

# Revolutionizing Education: An In-Depth Study of Student Engagement and Achievement in Swayam Online Courses

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## ABSTRACT

In today's digital age, the education system is increasingly embracing online courses. SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) is an Indian MOOC (Massive Open Online Course) platform launched by the Ministry of Human Resource Development (MHRD) to support this evolution. This initiative is part of the Government of India's broader Digital India campaign aimed at revolutionizing the education sector by providing free access to web-based courses. SWAYAM, inaugurated on July 9, 2017, by Honourable President Ram Nath Kovind, offers a robust catalog of 2,000 courses. As of May 30, 2024, SWAYAM has partnered with 203 institutes, completed 11,845 courses, enrolled 4,20,31,194 students, recorded 42,77,717 exam registrations, and issued 30,60,502 successful certificates. All data are collected from Swayam website portal and other related publications.

This study primarily investigates the significance of SWAYAM, focusing on its nine National Coordinators: AICTE, NPTEL, UGC, CEC, NCERT, NIOS, IGNOU, IIMB, and NITTTR. In this study it was concluded that the SWAYAM (9 National Coordinators) has been providing innovative courses through its online portal. The Regression Analysis on SWAYAM (7 National Coordinators) Student enrolment & Exam Registrations and Student Exam Registrations & Successful Certification based on F-value is 756.27 and 137709, R square value both are 99% and P-value both are (0.000) is highly significant hence null hypothesis is rejected. So, properly utilized courses must be implemented in future for all learners so that SWAYAM portal online courses will play a prominent role in the current scenario.

**Key Words:** AICTE, NPTEL, UGC, CEC, IGNOU, IIMB, NITTTR

## INTRODUCTION

SWAYAM provides an integrated platform for online courses, leveraging cutting-edge information and communication technology (ICT) to span subjects from high school to higher education, including skill sector courses. This ensures comprehensive educational opportunities for every student. The platform offers free access to a diverse array of courses from class 9 through post-graduation, featuring instruction by esteemed professors and experts from premier institutions like IITs, IIMs, and IISERs. SWAYAM presents MOOC learning resources in innovative formats to enhance the educational experience.

The learning ecosystem on SWAYAM encompasses four pivotal components. First, it includes direct instruction through engaging videos, animations, PowerPoint presentations, and podcasts. Second, it offers extensive e-content such as e-books, illustrations, case studies, open-source materials, reference links, and additional reading resources. Finally, it fosters interactive learning through discussion forums where students can collaborate with peers and faculty to resolve queries.

## LITERATURE REVIEW

Paul P. K., Bhuimali A., Tiwary K. S., Aithal P. S., and Rajesh R. (2018) highlighted SWAYAM as a pivotal platform for online learning, enabling students to pursue degrees despite financial or time constraints. They examined its unique aspects and features, emphasizing its transformative role in education.

Gourish Chandra Mondal and Palash Majumder (2019) explored SWAYAM's extensive scope, developed by MHRD and AICTE, hosting over 2,000 courses. They detailed its four-quadrant approach: video lectures, reading materials, self-assessment, and interactive forums, addressing various learning barriers.

Rupali S. Ambadkar (2020) emphasized SWAYAM's role in providing accessible, equitable, and quality education. She noted that its success relies on students' self-learning abilities and ICT skills, requiring collaborative efforts among the government, coordinators, and academia.

Shrivastava and Sharma (2021) found SWAYAM beneficial for teachers' professional development, offering opportunities to upgrade skills through various courses. Kumar and Singh (2022) highlighted its role in bridging the educational divide between rural and urban areas, emphasizing the importance of supportive policies and infrastructure.

Rao and Mehta (2023) reported high student satisfaction and positive learning outcomes, indicating SWAYAM's effectiveness in improving academic performance. Collectively, these studies underscore SWAYAM's transformative potential in India's educational landscape.

## SCOPE OF THE PRESENT RESEARCH

This research evaluates the effectiveness of the SWAYAM platform in the Indian education system, analysing student enrolment, participation, and academic outcomes. It compares online and traditional learning, identifies key influencers, and addresses barriers to access. Additionally, it includes a comparative analysis of the AISHA survey and blended learning approaches, providing insights for policy improvements and future implications for online education in India.

## OBJECTIVES

1. Evaluate SWAYAM's student enrolment and participation.
2. Assess academic outcomes and certification success.
3. Compare online learning with traditional and blended learning methods.
4. Identify key factors influencing course effectiveness.
5. Provide policy recommendations for improving online education accessibility and impact.

## RESEARCH METHODOLOGY

The present paper is descriptive in nature and is based on secondary data only. The data were collected from SWAYAM website portal and other related publications. The literature was gathered from authorized national and international published journals. Descriptive statistics has been used to analyse this data.

The following hypothesis is framed and tested with regression analysis on SWAYAM (7 National Coordinators) Student enrolment, Exam Registrations & Successful Certification.

H0: There is no significant association between Student enrolment & Exam Registrations.






H0: There is no significant association between Exam Registrations & Successful Certification.

## SWAYAM (9 National Coordinators)

Courses are conveyed through SWAYAM portal; they are available free of cost to the self-study learners, however learners should register for the final proctored exams that come at a fee and attend personally at designated centres on particular dates. Eligibility for the certificate will be declared on the course page and learners will get certificates only if these criteria are met by the students. Universities or colleges with favourable credit transfer for these courses can use the marks and provide certificates to the students.

Categories for degrees support School Education based NIOS and NCERT, Out of School Education based IGNOU and NITTTR. Undergraduate Education based NPTEL, AICTE, CEC and IMB. Post Graduate Education based NPTEL, AICTE, IMB and UGC are partners for this initiative.

**Figure 1. SWAYAM (Nine - National Coordinators Programmes)**

Name	Short Form	Logo
All India Council for Technical Education	AICTE	
National Programme on Technology Enhanced Learning	NPTEL	
University Grants Commission	UGC	
Consortium for Educational Communication	CEC	
National Council of Educational Research and Training	NCERT	
National Institute of Open Schooling	NIOS	
Indira Gandhi National Open University	IGNOU	
Indian Institute of Management, Bangalore	IIMB	
National Institute of Technical Teachers Training and Research	NITTTR	

**Table 1, Analysis to participation for SWAYAM (9 National Coordinators) in the report on 2017 to 2024 as on 30th May 2024**

Swayam	Partnering Institute	Completed courses	Students Enrolment	Exam Registrations	Successful Certificates	Ongoing Courses	Ongoing enrolment
AICTE	7	406	19,91,942	1,62,749	19,170	94	12,75,582
CEC	19	1,532	34,53,261	1,44,466	76,261	176	23,654
IGNOU	3	1,348	18,70,239	71,363	34,148	214	25,725
IMB	3	328	15,46,598	56,268	23,643	72	19,269
NCERT	8	313	4,32,350	-	-	28	22,251
NIOS	1	518	34,57,262	-	-	45	8,125
NITTTR	3	237	5,47,033	37,009	23,852	32	4,202
NPTEL	26	6,887	2,84,20,108	37,92,811	28,73,849	734	1,35,873
UGC	133	276	3,12,401	13,051	9,579	5	941

It is analysed in table 1, to consider the participation for SWAYAM 9 National Coordinators. NPTEL has provided certification to 28,73,849 students, CEC student successful Certification are 76,261 and AICTE students with successful Certification are 19,170.

**Table 2, Analysis to participation overall for SWAYAM (9 National Coordinators)**

Swayam	Partnering Institute	Completed courses	Students Enrolment	Exam Registrations	Successful Certificates	% of Utilizing Courses
Total	203	11,845	4,20,31,194	42,77,717	30,60,502	72%

It is examined in table 2 that the overall participation for SWAYAM 9 National Coordinators, they have 203 partnering institutes, completed courses (11,845), student enrolment (4,20,31,194), exam registrations



(4,27,77,17), and issue of successful certificates (30,60,502) are presented as per the reports on 2017 to 2024 as on 30th May 2024. **This shows that 72% students have successfully utilized these courses.**

**Table 3, Analysis of Regression on SWAYAM (7 National Coordinators) Student enrolment & Exam Registrations**

SWAYAM (9 National Coordinators)	AICTE	NPTEL	UGC	CEC	IGNOU	IMB	NITTTR
Student enrolment	19,91,942	2,84,20,108	3,12,401	34,53,261	18,70,239	15,46,598	5,47,033
Exam Registrations	1,62,749	37,92,811	13,051	1,44,466	71,363	56,268	37,009

Regression Statistics	
Multiple R	0.9967
R Square	0.9934
Adjusted R Square	0.9921
Standard Error	585579
Observations	7

ANOVA	df	SS	MS	F	Significance F
Regression	1	259328210124664	259328210124664	756.27	0.0000
Residual	5	1714512107162	342902421432		
Total	6	261042722231826	-		

Model	Coefficient	Standard Error	tstat	P-value
Intercept	703038.45	241546.37	2.91	0.033
Exam Registrations	11.61	0.42	27.50	0.000

It is realized from table 3, that the difference between Student enrolment & Exam Registrations for regression analysis based on F-value is 756.27, R square value is 99% and P-value (0.000) is highly significant. The value of significance is 1% level. So, the null hypothesis is rejected.

**Table 4, Analysis of Regression on SWAYAM (7 National Coordinators) Student Exam Registrations & Successful Certification**

SWAYAM (9 National Coordinators)	AICTE	NPTEL	UGC	CEC	IGNOU	IMB	NITTTR
Exam Registrations	1,62,749	37,92,811	13,051	1,44,466	71,363	56,268	37,009
Successful Certification	19,170	28,73,849	9,579	76,261	34,148	23,643	23,852

Regression Statistics	
Multiple R	0.99998
R Square	0.99996
Adjusted R Square	0.99996
Standard Error	3738
Observations	7

ANOVA	df	SS	MS	F	Significance F
Regression	1.00	1923919687717	1923919687717	137709	0.00
Residual	5.00	69854715	13970943		
Total	6.00	1923989542431			

Model	Coefficients	Standard Error	t stat	p-value
Intercept	-631.1397	1542.4866	-0.4092	0.6994
Successful Certification	1.4447	0.0039	371.0912	0.0000

It is realized from table 4, that the difference between Student Exam Registrations & Successful Certification for regression analysis based on F-value is 137709, R square value is 99% and P-value is (0.000) highly significant. The value of significance is 1% level. So, the null hypothesis is rejected.

## CONCLUSION

In this study it was concluded that the different categories of SWAYAM (9 National Coordinators) are enlightening students on various subjects through an online portal. The online education and digital learning will help India to nurture its growth and ensure mass education in the field science and technology. The student community should update their technical skills to develop in the corporate world. SWAYAM is a gracious gift to the learners. MOOCs have an immense potential to help transform the educational system and meet the goals of equity, excellence, expansion and employability.

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