

# AN ANALYSIS OF THE EFFECTS OF SWAYAM LEARNING IN INDIA

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**Abstract:** It's a well known fact that, the development of a nations depends on its quality of citizens and the quality of a nations citizen highly depends on the educational quality that the nation is offering to its citizen for making them productive and responsible. This is what India has realized in the past few years. In order to fulfil its visualization the Government of India has taken so many initiatives in the past five years. Certainly the educational system is gradually moving towards online educational courses in the modern day. An Indian online learning platform for Massive Open Online Course (MOOCs) called Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM). The Ministry of Human Recourse Development (MHRD) Govt. of India launched the SWAYAM initiative. The SWAYAM program, that provides free access to online educational courses, was designed, developed and introduced by the government of India as part of its dream to make a "Digital India.". As of April 2022, the SWAYAM portal had incorporated more than 2,010 educational courses, 211 partners educational and administrative institutions, more than 7113 finished courses, around 28459396 students enrolled, about 1978084 exam registrations, and a total of 1099286 successful completed the course/certifications were made. Examining the significance of SWAYAM (9 National Coordinators) is the study's major aim. As per the findings of this study, the 9 national coordinators with the help of SWAYAM platform have been providing cutting-edge educational programmes with the help of its online digital web platform. The null hypothesis of this study is rejected as the regression analysis on SWAYAM (5-National Coordinators) Student Enrolment & Exam Registrations and Student Exam Registrations & Successful course completion/Certification shows that the F-values are about 749.31 and 136610, the Coefficient of determination value is about 98%, and the P-value is about 0.001. Since the SWAYAM online educational courses is playing a crucial role in the current educational situation, appropriately utilitarian value based courses must be introduced in the future for all the aspiring learners.

**Keywords:** Learning platform, online education, swayam

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## INTRODUCTION

In order to guarantee that every learner gains from studying the content through information and communication technology (ICT), Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) offers a unique integrated platform and gateway for digital/online courses that use basic ICT. These courses cover everything from high school to all subjects in higher education and the skill sector. Students have free access to this platform, which offers classes from ninth grade to post-graduation. It makes it easier for instructors and staff from centrally supported institutions, like as Indian Institute of Technology (IITs), Indian Institute of Management (IIMs), Indian Institute of Science and Research (IISERs) etc., to instruct students. Students are exposed to MOOC learning materials in novel formats and formats. The major four elements of SWAYAM teaching-learning are discussion boards, electronic-content, electronic-tutorials, and electronic-assessments. The first component is direct instruction, which involves using podcasts, Power Point presentations, instructional videos, and animations to instruct students. E-content is the second component. These consist of e-books, case studies, pictures, open source material, reference links, and further reading materials. The third component is answering a student's question. Students can communicate with faculty and other students in a discussion forum to get their

questions answered. Many university and college students in India have access to educational opportunities through the SWAYAM government initiative. In order to determine what a student has thought about and whether everyone is qualified to receive a certificate, the fourth component is self-assessment. Various assessment techniques such as Multiple Choice Questions (MCQs), online e-quizzes, short answer questions, essay type answer, and other formats are used to assess the pupils. In a country like India where the population is so huge and the required physical infrastructure is limited to support physical/formal learning in school and colleges, these kind of online platforms highly help the needy population for achievement of their educational dreams. SWAYAM becomes an effective tool in the context of Indian online learning platform where a massive number of students get benefited every year. Moreover several new courses in both arts, science and management field are being developed as per the requirement of the present society. In a nutshell SWAYAM is considered as a boon for the present Indian education system. Further many educationalists are being brainstorming for refining the various courses offered in this portal for educational advancement. At the end of the day, SWAYAM is a big step towards democratizing education in India, and with further development, it might lead the world in online education and provide high-quality education everywhere. To remain relevant and influential for upcoming generations of learners, the platform must adjust by including cutting-edge teaching strategies, a variety of content, and an emphasis on skill development as the digital education landscape changes. Furthermore, in both the senior secondary as well as higher education sectors, the country is progressively making remarkable progress towards achieving its educational aspect in par with world standards. India has well realized throughout time how crucial it is to lift the educational setup and standards in order to achieve the vibrant and changing needs of the global economy. In order to create a holistic and more well-rounded and informed generation of students for the nation, serious efforts have been undertaken in the school education setup to refine the existing curriculum need based, integrate contemporary teaching method and approach, and emphasize critical logical /thinking and problem-solving ability skills. At the same time, the countries' higher education setup is steadily evolving especially after the recommendations of NEP 2020. All together the nation, schooling and universities are modernizing their curricula as per the demand of the society, embracing global best practices, and giving learners access to cutting-edge research and technology. Furthermore the Higher education institutions in the nation are rising above their benchmark standards and getting reputation in foreign countries special thanks to policies and initiatives like accreditation and tie-up with high esteemed foreign institutions. Furthermore, the Indian government is spending in e-learning/digital learning initiatives platforms and digital education, like the SWAYAM program, is crucial in ensuring that learners from a wide variety of backgrounds may reach high-quality education and learning material. Thus by adopting the innovative digital tools and integrating technology into content, classrooms and presentations, both schools and Higher education setups are becoming more globally competitive, ensuring that learners are well-versed with the information, knowledge and skills required to thrive in a drastically changing world.

## OBJECTIVE OF THE STUDY

The present study is directed towards the following two primary objectives-

1. To Study the SWAYAM platform in the context of India.
2. To evaluate students' enrolment and exam registrations, as well as successful completion of student exams, in SWAYAM (9 National Coordinators).

## METHODOLOGY

One of the most important elements of research is choosing correct and appropriate methodology to reach the exact findings and conclusion. Thus the current work is descriptive in character and solely relies on secondary sources. Majority of the data were collected from SWAYAM portal. The SWAYAM online portal and other relevant publications were referred for obtaining the data. Authorized national and international publications served as the source of the literature. This data has been analysed using descriptive statistics. Statistical tools such as central tendencies, descriptive statistics, percentage methods, regression analysis and coefficient correlation analysis were used to interpret the obtained data.

## HYPOTHESIS OF THE STUDY

In order to make the study bias free, it is decided to go with null hypothesis. Therefore, the following null hypothesis are formulated and tested with the help of central tendency, descriptive tools, regression analysis and coefficient correlation on SWAYAM (9 National Coordinators) students' enrolment and exam registrations, as well as successful completion of student exams. The hypothesis of the present study is as follows-

**Null Hypothesis (Ho):** There exists no significant relation between students' enrolment in SWAYAM and exam registrations.

**Null Hypothesis (Ho):** There exists no significant relation between students' exam registrations in SWAYAM and successful course completion/certification.

## REVIEW OF RELATED LITERATURE.

In order to get insight into the area and problem under consideration, it is very essential to review the related literature in depth. For the present study, few of the major research works have been reviewed to get in-depth ideas about the study. In a study conducted by Paul P. K., Bhuimali A., Tiwary K. S., Aithal., & Rajesh R. (2018), Information technology (IT) has transformed the modern period. Every industry has benefited from the positive contributions of IT and computing, and the educational sector has also shifted to online learning. Students who are eager in acquiring degrees but lack the time or financial means to do so might use SWAYAM, a platform that allows for online and higher self-learning. Numerous educational organizations can collaborate

and take the necessary actions for their online and similar learning programs under this arrangement. This article covers the principles of SWAYAM, including its concept, characteristics, uniqueness, and essentials. This study shows a positive correlation between the study conducted in the year 2018 by the above authors and the study conducted in the year 2025.

According to a research study by Gourish Chandra Mundal and Palash Majumder (2019), considering the coverage and characteristics of SWAYAM platform, which was constructed in-house by the MHRD govt. of India and the AICTE collaboration with the Microsoft, has been able to host two thousand (2000) courses and eight thousand hours of information and knowledge, encompassing from secondary to senior secondary school, technical and non-technical undergraduate, post graduate, applied engineering, law system, and other professional courses. The UGC released the regulation, 2016 regarding the "Credit Framework for Digital Learning Courses/programmes through the SWAYAM portal" in a Gazette Notice dated July 19, 2016.

Another study was undertaken by Gupta and Sharma (2021) which states that SWAYAM is another important instrument for skill development in India is the SWAYAM platform. The SWAYAM courses/programmes in educational subjects like technical data science, advanced coding, and digital or e-marketing have significantly improved Indian students' employability rate. Further it was also discovered that young learners who have completed/finished these skill-based courses were more competitive in the labor market in compared to others, and many of them were able to upgrade and update their careers or find better jobs in the market. The content is in line with current market demands thanks to SWAYAM's partnership with industry leaders in course design, which further increases its relevance. By giving students the resources they need to advance their careers, SWAYAM helps close India's skills gap.

In their analysis of the SWAYAM platform's difficulties, Kumar et al. (2022) focused on problems such as poor course completion rates and internet access. Although SWAYAM has been successful in providing educational opportunities, it was discovered that low student support and an unstructured classroom environment decreased engagement. Full involvement is hampered by connectivity problems, especially in rural areas. The study did, however, also point out areas where the site might be improved, like adding live sessions, more interactive elements, and regional language content. By addressing these issues, SWAYAM's efficacy could be increased, making it more interesting and available to a wider spectrum of Indian students.

According to an analysis by Rupali S. and Ambadkar (2020), one of the main forces behind the technical modernization of Indian education is the introduction of MOOCs. The government of India has launched SWAYAM, a kind of make in India MOOC platform. Everyone who enrolls in SWAYAM courses benefits from easy access, equity, and high-quality education. The potential capabilities of the learners who have chosen to take these programmes and courses to study on their own are essential to the SWAYAM portal's success. Lack of proficiency with ICT was one of the primary issues impacting the usage of MOOCs as a knowledge tool. In order to meet the certification requirements, set forth by SWAYAM, cooperative efforts including the

government, each national coordinator of SWAYAM, universities, and academic linkages will be necessary. After carefully analyzing the above major related literatures, many significant issues, factors and variables that might influence the present studies were identified and incorporated under this study.

### **SWAYAM AND THE 9 NATIONAL COORDINATORS**

As it is familiar that, the courses are designed, developed and delivered via the SWAYAM portal; self-study students can take them for free, but they must register for the final proctored exams, which are paid for, and physically attend the designated centres on specific dates. Students who meet the requirements for the certificate will be eligible to receive it from universities or colleges that offer favourable credit transfer for these courses. UG based NPTEL, AICTE, CEC, and IMB; postgraduate education-based NPTEL, AICTE, IMB, and the UGC are the partners for this initiative. These coordinators design and develop fruitful and utilitarian educational programmes for the aspiring youths of this nation. Further under the direction of the present Prime Minister of India, SWAYAM has achieved its peak in the year 2024 by reaching the remote villages of this country.

The cooperation of SWAYAM's nine national and institutional coordinators is crucial to its success. These coordinators are in charge of providing, selecting, and guaranteeing the calibre of the courses that are offered on the platform. A thorough description of the nine coordinators and the quantity of SWAYAM courses they provide may be found below.

***All India Council of Technical Education (AICTE):*** it is known as one of the important SWAYAM's coordinators, it is mostly tasked with providing technical education programs in the portal. Engineering, technology, applied sciences, management, and other related professions are supervised by AICTE. The effort by AICTE encourages the ongoing advancement of technical techniques, knowledge and abilities that meet industry demands. More than 250 courses in engineering, management, architecture, and other professional technical fields have been created by AICTE and are available on SWAYAM. Engineering, computer science, electrical, mechanical, chemical, and management engineering are noteworthy fields.

***University Grant Commission (UGC):*** Coordinating higher education courses on SWAYAM is the responsibility of UGC. It offers undergraduate and graduate courses in partnership with colleges and other organizations around the nation. UGC makes certain that these classes fulfill the necessary requirements for both quality and academic curriculum relevance. Courses Available: About 400+ courses in a variety of fields, including the humanities, social sciences, law, education, and more, are organized by UGC. Social sciences, humanities, law, literature, philosophy, education, and languages are among the notable fields.

***National Institute of Open Schooling (NIOS):*** Through SWAYAM, NIOS is in charge of providing instruction at the school level. In order to provide flexible and accessible education, particularly for those who are unable to attend regular schools, it focuses on delivering material for secondary and senior secondary school students. Courses Available: More than 40 school education-related courses are available at NIOS, mostly at the secondary

and senior secondary levels. Languages, science, mathematics, social science, and vocational education are noteworthy fields.

***National Programme on Technology Enhanced Learning (NPTEL):*** Bombay's Indian Institute of Technology (IIT) (NPTEL) Offering top-notch technical courses is made possible in large part by IIT Bombay's National Programme on Technology Enhanced Learning (NPTEL). A partnership between the IITs and IISc, NPTEL offers free online courses in science, technology, and engineering. The other IITs and IISc work together to offer these courses. Classes Provided: With the help of IIT Bombay, NPTEL offers more than 1000 courses on SWAYAM. Undergraduate and graduate-level courses are among them. Computer science, electrical engineering, mechanical engineering, biotechnology, and physics are notable fields.

***Indira Gandhi National Open University (IGNOU):*** it is one of the largest open/distance learning universities in the country; it is responsible for offering a wide variety of remote learning programmes. IGNOU assist to offer educational and vocational programmes on SWAYAM portal, particularly for UG and graduate students. IGNOU has developed more than one hundred fifty (150) programmes covering a high range of educational subjects, including the management, the arts, and social sciences field.

***National Council of Educational Research and Training (NCERT):*** is in position of organizing SWAYAM courses at the school level, especially for kindergarten to senior secondary education. It gives users digital access to NCERT textbooks and other materials that follow the curriculum in Indian schools. For students in Classes 9 through 12, NCERT provides more than hundred (100) courses. Science, math, geography, history, and vocational education are noteworthy fields.

***Consortium for Educational Communication (CEC):*** The UGC of India established the CEC as one of its Inter University Centres. It was founded in 1991 and uses information and communication technology (ICT) and reputable media like television to meet the demands of higher education. The 21 Media Centres operated by CEC are working to accomplish this objective. The CEC serves as the coordinator for around 11 SWAYAM DTH Channels and UG MOOCs. Further one of the India's largest reserves of e-teaching and learning materials is available at CEC. The library of CEC incorporates more than 24,000 digital-content modules, more than 40,000 visual programs, and National Coordinator about 322 UG MOOCs in the fields of the arts, including literature, language, social sciences, natural sciences, applied sciences, and specialty courses have been created by CEC.

***Indian Institute of Business Management (IIMB):*** One of Asia's most significant institutions for management education is IIMB. IIMB is a nationally renowned institute with over 100 full-time faculty members, over 1200 students enrolled in programs leading to degrees or certifications, and about 5000 annual contributors to executive education. Further the courses in Management, the PG courses in Public Policy domain and Management, the Executive PG courses in Management, which is offered regular mode full-time for a year, the PG courses in Enterprise Management, and the PG course in Management are among the courses provided by the IIMB that grant degrees or diplomas. Massive Open Online Courses (MOOCs) are available at the institute.

**Table 1***Analysis with reference to participation in SWAYAM*

Coordinators	Partner Institutions	Courses Completed	Students' Enrolment	Exam Registration	Success Certification	Ranking
AICTE	8	287	1056771	14791	14081	3
NPTEL	28	4211	19008104	1875874	1032910	1
UGC	136	271	293134	14419	8997	4
CEC	18	991	2258701	41189	25428	2
NCERT	9	180	340070	0	0	0
NIOS	1	304	3654653	0	0	0
IGNOU	4	541	1010300	11176	6031	6
IIBM	3	184	532167	14752	7563	5
NITTTR	4	144	305496	5883	4276	7

Source: [https://swayam.gov.in/nc\\_details/](https://swayam.gov.in/nc_details/)

**Interpretation:** The participation of SWAYAM 9 National Coordinators is examined in Table 1. About 1047828 students received first-place certification from NPTEL, 24727 CEC students received second-place certification, and 13986 AICTE learners received successful certification. Further with respect to ratio of students enrolment and success certificate NPTEL and CEC are found to be highest where as NITTTR and IGNOU are found to be the lowest.

**Table 2***Analysis of overall participation in SWAYAM*

SWAYAM (CD)*	Partner Institutions	Courses Completed	Students' Enrolment	Exam Registration	Success Certification	Course utilization %
	211	7113	28459396	1978084	1099286	70.65%

\*Coordinators Details

Source: <https://swayam.gov.in/about>

**Interpretation:** According to the reports on 2017 to 2022 as of April 30, 2022, table-2 shows the total participation/involvement for SWAYAM (9 National Coordinators), their 211 partner institutions, completed programmes (7113), student enrolment (28459396), exam registrations (1978084), and the issuance of successful certificates (1324301). This indicates that 70.6574% of learners have used these courses effectively.

**Table 3***Analysis of regression on the SWAYAM (07-coordinators) students' enrolment and exam registration*

SWAYAM (coordinators)	AICTE	NPTEL	UGC	CEC	IGNOU	IIBM	NITTTR
Student enrolment data	1041886	18249679	284812	2159308	1000324	513584	294382

Exam registration data	12681	1513096	12310	39096	10137	11262	5473
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**Table 3.1**  
*Regression*

Regression Analysis	Value
Coefficient of determination	0.9854
Adjusted Coefficient of determination	0.9756
Multiple correlation coefficient	0.9876
Observations	5
Standard Error	564581

**Table 3.2**  
*ANOVA*

ANOVA	DF	SS	MS	F	Sig F
Regression analysis	1	259328210124665	259328210124667	749.31	0.001
Residual part	4	1875567607543	33324565434		
Total	5	276588762321543			

**Table 3.3**  
*Coefficient Correlation*

Variables	Coefficient	Standard error	t-stat	P-value
Intercept observation	710637.31	252446.28	2.82	0.031
Exam registration detail	12.56	0.39	26.49	0.001

**Interpretation:** Table 3 shows that, according to regression analysis, the difference between student enrolment and exam registrations are very significant, with an F-value of 749.31, and a Coefficient of determination value of about 98%, and a P-value of about 0.001. Since the significance level is set at 1%, the null hypothesis is thus disproved.

**Table 4**  
*Analysis of Regression, student exam registration and successful course completion/certification*

SWAYAM coordinators	AICTE	NPTEL	UGC	CEC	IGNOU	IIMB	NITTTR
Exam registration details	12681	1513096	12310	39096	10137	11262	5473
Successful Certification details	13986	1047828	9327	24727	5942	7466	4123

**Table 4.1**  
*Regression*

Regression Analysis	Value
Coefficient of determination	0.98886
Adjusted Coefficient of determination	0.98876
Multiple correlation coefficient	0.98888
Observations	5
Standard Error	3642

**Table 4.2**  
*ANOVA*

ANOVA	DF	SS	MS	F	Sig F
Regression analysis	1	1923919687717	1876953684412	136610	0.00
Residual part	4	67824311	14069934		
Total	5	1923989542431			

**Table 4.3**  
*Coefficient Correlation*

Variables	Coefficient	SD Error	t-stat	P-value
Intercept observation	-532.13	1441.87	-0.5062	0.669
Exam registration details	1.347	0.003	364.09	0.001

**Interpretation:** Table 4 shows that, according to regression analysis, the variation between exam registrations and successful course completion/certification is extremely significant and positively correlated with a Coefficient value of 1.347 and with a F value about 136610, and a Coefficient of determination value about 98%, and with a P-value of about 0.001. As the significance level is set at 1%, the null hypothesis is thus disproved.

### RECOMMENDATIONS

- The educational courses offered ought to align with the current needs of the business sector.
- All educational institutions should make certification courses required in order to promote MOOCs.
- Students ought to make an effort to learn new technology.
- To make SWAYAM courses more applicable in the modern world, they should be updated frequently.

### SCOPE FOR FUTURE STUDIES

The present study only focused on digital learning covering areas such as students' enrolment, exam registration and successful certification with respect to SWAYAM. Witnessing the drastic growth in technology and technology drive teaching and learning, studies in the field of Digital Education other than through SWAYAM platform and Online Examination System specially in the field of higher education are suggested to widen our understanding in the field of technology drive educational system.

## CONCLUSION

As per the study's findings, SWAYAM's (nine coordinators) provide learners with knowledge on a range of topics via an online platform. Digital learning and online education will definitely support nation's development and assures widespread access to science and technology education. For the student body to progress in the sectors such as educational and corporate, their technological skills should be updated. SWAYAM is a kind present for the learners of this generation. MOOCs hold great promise for converting the entire educational setup of the nation and achieving the prime objectives of the programme such as high excellence in education, high employability rate, expansion of access of education, and equity with respect to educational opportunities. This study also states that majority of students have enrolled in the technical courses rather than other. This finding clearly indicates that, in India the majority of learning population is demanding technical based educational programmes. This may be due to the current transition in the Indian economy from manufacturing sector to service sector. Upon examining the successful course completion/ certification percentage in the SWAYAM, it is observed that a large group of enrolled population do not turn for examination as well, which is found to be a major lacuna in the initiative. Further in conclusion, the Ministry of Human Resource Development in complete collaboration with the present Government of India introduced the SWAYAM platform, which has become a key enabler of Massive Open Online Courses and provides free of cost reach to a large group of educational content. This programme is a major part of India's education system and highlights the country's dedication and commitment towards technological driven education through electronic/digital platforms. It is in line with the vision of a "Digital India," which aims to make education more access. According to this research study, that aimed on the significance of nation's educational backbone institutions i.e. the National Coordinators, the platform is offering cutting-edge and utilitarian teaching and learning educational materials. The effectiveness and efficacy of the area is confirmed by the use of various statistical analysis, that also covers the rejection of the null hypothesis. In the study the R-squared value of about 98%, the regressive regression results display a highly substantial positive correlation between exam registrations data, course completion data, and the student enrolment data.

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