Development Goal 4 (ensure quality education for all-inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030 (UNESCO, 2015)”. Apart from facilitating lifelong learning, MOOCs facilitate social inclusion through the provision of education access to people who are typically marginalized from formal education settings, such as those marginalized from marginalized and rural groups and those who live with economic disadvantages (UNESCO, 2016). Over the last decade, MOOCs have emerged to be a lightning rod of technology-enhanced learning (TEL), offering impoverished, low-cost, scalable, world-class learning opportunities (Wosnitza & Yousef, 2014). This emergence of MOOCs has, however, sparked critical debate. On the one hand, the wonderfulness of MOOCs comprises their accessibility and lower or no costs.

However, there are issues regarding difficulties associated with limited interactivity, and inefficient learner engagement by students (Baker & Passmore, 2016). The MOOC concept has, thus, fluctuated from optimism to critique. The early enthusiasm for MOOCs (Yuan & Powell, 2013) gave way to more nuanced appraisals of

MOOCs' pedagogical and structural limitations. MOOCs, which also provide a range of research possibilities (Diver & Martinez, 2015), provide researchers with a series of opportunities to study the factors and constructs related to instruction in MOOCs and to consider aspects related to student motivation. As highlighted in a systematic review of MOOC literature from 2008 to 2012, the study examined the development and potential of MOOCs in open and distributed learning (Liyaganawardena, Adams, & Williams, 2013).

In India, where issues regarding access, quality, and equity abound, MOOCs present reform possibilities. Infrastructure difficulties, a lack of trained educators, and gaps in curriculum access are obvious in rural and impoverished regions (Sharma R, 2018). MOOCs, especially through national initiatives, can provide a means of bridging infrastructure challenges. The MOOC concept, first established by Cormier and Alexander in 2008, rapidly caught on globally by 2011 (Faizul N. & Senthil V., 2015). MOOCs allow for large enrolments and are open to anyone with an internet connection, thus transforming learning and teaching. With Open Educational Resources (OERs) featuring resources inclusive of books, videos, educational modules, and others freely available for teaching, learning, and research (Butcher, 2011; Groom, 2013; Chauhan (2017) draws attention to the opportunities afforded by MOOCs in India, emphasizing the balancing act of their ability to increase access to education, alongside the infrastructure limitations and maintenance of student engagement. Das and Mishra (2022) highlight the challenges and disparities for marginalized students and the concept of digital inclusion in Indian higher education. Goswami (2020) discusses the significant opportunities MOOCs present, along with the challenges related to increasing access and engagement of students. Students taking part in MOOCs watch video lectures, read materials, join discussion groups, do exams, and earn certification, all online (Samanta A, 2018). MOOCs have come to play a big role in India by supporting digital skill development, thanks in part to stronger partnerships between universities and companies (Banerjee & Dey, 2023). There is a strong need to develop new teaching approaches to draw more students into MOOCs in India (Jain, Sharma, and Verma, 2021). After realizing these potentials, the Ministry of Education introduced SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) as a MOOC platform for the whole country in 2017. SWAYAM is aimed at equality of access to quality learning material and includes postgraduate, graduate, and high school-level courses prepared by the central universities, IIMs, and IITs, NCERT, NIOS etc and SWAYAM Plus (Ministry of Education, 2022). It supports labor market readiness through the dissemination of technology-updated courses in areas like cyber security, blockchain, and artificial intelligence. SWAYAM Plus has added features like career guidance, mentorship, and small certificates that address the employability issue and aligning students' studies with the labor market demand (National Digital University, 2024). The study is organized to determine how SWAYAM and SWAYAM Plus support the shaping of inclusive and equitable education that provides employable skills. The study also provides insight into the way the platforms contribute to India's general education and development and recommends the way to further their impact according to international best practices in digital education.

## **2. Methodology**

A descriptive study design in the research is used to examine the impact the MOOC platforms SWAYAM and SWAYAM Plus have on quality and inclusive digital learning in India.

### **2.1 Research Design and Data Sources**

The study relied on both quantitative and qualitative methods. Primary data was collected using structured

Google Form questionnaires designed separately for learners and course coordinators. Additionally, focus group discussions (FGDs) were conducted with key stakeholders, including platform administrators, and institutional heads, to explore implementation challenges and policy-level perspectives. Secondary data was obtained from official SWAYAM website & reports, enrollment and registration statistics, and existing literature on MOOCs in India.

## **2.2 Sampling Technique**

A purposive sampling method was adopted to target participants directly involved with the platforms. The sample included 500 Learners from diverse academic and regional backgrounds, 50 Course Coordinators from various disciplines and institutions.

## **2.3 Data Collection Tools**

The primary tools included Google Form-based and offline questionnaires for learners and course coordinators, qualitative insights and document analysis of platform data, policy documents, and academic literature.

## **2.4 Data Analysis**

Quantitative responses were analyzed using descriptive methods. Qualitative data from samples were coded and thematically analyzed to identify recurring themes related to user satisfaction, access, content relevance, and engagement. Graphs and tables were used to present key findings, alongside synthesized stakeholder suggestions for platform improvement.

## **3. Results**

The research findings reveal significant trends in course completion, student enrollment, completion rate, user experiences etc across various national coordinators and learners involved with the SWAYAM and SWAYAM Plus platforms.

The research findings indicate that, as of May 9, 2025, 16350 plus credit and non credit courses (Credit Courses- Upon successful completion, learners receive a certificate with credit points, which may be transferable to their home university (as per UGC guidelines) & non credit courses-Are meant for knowledge enhancement, up skilling, or lifelong learning) are available on SWAYAM portal, a total of 46,460,137 learners have enrolled in various courses, with 13,235 courses completed across a range of institutions. Among these, the University Grants Commission (UGC) led with 283 completed courses, followed by NPTEL (National Programme on Technology Enhanced Learning) with 7,620 completions. Other institutions, such as the Consortium for Educational Communication (CEC) and the National Council of Educational Research and Training (NCERT), reported 1,708 and 341 completions, respectively. The All India Council for Technical Education (AICTE) and Indira Gandhi National Open University (IGNOU) contributed 430 and 1,563 completed courses, respectively. The National Institute of Open Schooling (NIOS) recorded 567 completions, while the Indian Institute of Management Bangalore (IIMB) and the National Institute of Technical Teachers Training and Research (NITTTR) showed moderate completion rates. Institutes of National Importance (INI) had the lowest number of completions, with only 46.

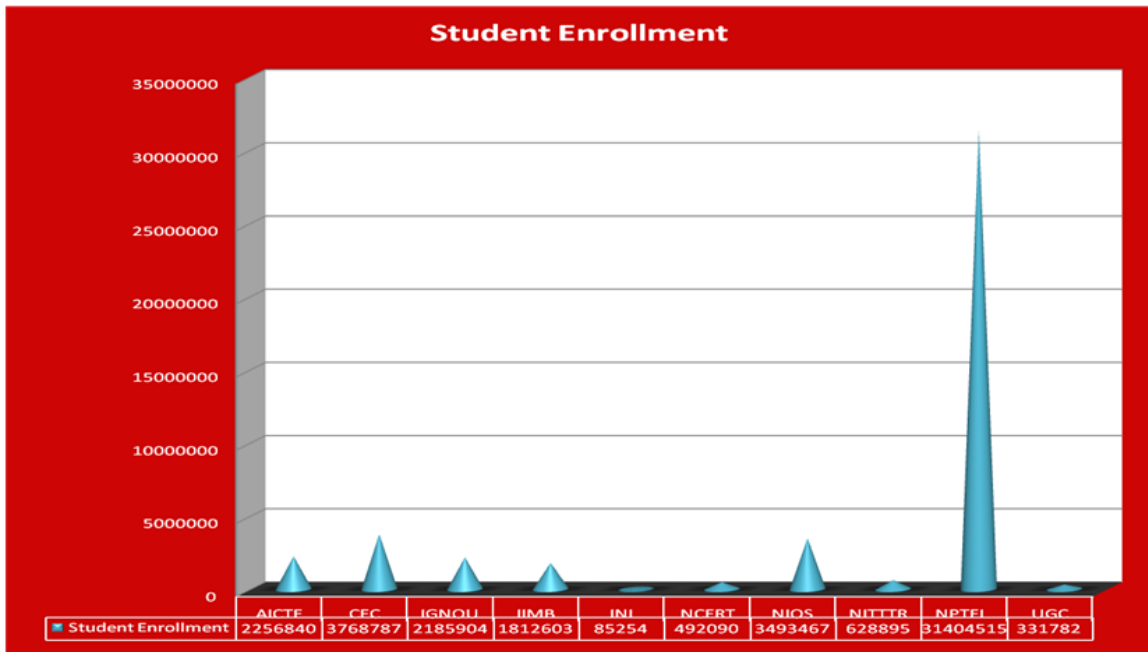


Figure 1: Student enrollment across various national coordinators from 2017 to 2025

The student enrollment data reveals notable disparities among national coordinators. NPTEL leads significantly with over **31.3 million** enrollments, demonstrating its extensive reach. High enrollments are also seen in CEC (3.77 million) and NIOS (3.49 million). AICTE and IGNOU contribute substantially with over **2 million** enrollments each, while UGC reports a moderate **331,782**. IIMB and NITTTR also show strong participation, with **1.81 million** and **628,895** enrollments, respectively. At the lower end, INI has the least, with just **85,254** students enrolled.

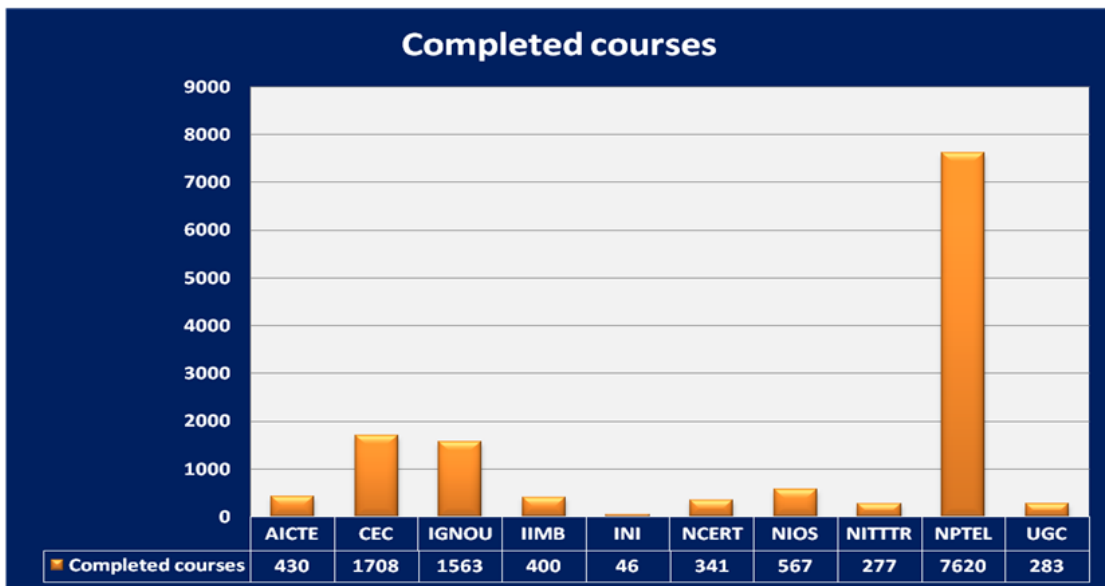


Figure 2: Student completed courses across various national coordinators from 2017 to 2025

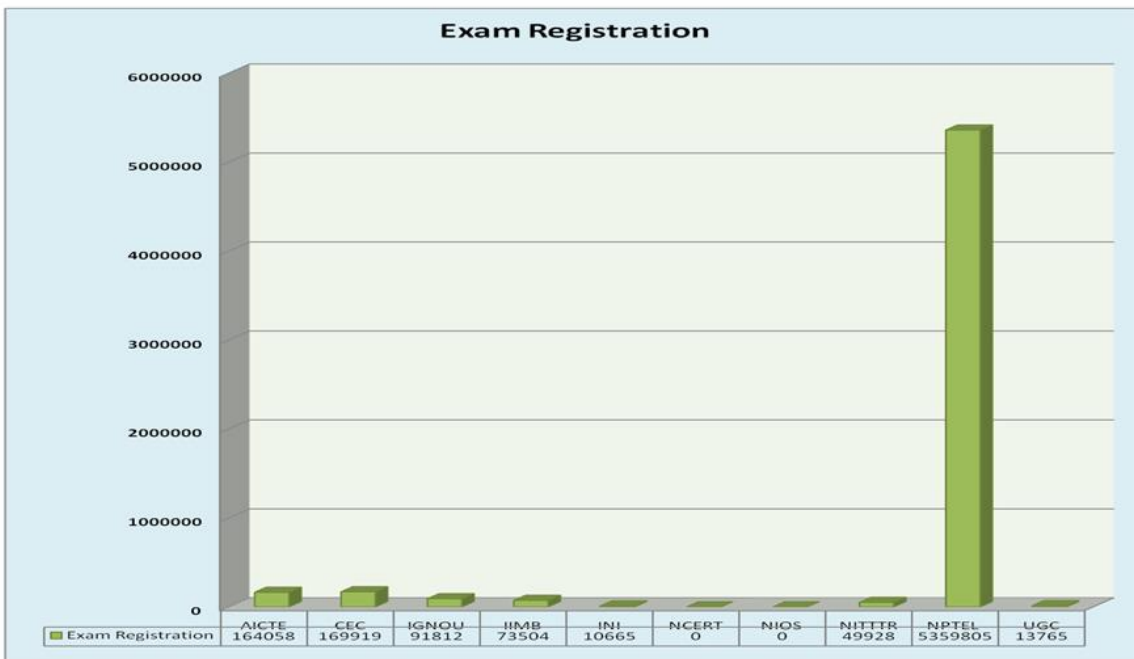


Figure 3: Learners registered across various national coordinators from 2017-2025

The exam registration data highlights substantial disparities among national coordinators. **NPTEL** leads overwhelmingly with **over 5.3 million** registrations, indicating its broad reach and strong learner engagement. **CEC** and **AICTE** follow with **169,919** and **164,058** registrations, respectively. Moderate figures are seen for **IGNOU (91,812)** and **IIMB (73,504)**, while **NITTTR** reports **49,928**. In contrast, **UGC** shows relatively low participation with **13,765** registrations. Notably, **NIOS** and **NCERT** report **no exam registrations**, suggesting limited activity or unavailable data from these coordinators.

The successful registration data highlights key trends across national coordinators. **NPTEL** leads with 3,456,211 successful registrations, indicating strong engagement. **CEC** follows with 97,581, while **IGNOU** and **IIMB** report 49,069 and 35,244, respectively. **AICTE** and **UGC** show similar figures, with 19,870 and 19,709. **NITTTR** records 25,887 successful registrations. In contrast, **NCERT** and **NIOS** report none, suggesting either data unavailability or no successful registrations during the period.

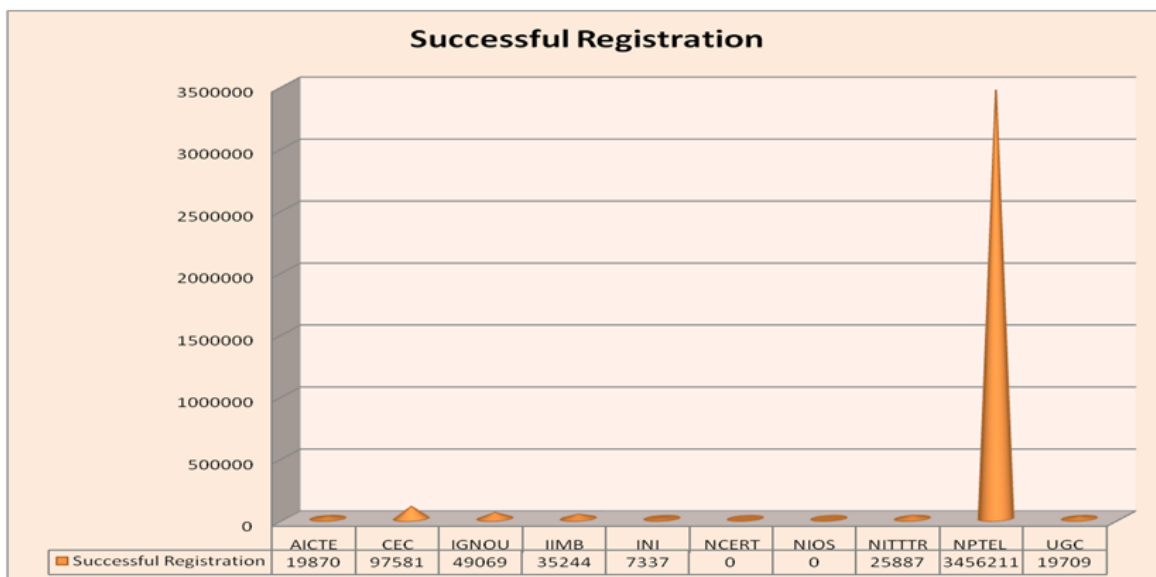


Figure 1: successful registration of learners from 2017 to 2025

The results of the study are based on the responses received from two key stakeholder groups: **learners (n = 200)** and **course coordinators (n = 50)** involved in the SWAYAM and SWAYAM Plus platforms. The analysis focuses on user demographics, engagement patterns, platform effectiveness, challenges faced, and perceptions of the platforms' impact on teaching and learning.

### 3.1 Demographic Profile of Respondents

#### 3.1.1 Learners

- **Age Distribution:** The majority of learners (65%) were aged between 18–25 years, reflecting strong uptake among undergraduate and postgraduate students. About 27% were aged 26–35 years, indicating growing interest among working professionals.
- **Gender:** 71% of respondents identified as male and 29% as female, while 1% preferred not to disclose.
- **Academic Background:** Most learners were pursuing or had completed degrees in engineering (38%), sciences (24%), commerce/management (18%), or humanities (14%).

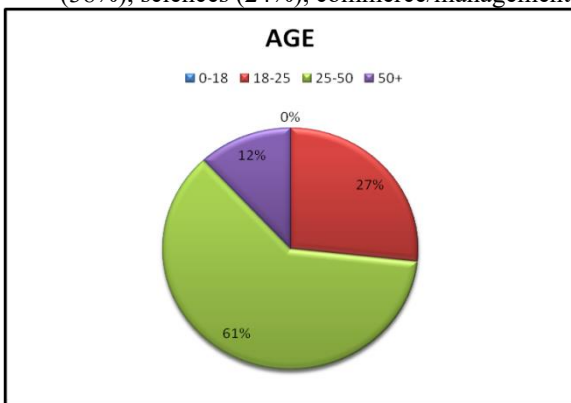


Figure 5: Age of Learners

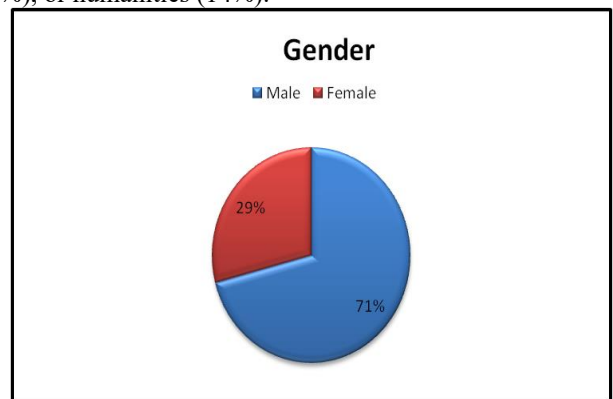


Figure 6: Gender of Learners

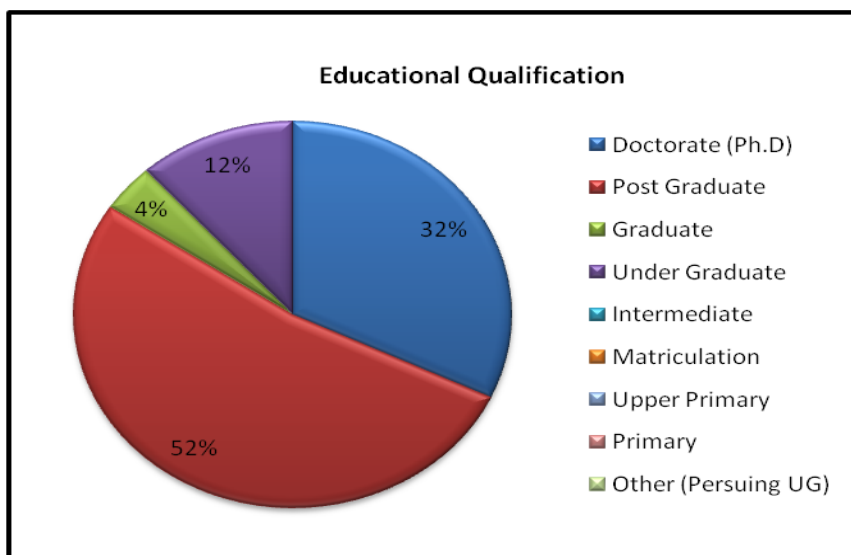


Figure 7: Educational Qualification

### 3.1.2 Course Coordinators

- **Affiliations:** The coordinators were affiliated with institutions such as IITs, Central Universities, and State Universities etc.
- **Experience:** Nearly 8.3% have less than 5 years of experience, 22.2% have between 5 to 10 years of experience, 16.7% have between 10 to 15 years of experience, 8.3% have between 15 to 20 years of experience, 8.3% have between 20 to 25 years of experience, 8.3% have more than 25 years of experience, and 27.8% have no experience (NIL).

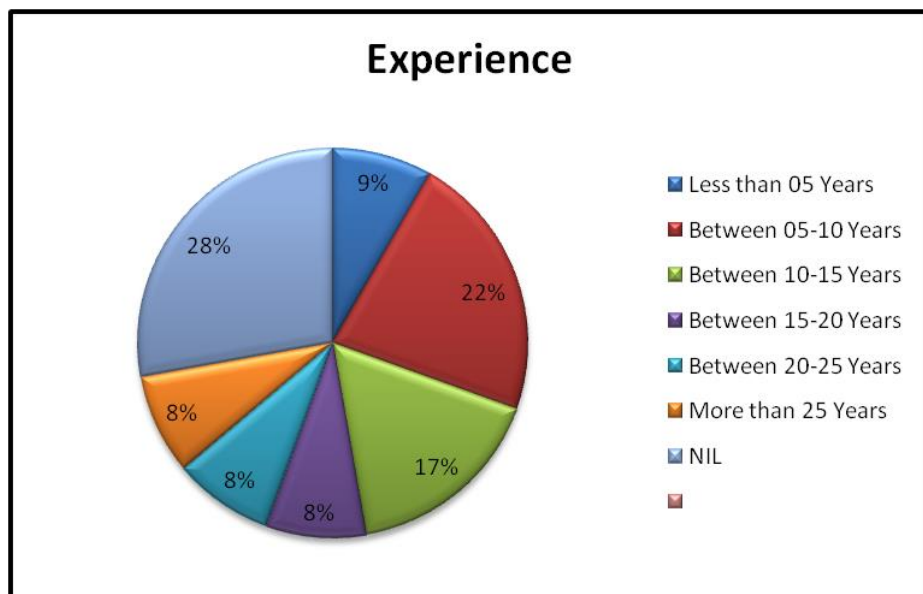


Figure 8: Experience

## 3.2 Learner Experience with SWAYAM and SWAYAM Plus

### 3.2.1 Platform Usability and Access

Learners' feedback on the SWAYAM portal regarding platform usability and access indicates generally positive responses regarding the course experience. In terms of **quality of content** 46.9% strongly agreed and 33.6% agreed that the overall quality was satisfactory. When it comes to **delivery of the content**, 45.2% strongly agreed and 35.3% agreed that it was engaging and easy to learn. For **availability of the content**, 46.5% strongly agreed and 32.5% agreed that the materials were easily accessible as needed. Regarding the **length of content**, 42.5% strongly agreed and 36.3% agreed that the length was appropriate. However, there were smaller percentages of learners who disagreed or strongly disagreed across these categories, indicating some room for improvement in certain aspects of the courses.



Figure 9: Learners' feedback on platform usability and access

### 3.2.2 Pedagogical Planning and Content Delivery

Learner feedback on pedagogical planning and content delivery for the SWAYAM portal was largely positive. 43.3% strongly agreed and 36% agreed that the content was engaging and helped with understanding. 45.8% strongly agreed and 33% agreed that the material was clear. Quizzes, MCQs, and assignments were seen as effective learning tools, with 48.6% strongly agreeing and 34% agreeing. Downloadable content (PDFs) also received high praise, with 48.4% strongly agreeing and 33.2% agreeing that it reinforced learning. Despite some minor disagreements, the overall response suggests that the pedagogical design and content delivery were effective in supporting the learning process.

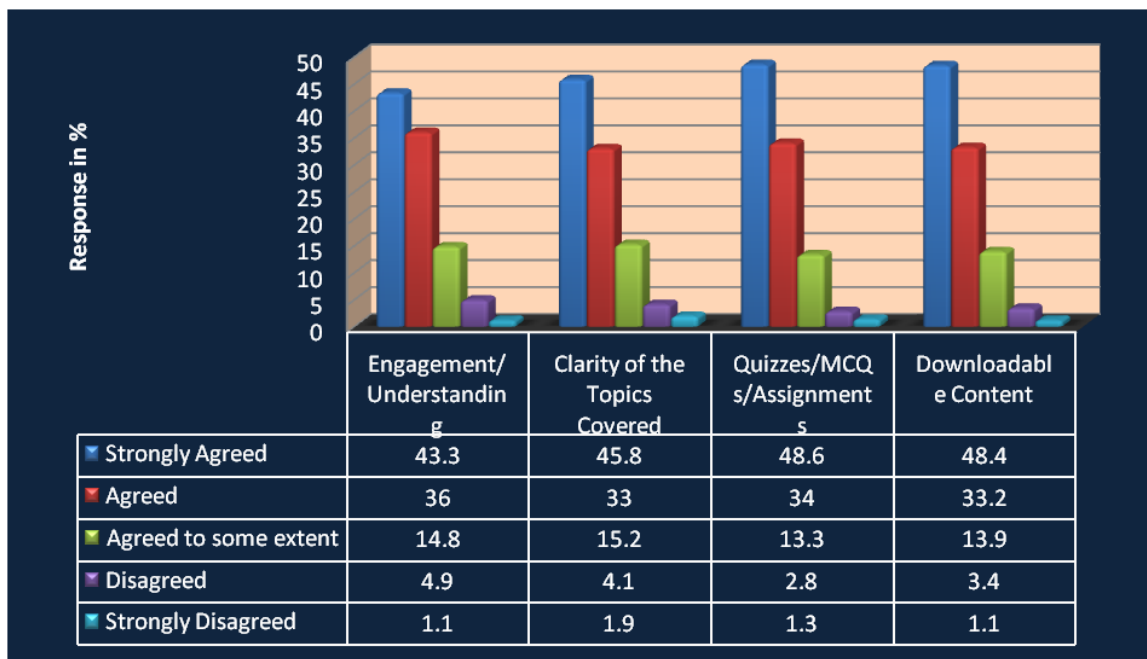


Figure 10: Feedback on Pedagogical Planning and Content Delivery

### 3.2.3 Feedback on Instructor support and Evaluation

The learners response on **Feedback and Evaluation** on the SWAYAM platform shows generally positive responses. Regarding **Instructor Support**, 45.8% of learners strongly agreed and 34.5% agreed that the discussion forum was useful for interacting with the coordinator and addressing queries. In terms of **Evaluation and Certification**, 48.2% strongly agreed and 34% agreed that the evaluation and certification process was beneficial in enhancing their learning experience. Lastly, for the **overall learning experience**, 46.5% strongly agreed and 35.8% agreed that the course aspects, including feedback and evaluation, contributed positively to their overall experience.

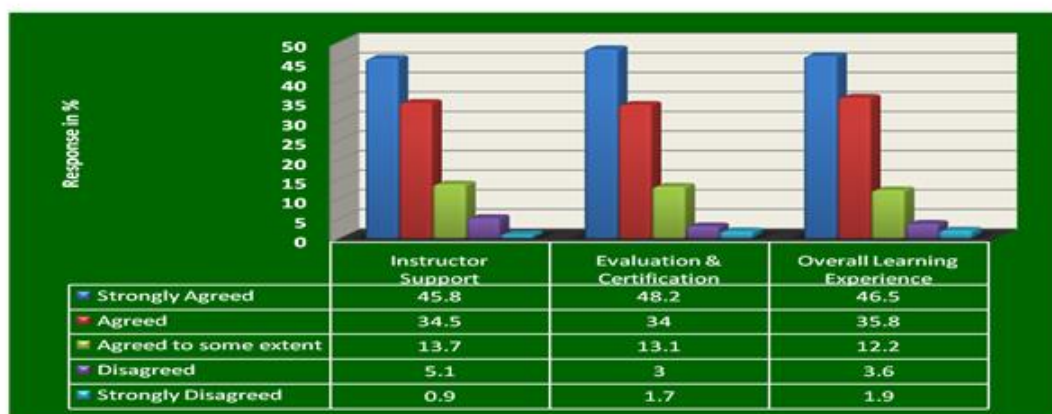


Figure 11: Feedback on Instructor Support and Evaluation & Certification

## 3.3 Course Coordinators experience

### 3.3.1. Course Content and Design

Feedback on **course content management** revealed that 42.9% of course coordinators strongly agreed and 28.6% agreed that it is easy to create, update, and maintain course materials, with a smaller proportion, 21.4%, agreeing to some extent. Only 7.1% disagreed, indicating that the content management process is generally user-friendly. Regarding **course design and alignment**, 42.9% strongly agreed, and another 42.9% agreed that the courses are well-designed and align with the syllabus and educational standards, with only a small portion (14.3%) agreeing to some extent. **Course organization and accessibility** were similarly rated, with 42.9% strongly agreeing and 35.7% agreeing that course materials are well-organized and easily accessible for both instructors and students. Regarding **platform functionality**, 42.9% of coordinators strongly agreed and 28.6% agreed that they rarely faced technical issues on the SWAYAM platform.

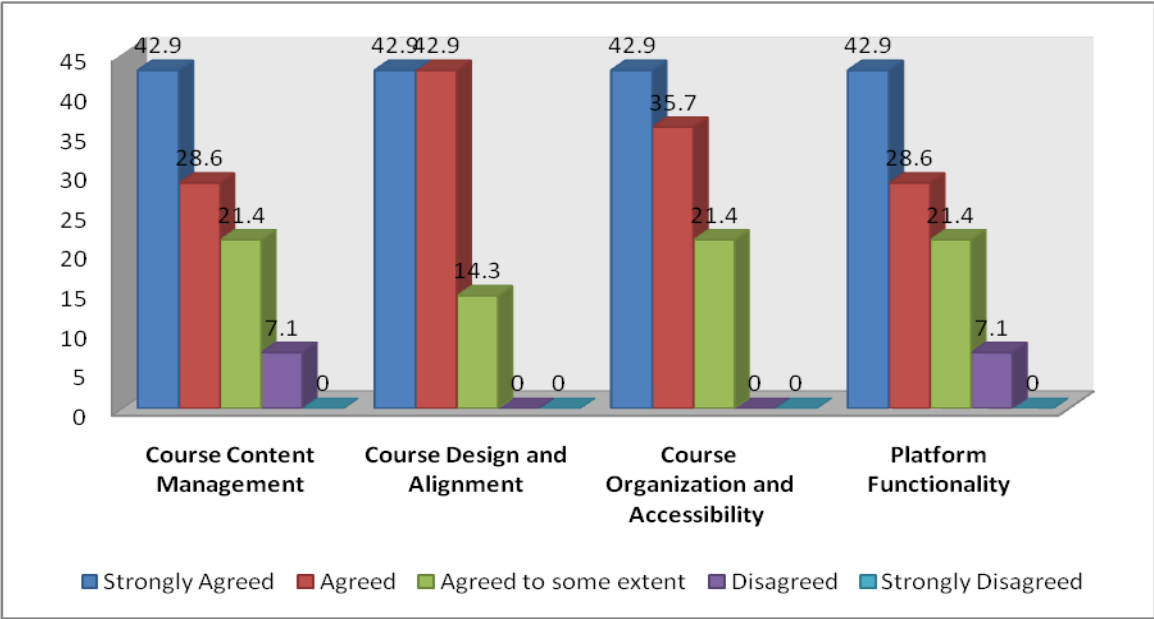


Figure 12: Feedback on course content management

**3.3.2. Student Engagement and Technical Support**

Regarding **student engagement and technical support**, 28.6% of coordinators strongly agreed, and another 28.6% agreed that the processes for enrolling students and keeping them engaged throughout the course are effective. However, 28.6% agreed only to some extent, and 14.2% expressed dissatisfaction, reflecting some challenges in maintaining student engagement. On **course effectiveness and student satisfaction**, 28.6% strongly agreed, and 28.6% agreed that the courses meet students' learning needs, though 35.7% agreed only to some extent, with 7.1% expressing dissatisfaction.

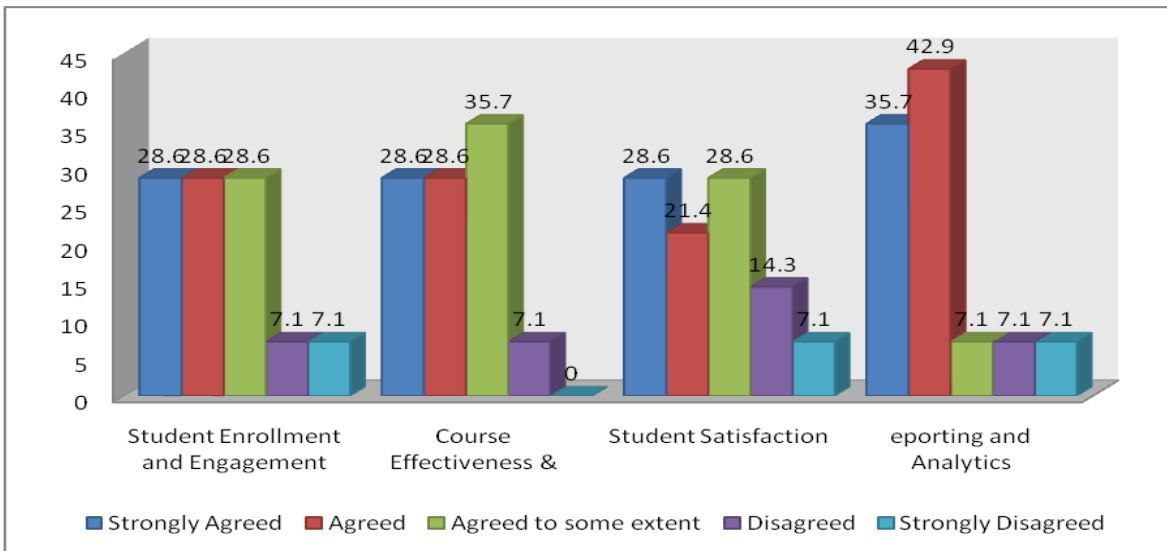


Figure 13: Student Engagement and Technical Support

### 3.3.3. Assessment, Feedback, and Reporting

Feedback on **assessment and feedback systems** was less favorable, with 28.6% strongly agreeing and 21.4% agreeing that the systems for creating assessments, grading, and giving feedback are effective. However, 28.6% agreed to some extent, and a significant 21.4% disagreed, pointing to possible areas for improvement in the assessment and feedback process. In terms of **reporting and analytics**, 35.7% of coordinators strongly agreed, and 42.9% agreed that the reporting tools for tracking student progress and course performance are useful, while 7.1% disagreed, suggesting room for improvement in these tools.

### 3.3.4. Course Efficiency and Overall Experience

On course efficiency, 35.7% strongly agreed and 35.7% agreed that course updates, feedback, and technical issues were handled smoothly, while 28.6% agreed to some extent or disagreed. Regarding overall experience, 28.6% strongly agreed, and 42.9% agreed that their experience was positive, with 28.6% agreeing to some extent. Most coordinators found the platform effective but identified areas for improvement in student engagement, assessments, and technical support. Technical support received mixed feedback, with 28.6% strongly agreeing and 35.7% agreeing it was helpful, while 21.4% disagreed.

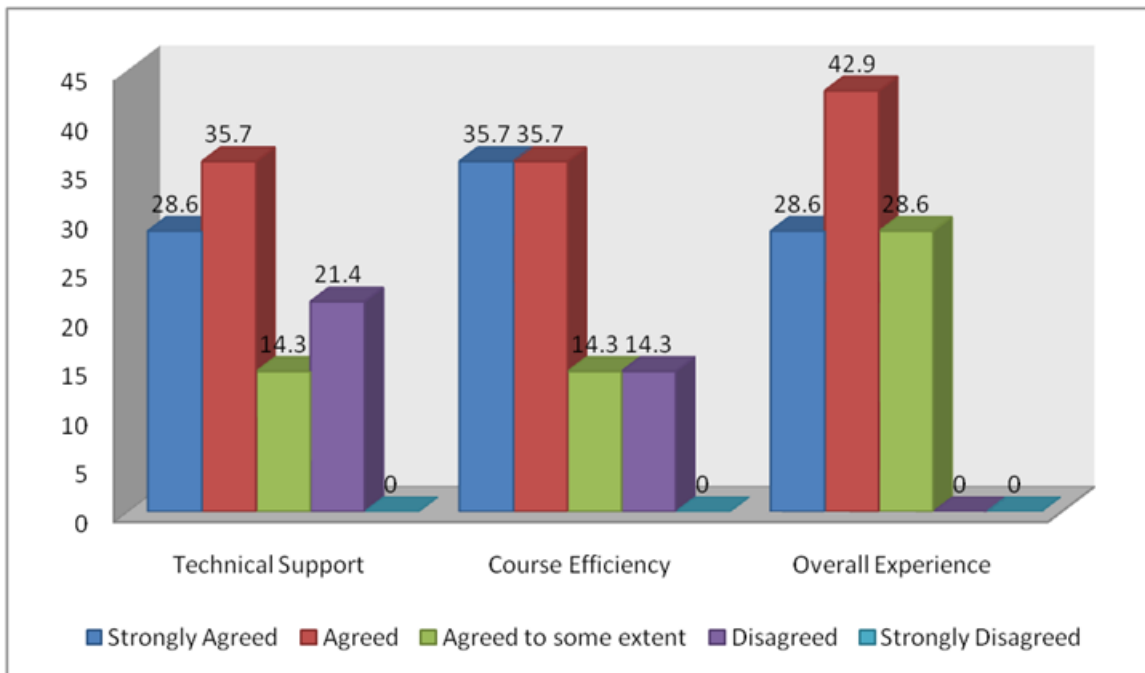


Figure 14: Course Efficiency and Overall Experience

### 3.4 Suggestions from Respondents

- **For Learners:**

Learners provided a wide range of suggestions to improve the SWAYAM platform. A recurring theme was the need to update course content to align with current industry standards, particularly in technical fields like Engineering, where students noted outdated lectures and the lack of practical tools or software integration. Many learners suggested making courses more engaging and interactive by incorporating case studies, real-life examples, quizzes, live doubt-clearing sessions, and discussion forums. Many people suggest making the assignments and tests tougher, mainly for 12-week courses, to preserve the respect given to the certificates. Problems with the way things are organized in the app, difficulties moving from one area to another, and the fact that support or updates are sometimes not quickly communicated were observed. Advice from students called for an easy-to-use website and more efficient support, which is mostly required when registering for exams. While learners acknowledged the flexibility and high standard of content from major schools, they said they required more instruction on skills needed in their careers. Most responses concluded that SWAYAM is a useful and inclusive platform, an observation that led many to request it be improved as technology and the job market develop.

- **For Coordinators:**

A number of suggestions by the course coordinators have been made to step up the effectiveness as well as learner engagement of the SWAYAM platform. The issue of inclusion of more hands-on training is key among the five main recommendations, with an equal balance of theory and more practical settings, virtual labs, etc, especially for vocational and technical courses. Given for discussion by Coordinators was the need to integrate

real-life examples, module-wise assessments, case studies, and virtual viva to make learning more Application-oriented. To enhance engagement, they suggested including interactive tools, viz. quizzes, polls, discussion forums, and doubt-clearing sessions. Several coordinators had urged SWAYAM certificates to get greater recognition. It was also suggested that awareness of vocational course certifications be expanded and the frequency at which courses are offered be increased. In general, the coordinators recognized the potential of the platform. However, they indicated the importance of improving content delivery, student support, and collaboration at the institutional level to maximize the platform's impact.

## **4. Discussion**

The results of this study will have implications for broadening, facilitating, and delivering quality digital education in India, particularly through the utilization of India's major MOOC platforms, SWAYAM and SWAYAM Plus. A long-standing digital divide involving connectivity problems, low digital literacy, and devices remains a barrier to reaching many—Kumar & Sharma (2021) and Das & Mishra (2022), in their earlier studies, have reported similar findings. In terms of content quality, learners appreciated the academic rigor and outcome-based structure of courses, reflecting global best practices (Margaryan, Bianco & Littlejohn, 2015).

SWAYAM Plus, introduced in 2024, enhances the employability agenda by offering industry-relevant courses in fields like AI and digital marketing, aligning with Digital India and Skill India missions (NITI Aayog, 2021). Still, many learners are unaware of its micro-credentials and career services, pointing to a need for better orientation and outreach. Faculty involvement has improved, but institutional constraints—such as lack of training in LMS use, video production, and instructional design—limit scalability. Prior research stresses the importance of professional development and incentives for faculty engagement (Patra et al., 2020; Mishra, 2023).

To ensure long-term success, policy efforts must support personalized learning, multilingual content, interactive pedagogies, and credit integration via frameworks like the Academic Bank of Credits (ABC). As India advances toward SDG 4 (United Nations, 2015), these platforms must evolve into holistic learning ecosystems that address infrastructural, instructional, and institutional gaps to foster equitable and lifelong learning.

## **5. Conclusion**

This study highlights the design, implementation, and impact of India's SWAYAM and SWAYAM Plus platforms from the learners' and educators' perspectives, especially as it relates to expanding access to flexible and affordable digital education. SWAYAM has achieved the objectives of NEP 2020 and the Digital India initiative by touching the demographic with academia-centric courses in all disciplines. In contrast, SWAYAM Plus has solved the issue of employability by providing industry-linked skill-based learning. However, with that said, there remain some important areas of challenge around digital inequity, learner engagement, and a lack of institutional and technological support for educators. Both platforms need to evolve toward more learner-centric and more inclusive ecosystems to fully realize their potential. This covers increasing interactivity, scaling multilingualness, faculty training, linking micro-credentials to national recognition

systems such as those of the Academic Bank of Credits (ABC), and the strengthening of industry and public-private partnerships. Finally, SWAYAM and SWAYAM Plus hold great promise for the delivery of digital education in India, and their long-term sustainability will hinge on ongoing innovation, open-minded policy-making, and specific endeavors to bridge the current gaps in the socio-digital divides.

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