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Original Article

Digital Learning in Higher Education in India: An Exploration of Government Initiatives at the University of Jammu

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ABSTRACT

Digitalization, driven by advancements in information technology and internet connectivity, has transformed education systems globally. In India, the government has launched several digital initiatives to enhance learning experiences and accessibility. Key initiatives such as SWAYAM, SWAYAM PRABHA, the National Digital Library, online education platforms, and e-Learning services are designed to create engaging, collaborative, and media-rich virtual environments that offer significant advantages over traditional classroom teaching methods. This research paper investigates the various digital initiatives introduced by the Government of India in higher education and examines their adoption and popularity among students at the University of Jammu. The study reveals a growing preference for digital platforms, with students increasingly enrolling in online courses and utilizing e-content from these resources. These platforms facilitate flexible, just-in-time learning and provide access to extensive content, promoting the globalization of knowledge and information. Additionally, the paper explores the challenges and barriers to the effective implementation of digitalization in higher education.

Keywords: Digitalization, Higher Education, Digital Initiatives, E-Learning

INTRODUCTION

Education is essential for development of individual as well as for the development of a nation. It is a process of acquiring social and physical abilities that is the utmost demand of the society. In most countries, education has been given top priority and even Government of India has spent a huge amount for improving their whole education system. In India, about 3.5% of GDP (Gross Domestic Product) has spent in education. The fact of development by education is not denied by any country. That's why, every nation invests a huge amount of money over education. Government's efforts of improving higher education are in great speed. New and relevant courses are developed. New innovative ideas are implemented in making education effective and globalize in nature. These innovative ideas are mostly accompanied by the digitally means. New technology interventions have been used for improving the teaching-learning process. The use of technology in education is referred to as the digital transformation of education. With the aid of technology, the traditional system of education has gradually and very smoothly transformed into a digital one (Raja & Nagasurbramani, 2018). Technology has become an integral part of education system. Initially though seen as an addition to education, but now technology has becomes a crucial component of higher education. Digitalization of education system promotes the globalization. Globalisation is connected with the information technology and networking with the help of internet. The old traditional way of getting education is become old fashion. Students try new medium and get knowledge and information through internet. It develops a new concept of digital pedagogic. Digital pedagogic is understood as the use of electronic components to improve or transform education with relation to the educational experience. Digital resources and services are helpful in making globalization of knowledge and information. E-content, digital libraries, MOOCs etc are globally available and easily accessible that cover a large number of global information seekers. The National Convention on Digital Initiatives took place in New Delhi's Vigyan Bhawan on July 9, 2017. During the convention, a 17-point action plan was approved, and

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it was scheduled to be unveiled by December 2017. The action plan has been provided by the Ministry of Human Recourse Development (MHRD). Although their potential has not yet been fully realised, the innovative programs like SWAYAM and SWAYAM PRABHA (DTH Channels) provided a wealth of chances to improve the quality of education. Progress in carrying out this Digital Action Plan, particularly with regard to integrating SWAYAM and SWAYAM Prabha in a mixed mode to improve the calibre of the teaching-learning process.

IMPORTANCE OF DIGITAL EDUCATION INITIATIVES IN HIGHER EDUCATION INSTITUTES

1. Classroom instruction is now more engaging and dynamic thanks to digital education. Children are usually more focused. In addition to listening, they are also seeing everything on the screen, which enhances the effectiveness of their education. Here, the toddler can easily understand the noises and pictures because they go hand in hand. It generates employment by helping students to become technology friendly and equip them with the new skills. Digitalization in education field trained the students and upgrades the knowledge as per the requirement of market.
2. Students can finish their assignments independently by developing their attention to detail through interactive screen time or interactive online presentations that provide practical training in educational subject. Through the use of interactive learning resources like presentations and videos, students are able to grasp complex ideas with ease. It has aided in raising their degree of curiosity and interest.
3. Children are encouraged to finish their assignments more quickly when they use tablets, computers, or notepads in place of pens and pencils.
4. Teachers claim that absenteeism and school dropout rates have decreased as a result of the digital classrooms' contribution to improved student attention. Additionally, it has increased students' comfort and familiarity with technology. Even timid or apprehensive students are encouraged to contribute more effectively to class debates by the technologically interactive atmosphere.
5. Students that engage in active internet screen time improve their language proficiency. They broaden their vocabulary and pick up new words by reading eBooks or using online study resources. Students can avail a number of courses as per their choice.
6. During classroom instruction, students frequently hesitate to ask their teachers questions. However, with digital education, he can attend the recorded classes to get his questions answered even if he doesn't comprehend everything at once. Students can learn at their own pace thanks to technology.
7. The user-friendliness of digital education is its greatest feature. No matter where you are, you can definitely access your curriculum. On-the-go learning is possible. You can read the class notes and download materials from the school website, even if you are unable to attend some classes.
8. Study resources are readily available online. Depending on their ability, pupils can still benefit from digital content even if the entire educational system is not digitalised. In order to improve their knowledge even in the absence of an instructor, students can access special online study modules covering a variety of subjects. Large variety of e-content, modules are available and all these are reviewed by experts.
9. Through online learning, students can communicate with teachers and counsellors who live far away to get advice or answers to questions. It is inclusive in nature that means it is available to each and every person. Anyone can assess the e-content.
10. It is affordable to all. It helps in promoting equity as well as equality. It is a cost effective in nature. Student can get education without spending huge amount of money.

REVIEW OF RELATED LITERATURE

There are number of digital initiatives started by the govt. of India in education field. All the initiatives promote the digital literacy rate among students, youths and job seekers. Digital initiatives in education are a part of 'Digital India' campaign. Bano & Vasantha, (2020) conducted a study and found that several initiatives started by Government of India under 'Digital India' and 'Make in India' in education system that includes SWAYAM courses, e-pathshala, SWAYAM PRABHA, e-vidhya, National Digital Library of India (NDLI) etc. It helps in bridging the

gap of employability skills, to improve the quality of education and also promote the digital literacy and socio-economic development. Neborsky, (2020) found out that online courses and its demand going to be increased. Dorji, (2021) studied the preference of classroom and digital teaching among the Bhutanese school. 50% of Teachers preferred online teaching where as others relayed on traditional classroom teaching. According to Edy Susanto et al., (2022) and Tobgye, & Dorji, (2016) effective online teaching depends on lecturers' ability to create learning experiences that are appropriate for their students' needs and offer a variety of instructional strategies that support student engagement in the learning process. These instructional resources make education more accessible (Muniyasamy & Jeyshankar, 2022), especially for populations and locations with limited educational resources (Murugan & Jeyshankar, 2019). Massive open online courses (MOOCs) become very popularized and famous among students. Students are willing to get quality education through these courses. According to the McGrath et al., (2017) and Warusavitararana et al., (2014), MOOCs are one of the most notable technological advancements in the field of online education in the last ten years, they are regarded as a game changer for the higher education system. They have enabled the educational process to transcend the conventional confines of time and place and broaden the avenues for knowledge acquisition (Zheng & Yang, 2017). The process of registration, receipts, verification etc. for these courses becomes fast and convenient by using the internet facility. SWAYAM is a method of "online and self-learning," which means it offers opportunities for lifetime learning (Paul et al., 2018).

Suresh & Srinivasan, (2020), in their study, stated that MOOCs are courses that anyone can access, anywhere at any time. According to their study, SWAYAM portal provides 2748 MOOCs where about 1.2 crore students are enrolled and about 6.5 lakh student completed their courses. Sivakumaren & Thangavel, (2019) studied on e-learning education through SWAYAM courses and found out that enrolment under such courses is increased day by day. These courses available in different languages cover number of subjects and having quality e-content material. But the courses available in English language are quite popular as compared to the other languages. SWAYAM has experienced numerous difficulties with regards to digitalization, student popularity, and other factors (Kamble & Chavan, 2020). Maharaj, (2018); Sonkar & Srivastava, (2017) write a report that highlighted the contribution of e-PG Pathshala to the advancement of e-learning and provides a wider access to education worldwide. A digital library known as the NDL India has a collection of 1.26 billion items and 2 crore resource materials, of which 40 lakhs are books (Falak, 2018). Blended learning is effective, interesting and offers better learning experience to students Chitra, 2016; Muniyandi, 2016; Singaravelu, 2016. The current state of electronic thesis and dissertations at Indian university libraries and Shodhganga was highlighted by Das & Saikia, (2014); Kumar, (2015); Sengupta, (2015); Sivakumaren, (2015). They believed that open access platforms for electronic theses and dissertations will boost the rate of research, make it easier to gather necessary data and knowledge, and benefit all academic groups.

OBJECTIVES OF THE STUDY

1. To study the various digital initiatives started by the Government of India for higher education.
2. To study the digital initiatives undertaken by the students of University of Jammu.
3. To study the various issues and challenges related to the proper implementation of digital initiatives in education.

SCOPE OF THE STUDY

Digitalization of education involves various aspects of quality, ranging from organizational issues, technological infrastructure to pedagogical approaches (Bates, 2015; Selwyn, 2016) and influences internalization by offering online and flexible education program (Conole, 2014; O'Connor, 2014). It provides information related to the status of digital initiatives in campus that will be a helpful for students, administrator, teachers, stakeholders and policymakers.

DIGITAL EDUCATION INITIATIVES BY GOVERNMENT OF INDIA

Digital initiatives are one of the remarkable steps towards the achieving the goals related to education system. It helps in meeting the future needs of the teachers, students and administrators (stakeholders). By imparting digital initiative or ICT applications in the education system, India will be able to achieve the goal of modernization of society by modernizing the

institutes. Digital changes are the revolutionary step for bringing an auspicious development in higher education institutes. Some of the key initiatives have been taken by the Government of India in order to boost the digital education activities are as under:

1. National Digital Educational Architecture (NDEAR)

NDEAR main purpose is to strengthen the digital infrastructure and improve the standard of education planning. It helps in developing distinct education ecosystem architecture for implementation of digital infrastructure in country.

2. PM e-Vidya Program

This program was launched in May 2020 to make e-learning more accessible in nature. It promotes the online learning activities that can be benefitted by approximately 25 crore school students. Online courses are started by top 100 universities under this program in order to enhance the e-learning among students.

3. Diksha

It was started in September 2017. Digital infrastructure for knowledge sharing (Diksha), is a national portal that offers school curriculum-based learning materials, provide e-contents, QR coded digital textbooks in about 18 Indian languages.

4. SWAYAM

SWAYAM was launched in 2017. Its full form is Study Webs of Active learning For Young Aspiring Minds. It provides a platform for online courses. These courses are for students of 9^{th} to 12^{th} class and UG and PG students. It also provides certificate courses of different subjects. About 1182 courses are available in the January 2024 semester, out of the 11772 courses that have been made available through SWAYAM thus far. Over 1.21 million unique users and registrations have been made on the SWAYAM platform, and over 4 million students have enrolled in the numerous courses that SWAYAM offers. Approximately 295 universities and other institutions have approved SWAYAM courses for credit transfer, and numerous others are in the process of doing so. The Faculty Development Programmes (FDP) is also being developed through SWAYAM. Fifteen lakh untrained teachers got trained under DEIEd programme of NIOS delivered through SWAYAM. With the use of SWAYAM's MOOC platform, the government has initiated the Annual Refresher Programme in Teaching (ARPIT), a significant and unique program for the online professional development of 15 lakh higher education faculty members. Through workshops and seminars, more than 6000 local chapters have been established in universities and other institutions to raise awareness of SWAYAM. The courses hosted on SWAYAM are in 4 quadrants: video lectures, specially prepared reading material that can be downloaded/printed, self-assessment tests through tests and quizzes and an online discussion forum for clearing the doubts.

5. SWAYAM PRABHA

It is group of 40 DTH (Direct to home) channels that is broadcasting educational programs for 24×7 hours. These channels broadcast new content related to different subjects. The total registered users on SWAYAM PRABHA portal are 2,72,432. A total of 64,946,678 views and 1,201,385 subscriptions have been reported. (data as of 31st Dec, 2023). A total of 215 courses, comprising about 4,400 hours, along with 3,200 hours of live sessions, are successfully delivered during 2023-2024 session.

6. e-Pathshala Portal:

In 2015, e-Pathshala portal was launched in order to build a resources like educational videos, audios etc. e-PG Pathshala bachelor is also started where high quality, curriculum based, e-contents have been available for PG students.

7. National Academy Depository (NAD):

It is the online storehouse of all academic awards. It consists certificates, diplomas, degrees, mark sheets etc. in a single platform.

8. National Digital Library of India (NDLI India):

It is digital library where all the books of library are digitally uploaded in a single platform i.e. NDL. It provides different types of digital contents like books, journals, articles, thesis, audio, videos, and other educational materials. It is a single window search facility.

Content volume of the NDLI sources

i. Total no. of contents: 10.5 crore
ii. Full-text accessible: a. Total: 8.84 crore b. Nationally licensed contents: 6.64 lakh
iii. Contents sourced from 637 sources
iv. Content Type:
    a) Book: 79.8 lakh
    b) Article: 4.76 crore
    c) Journals & Proceedings: 5.5 lakh
    d) Thesis: 9.1 lakh

e) Questions, Question Papers/Sets, Quizzes, Exercises & Solutions: 5.88 lakh
f) Video Lecture: 5.38 lakh
g) Web course: 1.8 thousand
h) Simulation: 8.2 thousand
i) Presentation: 2.19 lakh
j) Others: 4.20 crore

v. Content Subject:

1. Computer science, Information and General works: 1.74 crore
2. History and Geography: 13.04 lakh
3. Language: 2.17 lakh
4. Literature and Rhetoric: 10.4 lakh
5. Natural sciences and Mathematics: 1.11 Cr
6. Philosophy and Psychology: 6.79 lakh
7. Religion: 2.66 lakh
8. Social sciences: 68.26 lakh
9. Technology: 1.48 crore
10. Fine and Decorative arts: 20.86 lakh

v. Content Form: Text, Video, Image, Audio, Presentation, Animation, Application, simulation

9. e-Shod Sindhu (ess):

It is formed by merging three consortiums i.e. UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE consortium. It provides reviewed journal, thesis, bibliographic and other research material. More than 217 universities, 4200+ colleges covered by Sections 12(B) and 2(F) of the UGC Act, and 98 Centrally Funded Technical Institutions (CFTIs), such as IITs, IISc, NITs, IIMs, IISERs, IIITs, and others, are still served by e-Shodh Sindhu. In 2023, the consortium used central funds to subscribe to 21 resources (including over 10,000 publications and four databases) for qualified universities and CFTIs who indicated their needs via the e-Shodh Sindhu site. The College component of the consortium, called N-LIST, continued to provide access to 6,500+ journals, 1,99,500+ e-books and 6 lakh+ e-books (through NDLI) to more than 4200+ colleges under the N-LIST programme.

10. Global Initiative of Academic Networks (GIAN):

GIAN is launched in higher education in order to gain an international experience in education system and encourage the engagement for innovative work by a talented scientist and entrepreneur. To facilitate global academic cooperation by means of shared teaching and research interactions, offering students and professors from India and beyond a platform for convergence for sustained collaboration aimed at improving the standard of higher education

Table 1: Global Initiative of Academic Networks statistics in digital initiatives

S. No.	Achievement	Total number
1.	Number of courses delivered	101
2.	Foreign faculty members who visited country to deliver courses under GIAN scheme	99
3.	Number of participated institutes	49
4.	Number of foreign faculties that have come for a one-week course	80
5.	Number of foreign faculties that have come for a two-week course.	19
6.	Number of foreign faculties that have come for a course duration other than one- or two-week course.	2
7.	Total Number Of foreign faculties' country.	28
8.	Number of students benefitted directly	More than 3436 students

Source: Annual Report 2023-2024 by Ministry of Education, Department of Higher Education and Department of School Education

11. Digi locker:

It is a platform for a verification of certificates issued by government. It is linked with Aadhar card. Main components of a digi locker are repository, access gateway and digi locker portal.

12. Shod Gangotri:

It is a platform where researcher uploaded their thesis in a full text that is helpful for other scholars. It is an electronic version of approved synopsis that is submitted by the research scholar for Ph.D. programs.

METHODOLOGY

The present study is both qualitative as well as quantitative in nature. It is descriptive in which qualitative as well as quantitative data was collected from the respondents. Data was collected from primary sources as well as secondary sources. For primary data, the population was selected from all the 36 departments of the University of Jammu (all the students of the University of Jammu were made up the population of students and faculty members). For the

collection of relevant data for the present study, sample was selected from the population of the students of the Jammu University. Simple random method was used for the selection of any 20 departments out of 36 departments of Jammu University. After that, 10 students were selected randomly from 20 selected departments. The total number of samples was 200. Self-constructed questionnaire was used for collection of data. For secondary data, the researchers had reviewed the various research papers, official websites, journals and books.

ANALYSIS AND INTERPRETATION

Table 2: A summary of findings of the study

S.No	Items	Yes Percentage	No Percentage
1.	Responses of the respondents whether they enrolled in SWAYAM courses	100%	0%
2.	Responses of the respondents whether they used e-content of SWAYAM portal.	85%	15%
3.	Responses of the respondents whether they watched SWAYAM-Prabha channels	8%	92%
4.	Responses of the respondents whether they studied through online classes.	100%	0%
5.	Responses of the respondents whether they used different online applications for their study purposes.	100%	0%
6.	Responses of the respondents whether they used the e-content of e-PG Pathshala portal.	70%	30%
7.	Responses of the respondents whether they have ICT subject in their course work.	60%	40%
8.	Responses of the respondents whether they consulted the National Digital Library of India	60%	40%
9.	Responses of the respondents whether they consulted the e-content from the Shodhganga portal.	90%	10%
10.	Responses of the respondents whether they used National Academic Depository.	15%	85%

The data presented in the table underscores the varied responses of students of University of Jammu to different digital initiatives in higher education. The findings provide key insights into students' engagement with these digital platforms and tools, reflecting trends in usage, preferences, and potential barriers. Below is a comprehensive analysis of the results for each item:

Enrolment in SWAYAM Courses

Every respondent has enrolled in SWAYAM courses, signifying universal acceptance and utilization of this government-led initiative. This finding highlights the strong appeal and relevance of SWAYAM's courses, potentially due to their diverse offerings, flexibility, and accreditation benefits.

Usage of e-Content on SWAYAM Platform

A substantial 85% of respondents have used the e-content provided by the SWAYAM portal, demonstrating high engagement. This finding aligns with the rising demand for self-paced, online learning material. However, the 15% who did not use the platform might indicate gaps in awareness or preferences for alternate resources.

Viewing of SWAYAM Prabha Channels

Only 8% of respondents reported watching the SWAYAM Prabha channels. This low engagement may be attributed to inadequate promotion of the channels, the preference for interactive over passive learning modes, or limited accessibility, such as dependence on specific schedules for content broadcasting.

Participation in Online Classes

All respondents attended online classes, highlighting the shift towards virtual learning environments, especially during events such as the COVID-19 pandemic. This finding reflects a successful transition to online pedagogy and underscores the indispensability of digital infrastructure in modern education.

Usage of Online Applications for Study Purposes

The unanimous use of online applications further affirms the integral role of digital tools in the

contemporary learning process. Popular tools like Zoom, Google Classroom, and Microsoft Teams likely contribute to this trend.

Usage of e-Content on e-PG Pathshala Portal (70% Yes)

A significant 70% of students accessed e-content from the e-PG Pathshala portal, indicating its relevance for higher education learners. The 30% non-usage could highlight challenges such as interface usability, insufficient promotion, or availability of alternative resources.

Inclusion of ICT Subject in Coursework

With 60% of respondents confirming ICT as part of their curriculum, it shows moderate integration of digital literacy into academic programs. However, the absence of ICT training for 40% raises questions about curriculum uniformity and the emphasis on digital competency.

Consultation of the National Digital Library of India

The usage of the National Digital Library of India by 60% of students suggests decent uptake for this vast repository of academic content. The 40% non-usage points to potential improvements in accessibility or awareness campaigns to promote its benefits effectively.

Consultation of e-Content from Shodhganga Portal

The 90% usage of Shodhganga highlights its value for students conducting research. Its vast database of theses and dissertations makes it a preferred choice for academic referencing and research assistance.

Usage of National Academic Depository

Only 15% of students used the National Academic Depository, marking it as one of the least utilized initiatives. Possible reasons include limited awareness of the platform or its applications being more relevant to graduates for document storage rather than currently enrolled students.

The analysis demonstrates a growing preference among students for digital platforms and applications to support their learning needs. Initiatives such as SWAYAM, online classes, and tools like e-PG Pathshala have seen significant engagement, reflecting their importance in higher education.

Strengths and Key Trends in the usage of digital initiatives in university of Jammu

1. **High Adoption of Digital Platforms:**
   The 100% enrollment in SWAYAM courses and high usage of SWAYAM e-content (85%) reflect the platform's effectiveness in meeting the students' needs. It indicates that students value the flexibility, accessibility, and diverse course offerings available online.
2. **Preference for Online Applications and Classes:**
   With 100% of respondents using online applications and participating in online classes, digital tools have become indispensable in modern education, especially post-pandemic. These tools likely facilitate real-time interaction, collaboration, and access to vast learning resources.
3. **Significant Utilization of e-PG Pathshala and Shodhganga:**
   Usage of e-PG Pathshala (70%) and Shodhganga portal (90%) shows the relevance of these initiatives for higher education and research. Students appear to recognize their value in offering specialized academic resources and research material.

Conversely, platforms like SWAYAM Prabha and the National Academic Depository suffer from low utilization rates, potentially due to lack of awareness, accessibility issues, or mismatch with students' immediate academic requirements. These findings also suggest the need for enhanced promotion, training, and infrastructure to bridge the gap in underutilized services while strengthening and scaling up the success of widely adopted initiatives. The analysis highlights key trends in students' use of digital platforms for educational purposes, demonstrating both successes and areas for improvement.

ISSUES AND CHALLENGES IDENTIFIED IN DIGITAL INITIATIVES IN EDUCATION

Low Engagement with SWAYAM Prabha: The minimal viewership of SWAYAM Prabha channels suggests a need to revisit its content delivery model. Its reliance on scheduled programming may not align with students' demand for flexibility and self-paced learning.

Limited Use of the National Academic Depository: The low adoption of the National Academic Depository could stem from limited awareness or its perceived irrelevance for currently enrolled students.

Its utility in securely storing educational records may not be immediately apparent to all users.

ICT Integration in Curricula: While 60% of respondents report having ICT in their coursework, a significant 40% do not. This highlights disparities in digital literacy training and the need for consistent integration of ICT education across academic programs.

Internet facility: Reliable and high-speed internet access is crucial for online learning. Students in areas with poor internet connectivity are struggling with accessing course materials, participating in online classes, or engaging in collaborative projects.

Electricity issue: In most of the areas, frequent power outages and unstable electricity are major issues that interrupt digital learning sessions. Without regular supply of electricity, it becomes difficult to continue study with electric gadgets, particularly in regions with unreliable power supply**.**

Lack of proper infrastructure: Many educational institutions lack the essential infrastructure, including up-to-date classrooms with digital equipment, efficient internet connectivity, and maintenance assistance. This is especially true in underprivileged areas. This can hinder the effective use of digital resources.

Functioning of website & Problem related to e-content: Technical problems like slow loading times, frequent crashes, or bugs are the major issues faced by the students while using websites or online platforms. Many websites and educational apps have disorganised e-content (digital textbooks, videos, interactive modules). They are outdated, poorly designed, and not aligned with the curriculum, making it less effective or engaging.

Lack of motivation: Digital learning can be less motivating for some students who might miss the structure and social interaction of traditional classrooms. The lack of face-to-face engagement with peers and teachers can affect motivation and participation.

Lack of interest: Some students may find digital learning less engaging compared to traditional methods. Without interactive or stimulating content, they might struggle to stay interested and focused on their studies.

Lack of proper gadgets: Access to appropriate technology, such as computers, tablets, or smartphones, is essential for digital learning. Students without these devices or with outdated technology may face difficulties in accessing online materials and participating in digital activities.

Lack of face-to-face interaction: Digital learning often lacks the personal interaction that traditional classrooms provide. This can affect students' social development, communication skills, and the ability to receive immediate feedback from teachers and peers.

Health issues: With the continuous use of online mode of learning, students may suffer from many health issues like headache, back pain, blurred vision etc. it become very necessary to balance the both online as well as offline mode of education.

Lack of digitally trained teachers: Teachers need to be trained not only in how to use digital tools but also in how to integrate them into their teaching methods effectively. A lack of digital training can impact the quality of instruction and hinder the overall learning experience.

MEASURES TO IMPROVE ENGAGEMENT

1. **Enhancing Awareness and Accessibility:**
   Awareness Campaigns: Conduct orientation sessions, webinars, and social media campaigns to educate students about less-utilized initiatives like SWAYAM Prabha and the National Academic Depository.
   Integrating Platforms in Curriculum: Ensure faculty members integrate digital resources into teaching methodologies, encouraging students to engage with these platforms.
2. **Content Customization and Flexibility:**
   On-Demand Content for SWAYAM Prabha: Shift from scheduled broadcasts to an on-demand content library for SWAYAM Prabha, making it accessible at any time.
   Localized Content: Add region-specific or vernacular content to better cater to diverse student populations.
3. **Promoting National Academic Depository:**
   Introduce workshops on how students can use the National Academic Depository to store and retrieve educational certificates securely, emphasizing its long-term benefits for academic and professional purposes.
4. **Integrating ICT into Academic Programs:**
   Make ICT education a mandatory component of all academic programs to equip students with essential digital skills. Offer specialized courses

on using digital platforms and tools for academic and professional purposes.

5. **Improving Digital Infrastructure and Support:**
   Ensure all educational institutions have adequate internet connectivity and technical infrastructure to facilitate smooth access to digital resources.
   Set up help desks or support teams to guide students in using these initiatives effectively.
6. **Feedback Mechanisms:**
   Regularly gather feedback from students and educators to identify challenges in accessing or using digital initiatives and implement necessary improvements.
7. **Collaborative Promotion:**
   Partner with tech companies, NGOs, and educational institutions to co-develop campaigns that promote digital literacy and the use of government initiatives.

THE WAY FORWARD

Online educational technology or digital education has become more and more popular in the current period. It plays a crucial part in delivering education. It is intended to play a role in not just delivering content to large numbers of students whenever and wherever they are, but also in encouraging successful learning for the students. The application of technology and its integration is become necessary in order to enhance different aspects of education. The main goals of technological interventions will be to enhance educational access, support teacher preparation and professional development, and improve teaching-learning and evaluation processes. It also aims to streamline educational planning, management, and administration, including procedures for admissions, attendance, assessments, and other things. In order to move forward, we must acknowledge that it is conceivable to adjust to this new stage of the teaching-learning process. Teachers and other educators will need to overcome challenges and master online tactics such as virtual lectures, video conferencing, online labs, mentorship, and online exam proctoring. Technology offers students quick access to knowledge, rapid learning, and enjoyable opportunities to put what they have learned into practise. It allows them to gain insight into difficult concepts and explore new topics. The availability of instructional resources 24/7 is made possible by technology. Utilizing a laptop or mobile device, students can attend classes totally online. In hybrid learning environments, regular in-person classroom time is combined with technology use from any place. It is possible to employ technology in order to create individualised learning strategies for each learner. Educators can design lessons based on the interests and skills of their students. Students can learn at their own pace, which is an additional advantage. Teachers can use technology to boost productivity, apply practical digital tools to promote student learning opportunities, and boost engagement and support from students. It also provides teachers with the chance to enhance their teaching strategies and optimize learning. By enhancing awareness, improving content delivery, integrating digital platforms into curricula, and strengthening infrastructure, the government can ensure wider adoption of its digital initiatives. This will not only maximize the utility of existing resources but also contribute to the digital transformation of higher education in India, enabling students to compete effectively in the global knowledge economy.

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