

## Awareness and Barriers of SWAYAM Courses (MOOCs) among Prospective Teachers in Dindigul District, Tamil Nadu, India

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**ABSTRACT** SWAYAM is an online, advanced self-learning platform initiated by the Indian Government. The focus of the current study is on the understanding and obstacles of SWAYAM courses among prospective teachers in the Dindigul District. In this study, data was gathered using a survey method. Google Forms were utilized to collect responses, and a total of 120 respondents participated, out of which 82 were undergraduate students and the remaining 38 were postgraduates. The study was conducted using the Simple Random Sampling method by the researchers. The sample consists of 120 prospective teachers selected from Dindigul District, Tamil Nadu. The SWAYAM awareness tool was constructed, validated by the investigators. The research revealed that prospective teachers in Dindigul District have a moderate level of awareness regarding SWAYAM courses. The barriers faced by the students, such as lack of time due to academic schedules, are less effective compared to traditional learning. Hence, prospective teachers have an average level awareness about SWAYAM courses.

### INTRODUCTION

The digital educational initiative has potential to develop a new process of learning (Kumar 2021). Through SWAYAM, Indian citizens are offered access to Massive Open Online Courses (Mathai 2019). The government's SWAYAM e-learning initiative is a groundbreaking effort directed towards delivering quality education to numerous university and college students pursuing advanced degrees (Chile and Shinde 2019). The Ministry of Education and the All India Council for Technical Education collaborated to develop SWAYAM, an online learning platform indigenous to India. The web portal for this digital learning initiative was created by the Microsoft Corporation (Paul et al. 2018). SWAYAM strives to fulfill the three core principles of access, equity, and quality. The platform is designed to supply high-quality educational resources and materials to all users (Tarika et al. 2022). SWAYAM serves as a conduit, facilitating access to the digital world in areas where students may lack digital awareness (Majumder 2019). Within the SWAYAM learning platform, resources such as video lectures, bespoke reading material, self-evaluation tests, and an online discussion forum are available. These tools are designed to overcome sociological, geographical, and political hur-

dles in education (Mondal 2019). Courses from grade 9 through postgraduation are taught in classrooms and accessible to anybody, anywhere, at any time (Aslam and Sonkar 2019). While the SWAYAM platform provides courses entirely free of charge to all learners, students seeking certificates are required to pay a fee and participate in proctored exams (Devaki et al. 2021). Students studying at public higher education institutions in India have the opportunity to earn academic credits online through courses offered on SWAYAM (Mendez et al. 2019). The University Grants Commission, Government of India, alongside state governments, are endorsing teachers to create Massive Open Online Courses intended for Undergraduate and Postgraduate levels, as well as for skill enhancement (Dash et al. 2023). Studied by Bhagyalakshmi and Karthika in 2020, the findings indicate that SWAYAM is more affordable and simpler to use than private online training services. There may be barriers that hinder the use of SWAYAM courses. These barriers could include a lack of internet access, limited computer proficiency, or a preference for traditional classroom learning. Additionally, time constraints and conflicting commitments may also pose barriers to utilising SWAYAM courses (Pant et al. 2023). This study attempts to determine how prospective

teachers in teacher education institutions are aware of SWAYAM in this context. The study makes an effort to pinpoint the obstacles that Indian students face in using MOOCs SWAYAM courses.

### Review of Studies on Awareness and Barriers of SWAYAM

A study by Muzafarova and Kaya (2014) revealed that the awareness and the use of MOOCs was very low, as 61 percent of the students have not enrolled in any online courses. Sathish Kumar and Mahendraprabu's (2020) study shows that there was a notable disparity between the science and education departments' postgraduate students with respect to awareness of SWAYAM courses. A study by Shakya et al. (2016) revealed that a large number of students are unaware about MOOC, but they are eager to enrol in MOOC courses. Singh and Chauhan (2017) reveal that teacher educators had a basic understanding of MOOCs. The study by Singh and Chauhan (2023) revealed that teacher educators have a fundamental understanding of MOOCs, their advantages, modes of delivery, and strengths. The findings showed that there is insufficient knowledge of MOOCs and SWAYAM among students and teachers by Sivakumar (2019). A study by Ma and Lee (2018) revealed that students expressed concerns about usage barriers including a lack of resources, internet access, and instructor contact. Mohan et al.'s (2020) study revealed that for 41 percent of students, their usual academic commitments impede them from participating effectively in MOOCs, displaying their lack of time management skills and showing negative perspectives towards MOOCs. The barriers faced with SWAYAM courses include time bounds, less efficacy than traditional learning, technological difficulties, infrastructural inadequacies, poor connectivity, and low technological (Ma and Lee 2018; Mohan et al. 2020; Subaveerapandiyam and Ahamed 2020; Aydin and Yazici 2020; Dafauti 2023; Malik and Hooda 2023).

### Objectives of the Study

1. To determine the level of awareness of SWAYAM courses among prospective teachers in Dindigul District.

2. To identify the barriers to using SWAYAM courses among prospective teachers in Dindigul District.
3. To explore if there is a significant difference in the mean scores of awareness of SWAYAM courses depending on gender, graduation level, locality, subject stream, and management types.

### Hypotheses

1. There is no statistically significant variation in mean scores of awareness of SWAYAM courses based on gender (Male/Female), location (Rural/Urban), graduation (UG/PG), subject stream (Arts/Science), and type of institute (University/College).
2. There is no statistically significant deviation in the mean awareness scores of SWAYAM courses across different management types.

### METHODOLOGY

Online survey or web based survey is one of the most popular data collection methods, where a set of questionnaire were sent to targeted participants and respondents read the questions, understand it, and record their responses over the web. Respondents receive online surveys and questionnaires via various mediums such as email, WhatsApp, social media (Kumar and Naik 2016). The researchers employed an online survey method for this investigation. The investigators created, organised, and verified the tool, which was then given to students in teacher education colleges. A Google Form was used to create the survey. The link to the Google Form was sent out via WhatsApp and email to respondents.

### Sample

For this research, the researcher employed the Simple Random Sampling technique. A total of 120 prospective teachers were chosen from teacher educational institutions, Dindigul District, Tamil Nadu. The data was collected from the Department of Education, Gandhigram Rural Institute (DTBU) (N=61), Lakshmi College of Education (N=37), JK College of Education (N = 08), and K.Nanjappa Gounder College of Education (N =

14). Table 1 presents a comprehensive breakdown of the sample distribution.

**Table 1: Distribution of sample**

	<i>Demographic variable</i>	<i>N</i>	<i>%</i>
	<i>Type</i>		
<i>Gender</i>	Male	34	28.33
	Female	86	71.66
<i>Subject</i>	Arts	46	38.33
	Science	74	61.66
<i>Locality</i>	Rural	72	60.00
	Urban	48	40.00
<i>Educational Qualification</i>	UG	82	68.33
	PG	38	31.66
<i>Types of management</i>	Govt.	61	50.83
	Govt. Aided	37	30.83
	Private	22	18.33

**Study Instruments**

The SWAYAM awareness tool was constructed and validated by the investigators. The constructed tool was given to the panel of experts. Finally, the 20 items were finalised out of 25. The survey questions consists of 20 multiple choice questions related to awareness of SWAYAM courses. Item analysis evaluates each item’s (question’s) quality in terms of its degree of difficulty (Index of Difficulty), its capacity to distinguish between high performers and low performers (Index of Discrimination), and the effectiveness with which the distractors are deployed in each item (Distractor Efficiency). The results of the item analysis help to strengthen the MCQs by allowing the retention of strong items while revising, replacing, or removing weak ones.

**RESULTS**

**Normality Test**

The data collected from 120 prospective teachers were analysed to see whether the scores are normally distributed or not. The analysis’s findings show that teachers’ average scores on the prospective teachers’ Swayam of 12.96. The Nor-

**Table 2: Normality test on SWAYAM awareness**

<i>Test</i>	<i>N</i>	<i>Mean</i>	<i>S.D</i>	<i>Skewness</i>	<i>Kurtosis</i>
SWAYAM Awareness	120	12.96	2.67	-.374	-1.199

mality test Table 2 shows the familiarity assessment of SWAYAM courses among prospective educators. The skewness of test scores ranges from -1 to +1, while the kurtosis values are within the +2 to -2 range. Hence, it is evident that the awareness of SWAYAM courses score is normally distributed.

**Level of Awareness of SWAYAM Courses**

For the awareness of SWAYAM courses, Table 3 shows the findings of the results wherein 23.6 percent respondents have low, 38.2 percent respondents have average and 35.8 percent of higher education students had high levels of awareness of SWAYAM courses. Hence, the majority of the prospective teachers have an average level of awareness of SWAYAM courses.

**Table 3: Understanding of SWAYAM courses among prospective teachers**

<i>Level of knowledge</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative percent</i>
Low	29	24.2	24.2
Average	47	39.2	63.4
High	44	36.6	100
Total	120	100	

**Barriers to Using SWAYAM**

The barriers to using SWAYAM are shown in Table 4 wherein out of the 120 respondents, 70 students said that they had signed up for MOOCs but were unable to complete even a single course. One course was finished by about 30 students, while two courses were taken by about 20 students. There were 10 students who finished more than two courses satisfactorily. Students mentioned a number of reasons for the poor adoption

**Table 4: Barriers to using SWAYAM**

<i>Statements</i>	<i>No. of person</i>
Lack of time due to academic schedules	35
Less effective compared to traditional Learning	40
Technical barriers	35
Monotonous	10

of MOOCs, including time bounds (35), less efficacy than traditional learning (40), technological difficulties (35), and monotony (10).

### Awareness of SWAYAM Courses with Respect to Demographic Variables

#### Hypothesis 1:

**a) There is no statistically significant variation in mean scores of awareness of SWAYAM courses based on gender.**

The level of understanding about SWAYAM courses in relation to gender are shown in Table 5 wherein the mean scores were 10.85 and 13.79 correspondingly with a standard deviation 2.27 and 2.35, respectively. The 't' value 6.21 is significant at 0.01 level. The inference is made that female students have a significantly higher understanding of SWAYAM compared to their male peers. Hence, the above-mentioned null hypothesis is found to be rejected.

#### Hypothesis 1:

**b) There is no statistically significant variation in mean scores of awareness of SWAYAM courses based on location.**

The awareness of SWAYAM courses with respect to locality is shown in Table 6 wherein the

mean scores were 11.60 and 15.00 correspondingly with a standard deviation 2.36 and 1.61, respectively. The 't' value 8.70 is significant at 0.01 level. It is inferred that urban students have a significantly higher level of awareness of SWAYAM than their rural counterparts. Hence, the above-mentioned null hypothesis is found to be rejected.

#### Hypothesis 1:

**c) There is no statistically significant variation in mean scores of awareness of SWAYAM courses based on graduation.**

The understanding of SWAYAM courses in relation to educational attainment is shown in Table 7 wherein mean scores were 11.87 and 15.32 correspondingly with a standard deviation 2.37 and 1.52, respectively. The 't' value 8.18 is significant at 0.01 level. It is inferred that postgraduate students have a significantly higher level of awareness of SWAYAM than their undergraduate counterparts. Hence, the above-mentioned null hypothesis was rejected.

#### Hypothesis 1:

**d) There is no statistically significant variation in mean scores of awareness of SWAYAM courses based on subject stream.**

The awareness of SWAYAM courses with respect to subjects is shown in Table 8 wherein the

**Table 5: Awareness of SWAYAM courses among prospective teachers based on gender**

Gender	N	Mean	S.D	df	t-value	p-value
Male	34	10.85	2.27	118	6.21	.000
Female	86	13.79	2.35			

**Table 6: Awareness of SWAYAM courses among prospective teachers based on location**

Locality	N	Mean	S.D	df	t-value	p-value
Rural	72	11.60	2.36	118	8.70	.000
Urban	48	15.00	1.61			

**Table 7: Awareness of SWAYAM courses among higher education students based on graduation level**

Educational qualification	N	Mean	S.D	df	t-value	p-value
UG	82	11.87	2.37	118	8.18	.000
PG	38	15.32	1.52			

mean scores were 10.09 and 14.74 correspondingly with a standard deviation 1.57 and 1.31, respectively. The 't' value of 17.47 is significant at 0.01 level. It is inferred that Science graduate education students have a significantly higher level of awareness of SWAYAM than their Arts counterparts. Hence, the above-mentioned null hypothesis was rejected.

**Hypothesis 1:**

**e) There is no statistically significant variation in mean scores of awareness of SWAYAM courses based on type of institute.**

The awareness of SWAYAM courses with respect to institute is shown in Table 9 wherein the mean scores were 15.15 and 11.55 correspondingly with a standard deviation 1.57 and 2.26, respectively. The 't' value 9.52 is significant at 0.01 level. It is inferred that university students have a significantly higher level of awareness of SWAYAM than their college counterparts. Hence, the above-mentioned null hypothesis is found to be rejected.

**Hypothesis 2:**

**There is no statistically significant variation in mean scores of awareness of SWAYAM courses among management types.**

Awareness of SWAYAM courses with respect to types of management is shown in Table 10 with the mean value of government M = 1.64, government aided M = 1.32, and private M = 1.27, respectively. The ANOVA Table 11 explained about the estimated 'F' value for the mean scores of prospective teachers with regard to SWAYAM course awareness  $F(df\ 2, 117) = 7.468$  is significant at the 0.01 level. As a consequence, the null hypothesis has been dismissed, confirming a significant disparity in knowledge of SWAYAM courses among prospective educators within the Dindigul District. Table 12 shows the comparison of mean values among three independent groups, namely, private, government aided and government institutions, where those studying in government institutions have better awareness about SWAYAM courses than private and government aided ones.

**Table 8: Awareness of SWAYAM courses among higher education students based on subject stream**

Subjects	N	Mean	S.D	df	t-value	p-value
Arts	46	10.09	1.57	118	17.47	.000
Science	74	14.74	1.31			

**Table 9: Awareness of SWAYAM courses between university and college students**

Institute	N	Mean	S.D	df	t-value	p-value
University	47	15.15	1.57	118	9.52	.000
College	73	11.55	2.26			

**Table 10: Awareness of SWAYAM with respect to types of management**

Type of Management	N	M	SD	SE
Government	61	1.64	.484	.062
Government Aided	37	1.32	.475	.078
Private	22	1.27	.456	.097
Total	120	1.48	.501	.046

**Table 11: ANOVA test results**

Type of institute	Sum of squares	df	Mean square	F	Sig.
Between groups	3.388	2	1.694	7.468	.001
Within groups	26.537	117	.227		
Total	29.925	119			

**Table 12: ANOVA test with post hoc test - Waller-Duncan**

Type of institute	N	alpha = .05	
		1	2
Private	22	1.27	
Government Aided	37	1.32	
Government	61		1.64

## DISCUSSION

The present study analyses the awareness of SWAYAM courses barriers to using them. The present study revealed that 23.6 percent respondents have low, 38.2 percent respondents have average and 35.8 percent of prospective teachers had high levels of awareness of SWAYAM courses. Hence, a majority of the prospective teachers have an average level of awareness of SWAYAM courses. The conclusions drawn from these studies align with prior research of Sahoo et al. (2019), Goel and Malik (2021) Vijayakumar and Rekha (2023) and Singh and Chauhan (2017) and suggesting a need to enhance awareness and access for the remaining population, indicating untapped potential for the platform's expansion in India's student community. The findings of the study are in line with the earlier work of Chandrakant Kothe (2023), wherein the female student teachers are more aware of SWAYAM online courses than male students. The findings of the studies by Monicka and Jayachithra (2019) and Subaveerapandiyan and Ahmed (2020) contradict the present study's findings revealing those students having high levels of SWAYAM awareness. The findings of the studies Shakya et al. (2016), Muzafarova and Kaya (2014), Ambadkar (2020) contradict the present study's findings revealing those students with a low level of SWAYAM awareness and a positive disposition towards learning via SWAYAM MOOCs has been noted. Mohile (2021) found that Mumbai University students were not very aware of the MOOCs platform SWAYAM, but exhibited a positive inclination towards using it. The study found that students mentioned a number of reasons for the poor adoption of SWAYAM courses, including time bounds, less efficacy than traditional learning, technological difficulties, Issues such as infrastructural deficiencies, inconsistent connectivity, limited technological support, and monotony

and this coincides with the findings of the studies of Ma and Lee (2018), Mohan et al. (2020), Subaveerapandiyan and Ahamed (2020), Aydin and Yazici (2020), Dafauti (2023), and Malik and Hooda (2023).

## CONCLUSION

SWAYAM serves as an accessible platform or delivering quality education, bridging the educational divide between urban and rural students. It empowers learners from all backgrounds to access mainstream knowledge, thereby enabling them to enhance their skills and unlock their inner potential. This digital platform plays a pivotal role in nurturing students' abilities and facilitating their educational growth. The study disclosed that among prospective teachers in Dindigul District, the comprehension and knowledge of SWAYAM courses is at an average level. These findings revealed that the prospective teachers have a basic understanding of SWAYAM courses. The enrollment of the students was higher than their course completion of SWAYAM due to some barriers to online learning. The barriers faced by the students, such as lack of time due to academic schedules, are less effective compared to traditional learning. The study helps the learners become aware of SWAYAM courses, which have created horizons for digital learners and support lifelong learning. The results of this study could serve as a beneficial resource for both teachers and administrators.

## RECOMMENDATIONS

The Ministry of Education ought to initiate measures to promote SWAYAM courses via mediums such as social media, television, radio, newspapers, and other social networking platforms, in order to increase awareness among aspiring teachers. SWAYAM courses should be displayed at universities, colleges and other research institutions. Some educational institutions can also display on their websites about SWAYAM courses to motivate the students in online courses. Universities may conduct workshops for students regarding SWAYAM courses. Universities, colleges and institutions can send circulars to respective departments about Courses offered on SWAYAM are disclosed well ahead of each semester. The SWAYAM portal ought to incorpo-

rate skill-based and additional certificate courses in addition to the existing traditional curriculum. The Ministry of Education has the ability to generate awareness among different institutions regarding the validity and reliability of certificates obtained from MOOCs for job consideration. The institutions must be equipped with high technology and with good infrastructure to overcome the barriers of online learning. Undoubtedly, this will encourage students to enroll in a greater number of SWAYAM courses.

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