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Research Article

Awareness Of Swayam Moocs Among Students Of Teacher Education

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ABSTRACT

Purpose: Massive Open Online Courses (MOOCs) are becoming more and more well-known and are still very important in the higher education sector. A relatively new paradigm of teaching and learning that greatly enhances ongoing lifelong learning in India is the delivery of MOOCs via SWAYAM. Even though there are a number of low-cost blended courses available, our students aren't enrolling in them. This shows that youngsters are not aware of the situation. Three categories were used to categorize awareness of SWAYAM MOOCs: knowledge about SWAYAM MOOCs, infrastructural facility, and enrollment status. The purpose of the current investigation is to examine the degree of awareness, the availability of infrastructural facilities for students, and the enrollment rate among students pursuing teacher education in state, private, and central universities in Middle Eastern India.

Methodology – The current study included 800 participants from B.Ed. and M.Ed. teacher education programs at central, state, and state-private institutions in Middle Eastern India. Utilizing a stratified random sampling approach, data were gathered using a self-made, closed-ended questionnaire that had been pretested and validated. Descriptive statistics, such as percentages, frequencies, and chi squares, were used to analyze the data.

Findings – The study's findings showed that teacher education students at central, state, and state-private universities in middle-eastern India were not well informed about MOOCs offered through SWAYAM, and that half of the participants did not receive adequate infrastructural support from their institutions. As a result, the majority of participants did not sign up for MOOCs offered through SWAYAM.

Practical implication – The current study will be helpful to Indian policy makers and everyone else engaged in spreading a healthy awareness through various initiatives like workshops, seminars, and orientation programs on awareness of MOOCs through SWAYAM. As a result, it would be helpful to understand the state of the ICT infrastructure and to take steps to increase awareness of MOOCs among higher education students across the nation. The data cannot be used to compare student awareness levels across contexts due to institutional limitations.

Social Implication- The study's conclusions demonstrated that, in the context of India, the identity of the university has a substantial impact on people's awareness of MOOCs via SWAYAM.

Originality/value: The present work is being carried out in the Middle Eastern Indian states of Odisha, West Bengal, Bihar, Jharkhand, Tripura, Asam, Meghalaya, and Chhatisgarh from January 2022 to August 2022.It reflects an investigation of how B.Ed. and M.Ed. teacher education students responded to SWAYAM's MOOC awareness questionnaire.

Keywords: SWAYAM, MOOCs, Teacher education, Awareness, university, Infrastructural facility

Introduction:

The advancements made to technology in the twenty-first century, particularly the development of web 2.0 technologies, altered how education is delivered. As a result, education has changed from traditional, in-person classroom instruction to online distance learning, which effectively engages many students at once. Massive Open Online Courses, or MOOCs, are a popular kind of blended learning that is currently popular in the educational community (Shaheen Altaf Shaikh, 2017).

All students throughout the world have access to a wide range of excellent educational resources through MOOCs (Liu & Sun, 1995). Despite the fact that "access to information and knowledge is the fundamental right of every individual," not everyone actually has access to this (Sharma, R. N., & Sharma, 1996). MOOCs, with their free or inexpensive resources, can prove to be a financially advantageous alternative for students to learn, particularly in poor nations like India where educational resources are not readily available (Kennedy, 2014).

Therefore a developing nation like India can benefit from MOOCs because of its freemium business model. Students can choose any course they're interested in from the enormous assortment of online courses given by MOOCs at their own pace, time, and location, and can earn credentials with little work (Jrall & Gupta, 2021). In this situation, the Government of India launched "SWAYAM" (Study Webs of Active-learning for Young Aspiring Minds) with the goal of bridging the digital divide for students and integrating them into the knowledge economy, keeping this in mind as well as maintaining balance with worldwide educational trends (www.swayam.gov.in).

Even though it is a more recent development in India than in western countries, stakeholder awareness is still insufficient. The implementation of MOOCs is said to be in its early stages in India, hence it is crucial to familiarize teachers with these online courses (Singh & Chauhan, 2017).

According to **Shaikh, (2017)** numerous courses are offered through SWAYAM portal, but students aren't signing up for them. Students must be encouraged to use online learning of instruction in this day and age. Therefore the majority of higher education student opinions about MOOCs were unfavourable.

India has a very high enrollment rate in SWAYAM MOOCs compared from its early years, although only about 5% of students complete their degrees (www.swayam.gov.in).

Because some students might not care about receiving credit and merely want to learn the fundamentals. Others may anticipate the acquisition of higher order skills including problem-solving aptitudes, mental models, and a drive for lifelong learning, as well as the expansion of social networks and/or entry into formal education (Van Hentenryck & Coffrin, 2014).

Advent and growth of massive open online course (MOOC)

According to Liyanagunawardena et al. (2014), MOOCs are online/ blended educational platforms where students can enroll and interact with teachers, mentors, and other students using tools like discussion boards and assignments.

Massive Open Online Courses (MOOCs) are new technology advancement in the educational sector of the first decade of the twenty-first century, and Dave Cornier initially popularized this concept in 2008 with Bryan Alexander (Nisha & Senthil, 2015) and have gained notoriety in the fields of distance learning since 2011 (Fan & Yu, 2017). Connectivist MOOCs (cMOOC), Expanded/Extension MOOCs (xMOOC), and Hybrid MOOCs (hMOOC) are the three different types of MOOCs (Lugton, 2012). cMOOCs are massive open online courses (cMOOCs) built on connectivism pedagogies (Siemens, 2012) and social learning (Fidalgo-Blanco et al., 2016) that connect students through online learning environments where learners' creativity, autonomy, and networking are encouraged.

Additionally, learners are expected to enrich with the course's content (Welsh & Dragusin, 2013). xMOOCs are cognitive-behaviorist and that they frequently include discussion boards or forums, pre-recorded video clips, and quizzes or tests to evaluate students' learning (Clarke, 2013). The term "learning endeavor, strategy, or paradigm that combines both MOOCs and MOOC-related technology into a regular curriculum" may be used to define hybrid MOOCs (Koskinen et al., 2021).

Indian MOOCs initiatives:

The majority of actions involving open education and open resources have been taken by the Indian government in the first and second decades of the twenty-first century to make it accessible to everyone. In order to provide online courses in computer science, electrical, mechanical, and ocean engineering, management, the humanities, music, and other fields, the Ministry of Human Resource Development (MHRD) launched a joint venture project called NPTEL (National Programme on Technology Enhanced Learning) with seven Indian Institutes of Technology (IITs) and the Indian Institute of Science (IISC) in 2003.Then, in 2014, IIT Kanpur (IITK) created MooKIT, and at the same time, IIT Bombay created the IITBombayX platform using the open-source platform Open edX (Chauhan, 2017). After these initiatives

Ministry of Human Resource and Development (MHRD) strives to strike a balance between tradition and global modern educational practices and then started the project "*Study Webs of Active Learning for Young Aspiring Minds*" (**SWAYAM**) in keeping the philosophy to provide access to the best learning resources nationwide through online/blended mode.

A mobile device, tablet, laptop, or desktop computer with an interactive internet connection can be used to access SWAYAM, an indigenous one-stop online portal, which offers online and blended courses from school level to post graduate level. Anyone who wants to improve their academic performance can enroll in the SWAYAM site and select the right courses from a vast selection. Whole courses have adopted the four quadrant method (e-Tutorial, e-Content, Web Resources, and Self-Assessment). Following course completion, students may transfer credits or obtain certificates for a minimal price (India, 2017).

Literature review:

Liu et al., 2015_Using qualitative and quantitative data, it was discovered that approximately 87.5% of the students were enthusiastic to participate in MOOCs, primarily to increase career opportunities, to learn from a specific expert, to learn better than in-person courses or other online courses, and to receive a certificate. Only 5.6% of the students, however, fulfilled all the prerequisites and paid the fee to obtain their certificate. (Shaikh, 2017) studied how well 100 aspiring teachers of B.Ed. and M.Ed. courses were aware of MOOCs—massive online open courses—based on ten different MOOC characteristics, including accessibility, usability, cost, student and teacher roles, quality of learning, course validity, course reliability, interaction, and resources.

The analysis's findings showed that although the majority of students were familiar with how to use computers and smartphones with internet access, and 90% of them knew what MOOCs were, but knowledge of ten other areas regarding MOOCs was relatively low. To explore students' involvement in MOOCs, Almutairi & White (2018) created a model based on nine attributes. They discovered that these attributes strongly measured students' engagement at the 0.05 level. (Sivakumar, 2019) it is discovered that due to lack of a fundamental grasp of MOOCs and SWAYAM and the ambiguous nature of their role in teacher training, students teachers were found to have insufficient knowledge of both. (Monicka & Jayachithra, 2019) There was a substantial difference based on the study's exploration and comparison of graduate and postgraduate student teachers' perceptions and awareness of MOOCs among students from the arts and sciences as well as rural and urban student populations.

Additionally, it was discovered that science student teachers are more aware than humanities students. (Sera and Lobo, 2019) investigated the user experience and challenges faced by Postgraduate students in the Belthangady Taluk and discovered that 79% of the students are enrolled, but 40% of the respondents have trouble navigating the interface, while 26% have trouble with breakdowns, and 34% have trouble logging in.

Additionally, 30% of the respondents anticipate a fee reduction. According to Kumar, (2019), 43% of Veterinary Scholars finished the course; 47% only partially completed it; and 9% never enrolled in the course but 99% showed interest in the online discussion forum. (Adebayo & Babalola, 2021) Based on three dimensions - potentials/benefits, engaging in MOOCs, and various forms of MOOCs - it was discovered that undergraduate law students in Osun State have a typically low understanding of MOOCs but interest to use was high. In their study, Rodriguez et al. (2020) discovered that a MOOC's duration affects student engagement, retention, and completion rates. Six-week courses had a completion rate of 15.60%, while two- and three-week courses had a completion rate of 61.82%. (Kundu & Bej, 2020) found that science students at Indian state universities had higher levels of awareness than students majoring in arts, social science, or law. Postgraduate students also displayed higher levels of awareness than undergraduate students.

Additionally, it was discovered that while student interest in enrolling is strong, satisfaction was low. (Shao & Chen, 2020) Based on the researcher's empirical research of perceived active control, perceived synchronicity and perceived two-way communication in MOOCs, it was found that these three attributes positively correlated with individuals' intention to continue taking MOOCs and had a gender effect. Females prefer active control and two-way communication, while males prefer synchronicity and task. (Purkayastha & Sinha, 2021) mainly focused on the awareness level of MOOCs among postgraduate level library science students of Asam and Silchar University and discovered that 71.4% students were aware of SWAYAM but most of the students were uninformed of MOOCs courses which can be taken for credit transfer and 50% students choose face-to-face mode of learning over online learning. In their study, (Subaveerapandiyan and Ali Ahamed, 2021) discovered that while 83.33% of higher education students from five universities were aware of using SWAYAM MOOCs and had enrolled in courses, their level of satisfaction with video lectures, content, and appropriate courses for their degree programs was surprisingly low.

According to Jrall and Gupta, (2021), among teacher educators in the Jammu division, 73.91% of females and only 50% of males are aware of SWAYAM MOOCs. However, both sexes (100%) are aware that a variety of learning materials in various formats are available in MOOCs, and they both download these materials for their own educational purposes.

Significance of the study:

Massive Open Online Courses (MOOCs) offered through the SWAYAM platform in India could start an effective interactive learning environment for Indian students while keeping up with the latest trends and doing so in a practical and affordable manner. SWAYAM MOOCs are the sole way for people in India to get access to high-quality, reasonably priced education without having to pay for infrastructure or overcome age, location, or time barriers. Additionally, the teacher-student ratio is still not maintained in every institution, and there is still a shortage of effective, skilled, and technologically advanced teachers. However, thanks to MOOCs, we can at least partially overcome this issue because they provide access to knowledgeable instructors from all over India. Thus, through enhancing accessibility and openness, Massive Open Online Courses (commonly abbreviated as MOOCs) have emerged as bridge between digital divide and cutting-edge educational concepts. Low success rates or high dropout rates, however, remain the most vexing problems. This makes it a relevant strategy that has to be verified. As a result, the researcher expressed a strong interest in researching teacher education students' awareness of SWAYAM MOOCs.

Objectives:

1. To assess the level of awareness of SWAYAM MOOCs among teacher education students.
2. To investigate the status of infrastructural facility available in university for students to access SWAYAM MOOCs.
3. To know the status of enrollment of teacher education students in MOOC courses through SWAYAM.

Hypothesis:

Ho There is no significance difference among central, state and state private university teacher education students on level of awareness.
H1 There is a significance difference among central, state and state private university teacher education students on level of awareness.
Ho There is no significance difference among central, state and state private university on providing infrastructural availability to teacher education students.
H1 There is a significance difference among central, state and state private university on providing infrastructural availability to teacher education students.

Methodology:

This study was conducted using descriptive survey method. Hereunder researchers provided methodological details:According to University Grant Commission's document India has 432 private universities, 128 deemed to be universities, 54 central universities, and 464 state universities as of March 31, 2023. For the current study, the researcher randomly selected 24 institutions from West Bengal, Bihar, Odisha, Jharkhand, Tripura, Asam, Meghalaya, and Chattisgarh, including central universities, state universities, and state private universities. The letters CU1, CU2, CU3, CU4, C5, C6, C7, and C8, which stand for central universities; SU1, SU2, SU3, SU4, SU5, SU6, SU7, and SU8; and SPU1, SPU2, SPU3, SPU4, SPU5, SPU6, SPU7, and SPU8, which stand for state private universities, have been used to symbolize the names of the universities. For reasons of ethics, the researcher kept this a secret. Graduate (B.Ed.) and postgraduate (M.Ed.) teacher education students make up the study's target audience. To obtain the target sample, we used the stratified random sampling technique. In order to collect data, the researcher randomly selected 200 M.Ed. students from three central, three state, and five state private university or colleges, as well as 25 B.Ed. students from each central, state, and state private university. Thus, the whole sample was made up of 200 + 200 + 200 + 75 + 75 + 50 = 800. Three categories were used to categorize awareness of SWAYAM MOOCs: knowledge about SWAYAM MOOCs, infrastructural facility, and enrollment status
In this study, the researcher used a survey method and a straightforward stratified random sampling procedure to gather data from randomly chosen central, state, and state- private institutions in Middle and Eastern India over the course of eight months, from January 2022 to August 2022. Data were collected via email, Whatsapp, Facebook, and face-to-face interactions, depending on the circumstances. A structured, closed-ended survey questionnaire was distributed to 1200 participants by the researcher, and respondents were asked to rate the statements on a five-point Likert scale and yes/no scale in order to avoid forced-choice bias. The researcher got 450 responses from online survey, and the rest were collected through face to face.
To test the efficacy and validity of the self-created closed questionnaire, the researcher conducted a small survey among a small sample of teacher education students and established reliability and validity of questionnaire.
Descriptive data, such as percentages and graphic representations, are utilized to provide a general picture regarding SWAYAM consciousness among teacher education students.

Data analysis and interpretation:

In this section, the researchers go through the analysis of obtained responses according to specific research objective and hypothesis. We merge observed frequencies of strongly agree and agree with "agree" category and strongly disagree and disagree with "disagree" category then apply chi-square test of independence. First we analyse the first objective and proved related hypothesis:

1. Level of awareness of SWAYAM MOOCs among teacher education students.

Ho There is no significance difference among central, state and state private university teacher education students on level of awareness.

H1 There is a significance difference among central, state and state private university teacher education students on level of awareness.

According to the researchers' results regarding the first goal, which was to determine the level of awareness of MOOCs, 39.6% of teacher education students (strongly disagree+ disagree) were not aware of MOOCs, while 39.5% (strongly agree+ agree) of teacher education students were well aware of MOOCs. 20.9% of students were unsure, in contrast (see table I). This result was in line with past studies from other researchers who discovered that MOOCs are not well understood by both students and teachers in various nations, including those outside of India (Shigeta et al., 2017; Allen and Seaman, 2014; Kumar and Singh, 2017; Shakya et al., 2016). The Researchers also found that level of awareness has been varied in respect of nature of university. Pearson Chi square result shows that p-value .000 is less than 0.05 and estimated $\chi 2 = 62.431$ is greater than the table value of $\chi 2 = 15.51$ at 0.05 percent level of significance and 8 degrees of freedom.

Table I
I am well aware about MOOCs

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	135	16.9	16.9	16.9
Disagree	182	22.8	22.8	39.6
Neutral	167	20.9	20.9	60.5
Agree	213	26.6	26.6	87.1
Strongly Agree	103	12.9	12.9	100.0
Total	800	100.0	100.0	

The researcher discovered a similarity between table II and table one and reported that while 43.8% of teacher education students were aware of MOOCs offered in India through a different platform and 23% of them were neutral, 32.6% of them (strongly disagree+ disagree) did not have the necessary knowledge about them.

The chi square result demonstrated how the range of heterogeneity among teacher education students differed depending on their affiliation with the university. It demonstrates that the estimated $\chi 2 = 49.034$ is bigger than the table value of $\chi 2 = 15.51$ at 0.05 percent level of significance and 8 degrees of freedom, and the p-value of.000 is less than 0.05, indicating that there is sufficient evidence to reject the null hypothesis.

Table II
I know about MOOCs offered in India

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	107	13.4	13.4	13.4
Disagree	154	19.3	19.3	32.6
Neutral	189	23.6	23.6	56.3
Agree	252	31.5	31.5	87.8
Strongly Agree	98	12.3	12.3	100.0
Total	800	100.0	100.0	

Table III data shows that total 40.2% (strongly disagree+ disagree) of teacher education students of Middle Eastern India had no idea on what facilities MOOCs provided in comparison to traditional class room teaching, but 40.1% (strongly agree+ agree) of teacher education students know and understand the facilities get through MOOCs courses, and rest of the learners were neutral in this case. University has played a vital role towards understanding the facilities of MOOCs through SWAYAM. Chi square result shows that $\chi 2 = 127.377$ is bigger than the table value of $\chi 2 = 15.51$ at 0.05 percent level of significance and 8 degrees of freedom, and the p-value of.000 is less than 0.05, indicating that there is sufficient evidence to reject the null hypothesis and accept alternative hypothesis.

Table III
I understand the facilities of learning through SWAYAM

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	154	19.3	19.3	19.3
Disagree	167	20.9	20.9	40.1
Neutral	158	19.8	19.8	59.9
Agree	220	27.5	27.5	87.4
Strongly Agree	101	12.6	12.6	100.0
Total	800	100.0	100.0	

Table IV displays the knowledge of different credit/noncredit courses offered on the SWAYAM platform for specific degree programmes among teacher education students. The majority of students in teacher education programs were still unsure about this, according to the research, which revealed that 37.4% (strongly disagree+ disagree) of B.Ed. and M.Ed. students were uninformed of their respective courses on the SWAYAM site and just 33.8% (strongly agree+ agree) were aware of that.
This distinction has also been noted among universities. At 0.05 percent level of significance and 8 degrees of freedom, the chi-square result reveals that $\chi 2 = 179.704$ is more significant than the table value of $\chi 2 = 15.51$, and the p-value of.000 is less than 0.05, indicating that there is enough evidence to accept the alternative hypothesis rather than the null hypothesis.

Table IV
I know the various credit/non-credit courses of MOOCs on SWAYAM

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	121	15.1	15.1	15.1
Disagree	178	22.3	22.3	37.4
Neutral	231	28.9	28.9	66.3
Agree	178	22.3	22.3	88.5
Strongly Agree	92	11.5	11.5	100.0
Total	800	100.0	100.0	

Although real-time interaction is not possible on the SWAYAM platform, there is a provision for an online discussion forum; however, this feature may only sometimes be available. As a result, students must be knowledgeable about it. Table V reveals that 34.7% (strongly agree+ agree) of Middle Eastern Indian teacher education students were aware of it. However, most chose to remain silent, while 36.6% (strongly disagree+ disagree) were unaware.
The researchers discovered that the degree of familiarity with the SWAYAM platform's teaching-learning technique differed from university to university. This is proved through the chi-square result, which reveals that $\chi 2 = 174.713$ is more significant than the table value of $\chi 2 = 15.51$, and the p-value of.000 is less than 0.05, indicating that there is enough evidence to accept the alternative hypothesis rather than the null hypothesis.

Table V
I know the teaching-learning transaction system in SWAYAM

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	108	13.5	13.5	13.5
Disagree	185	23.1	23.1	36.6
Neutral	230	28.7	28.7	65.4
Agree	191	23.9	23.9	89.3
Strongly Agree	86	10.8	10.8	100.0
Total	800	100.0	100.0	

The degree of evaluation system awareness among students pursuing teacher certification is displayed in Table VI. It reveals that while 36% (strongly disagree+ disagree) of pupils had lack of awareness on it and 37.1% (strongly agree+ agree) were aware but 27.9 % were neutral about this. . There is sufficient evidence to adopt the alternative hypothesis rather than the null hypothesis, as shown by the fact that $\chi 2 = 160.338$ is more significant than the table value of $\chi 2 = 15.51$ and the p-value of.000 is less than 0.05. As a result, it is possible to draw the conclusion that the degree of awareness of the evaluation system varies depending on the university.

Table VI
I know the examination system in SWAYAM

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	91	11.4	11.4	11.4
Disagree	189	23.6	23.6	35.0
Neutral	223	27.9	27.9	62.9
Agree	183	22.9	22.9	85.8
Strongly Agree	114	14.2	14.2	100.0
Total	800	100.0	100.0	

The understanding of certification systems is another issue concerning awareness. For a student to receive a certificate and transfer credits through SWAYAM, they must satisfy all requirements, including turning in all of their assignments, passing the final exam, and getting a grade higher than the cutoff. Only 27.1% of students enrolled in teacher education (strongly agree+agree) knew about this problem, compared to nearly 50% (strongly disagree+ disagree). The other students lacked any bias. This figure (see table VII) suggests that 50% of students may have yet to realize this, which is not encouraging for SWAYAM. The chi-square test showed that the amount of awareness depends on the university. The result shows that that $\chi 2 = 130.208$ is more significant than the table value of $\chi 2=15.51$ and the p-value of.000 is less than 0.05. As a result, it is possible to draw the conclusion that the degree of awareness on the certification varies depending on the university.

Table VII
I am not aware about certification system of SWAYAM

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	124	15.5	15.5	15.5
Disagree	276	34.5	34.5	50.0
Neutral	209	26.1	26.1	76.1
Agree	150	18.8	18.8	94.9
Strongly Agree	41	5.1	5.1	100.0
Total	800	100.0	100.0	

SWAYAM's MOOC platform offers the option of airing video lectures from various courses on the DTH channel SWAYAMPRABHA. It offers a significant chance to its stakeholders struggling with internet issues. As a result, students must be aware of this facility. Table VIII reveals that 49% (strongly disagree + disagree) of students were uninformed of this facility, 27.4% (strongly agree + agree) were aware of it, and the other students were silent. The chi square result shows that that $\chi 2 = 153.963$ is more significant than the table value of $\chi 2=15.51$ and the p-value of.000 is less than 0.05. As a result, it is possible to draw the conclusion that the degree of awareness about DTH channel SWAYAMPRABHA varies depending on the university.

Table VIII
I know about the DTH channel i.e SWAYAMPRABHA

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	126	15.8	15.8	15.8
Disagree	266	33.3	33.3	49.0
Neutral	189	23.6	23.6	72.6
Agree	174	21.8	21.8	94.4
Strongly Agree	45	5.6	5.6	100.0
Total	800	100.0	100.0	

Four quadrant approaches are used in the MOOC courses on the SWAYAM portal, and students must follow these ways in order to pass the course. As a result, it is also a crucial awareness issue. Table IX demonstrates that when strongly disagree and disagree are combined, 46.9% of students in teacher education programs fall into the disagree category, suggesting that they were unaware of the four quadrant approaches.

In contrast, only 25.3% of students fall into the agreed category when they strongly agree and agree combined, and the remaining students did not respond positively or negatively.

Depending on the type of university, the researcher also discovered that teacher education students had varying knowledge of that issue.

As the chi square result shows that that $\chi 2 = 130.830$ is more significant than the table value of $\chi 2=15.51$ and the p-value of.000 is less than 0.05. As a result, it is possible to draw the conclusion that the degree of awareness about four quadrant approaches varies depending on the university.

Table IX
I know four quadrant systems in SWAYAM

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	123	15.4	15.4	15.4
Disagree	252	31.5	31.5	46.9
Neutral	223	27.9	27.9	74.8
Agree	156	19.5	19.5	94.3
Strongly Agree	46	5.8	5.8	100.0
Total	800	100.0	100.0	

Researchers looked at students' knowledge of SWAYAM's national coordinator and found that only 20.3% of teacher education program students from different central, state, and state private universities were aware of the national coordinator, while the remaining 47.3% (strongly disagree + disagree) were unconcerned about the topic (see table X). According to the type of university, the knowledge of students enrolled in teacher education differed. As the chi square result shows that $\chi 2 = 123.926$ is more significant than the table value of $\chi 2=15.51$ and the p-value of.000 is less than 0.05.
As a result, it is possible to draw the conclusion that the degree of awareness about national coordinator varies depending on the university.

Table X
I know the national coordinators of SWAYAM MOOCs

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	111	13.9	13.9	13.9
Disagree	267	33.4	33.4	47.3
Neutral	260	32.5	32.5	79.8
Agree	120	15.0	15.0	94.8
Strongly Agree	42	5.3	5.3	100.0
Total	800	100.0	100.0	

Status of infrastructural facility available in university for students

In this section the researchers analyse the status of infrastructural availability in universities for students and make a comparison among universities in providing infrastructural facilities.
An internet-connected computer is a requirement for using SWAYAM to access MOOCs. Although a computer may access it as well as a mobile device, the latter is more efficient. According to Table XI , only 27.9% (strongly agree + agree) of teacher education students received this facility from the university, while 51% (strongly disagree + disagree) of them disagreed. The remaining teacher education students were indifferent in this situation.
This facility transitioned from university to university degree. Chi square analysis proved that $\chi 2 = 84.073$ is more significant than the table value of $\chi 2=15.51$ and the p-value of.000 is less than 0.05. As a result, it is possible to draw the conclusion that the degree of providing facility to the teacher education students varies depending on the university.

Table XI
I get computer facilities with internet from my institution

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	149	18.6	18.6	18.6
Disagree	259	32.4	32.4	51.0
Neutral	169	21.1	21.1	72.1
Agree	158	19.8	19.8	91.9
Strongly Agree	65	8.1	8.1	100.0
Total	800	100.0	100.0	

It not possible to provide computer facility to everyone, but providing facility of free wifi is possible. Table XII shows that 60.1% (strongly disagree + disagree) of students of teacher education reported that they did not get this facility from their university, while 24.9% (strongly agree + agree) of them got this facility, only 15% were neutral.
The researchers also found from chi square analysis that degree of providing this facility to teacher education students varies among university. Therefore chi square $\chi 2 = 62.943$ is more significant than the table value of $\chi 2=15.51$ and the p-value of.000 is less than 0.05. As a result, it is possible to draw the conclusion that the degree of providing facility to the teacher education students varies depending on the university.

Table XII
Institution provides free wi-fi

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	274	34.3	34.3	34.3
Disagree	207	25.9	25.9	60.1
Neutral	120	15.0	15.0	75.1
Agree	143	17.9	17.9	93.0
Strongly Agree	56	7.0	7.0	100.0
Total	800	100.0	100.0	

An ABC (academic bank of credit) ID is a prerequisite for students who want to enroll in classes or transfer credits from MOOCs through SWAYAM. 49.5% of students enrolled in teacher education did not have this ID, according to Table XIII, whereas 50.5% had. We can therefore infer that each university has a unique policy regarding the distribution of ABC ID to students enrolled in teacher education, which is proved as chi square $\chi 2 = 138.332$ is more significant than the table value of $\chi 2=5.99$ and the p-value of .000 is less than 0.05 with 2 degrees of freedom.

Table XIII
I have ABC (academic bank of credit) ID.

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	404	50.5	50.5	50.5
No	396	49.5	49.5	100.0
Total	800	100.0	100.0	

2. Status of Enrollment in course through SWAYAM MOOCs

Table XV reveals that 149 of the 800 teacher education participants from 24 universities, including the central university, state university, and state private university of Middle Eastern India, have enrolled in MOOCs through the SWAYAM platform. In contrast, the remaining 651 participants out of 800 have yet to enroll in any MOOC courses. Out of 600 B.Ed. students, 17.16% participated in MOOCs through SWAYAM, and 23% of M.Ed. participants out of 200 did so (see Tables XIV and XV).

Table XIV
Status of enrollment in SWAYAM MOOCs University wise

University	Total no of student	Enrolled in MOOCs	%	Not Enrolled in MOOCs	%
Central University	275	70	25.45	205	74.54
State University	275	39	14.20	236	85.80
State Private University	250	40	16	210	84
Total	**800**	**149**	**18.6**	**651**	**81.4**

Table XV
Status of enrollment in SWAYAM MOOCs Programme wise

University	Total no students		Teacher Education Programme	Enrolled in MOOCs	%	Not Enrolled in MOOCs	%
Central University	**275**	**200**	**B.Ed**	**50**	**25**	**150**	**75**
		75	**M.Ed**	20	26.6	55	73.3
State University	**275**	**200**	**B.Ed**	24	12	176	88
		75	**M.Ed**	15	20	60	80
State Private University	**250**	**200**	**B.Ed**	29	14.5	171	85.5
		50	**M.Ed**	11	22	39	78
Total	**800**	**800**		**149**	**18.6**	**651**	**81.4**

Discussion:

This study, conducted at central, state, and state private-owned universities in Middle Eastern India, to investigate the level of various viewpoints on awareness of MOOCs through the SWAYAM platform among teacher education students.

The researchers investigated the degree of awareness and its dependence on the institution, as well as the extent to which the university provides infrastructure facilities and the degree of enrolment.The study found that there is a low level of awareness among teacher education students of central, state, and state private-owned universities in Middle Eastern India on the national coordinator of MOOCs, the four quadrant approach, SWAYAMPRABHA, the certification and evaluation system, the teaching-learning system, and relevant courses and facilities of MOOCs, even though 39.5% of them are familiar with MOOCs through SWAYAM platforms and the chi-square tests, proved that the level of awareness is not independent in respect of the university.

The average awareness discrepancies between central, state, and state private university teacher education students are displayed in Table XVI.

Table XVI
Mean difference between Universities

UNIVERSITY		I am well aware about MOOCs.	I know about MOOCs offered in India.	I understand the facilities of learning through	I know the various courses relevant to me	I know the teachinglearning transaction system in	I know the examination system in	I am not aware to the certification system of SWAYAM.	I know about the DTH channel i.e SWAYAMPRABHA.	I know four quadrant systems in SWAYAM.	I know the national coordinators of SWAYAM MOOCs.
CENTRAL UNIVERSITY	Mean	3.19	3.20	3.54	3.51	3.52	3.60	3.20	3.07	3.07	2.95
	N	275	275	275	275	275	275	275	275	275	275
	Std. Deviation	1.188	1.154	1.230	.975	.964	.986	1.011	.979	1.070	.927
STATE UNIVERSITY	Mean	3.17	3.26	2.82	2.94	3.03	3.12	2.43	2.85	2.84	2.81
	N	275	275	275	275	275	275	275	275	275	275
	Std. Deviation	1.331	1.116	1.277	1.153	1.187	1.213	.980	1.126	1.038	1.063
PRIVATE UNIVERSITY/ COLLEGE	Mean	2.46	2.81	2.39	2.27	2.25	2.37	2.24	2.07	2.10	2.12
	N	250	250	250	250	250	250	250	250	250	250
	Std. Deviation	1.242	1.390	1.208	1.231	1.091	1.138	1.094	1.081	1.031	1.003
Total	Mean	2.96	3.10	2.93	2.93	2.95	3.05	2.64	2.68	2.69	2.64
	N	800	800	800	800	800	800	800	800	800	800
	Std. Deviation	1.298	1.235	1.325	1.227	1.200	1.220	1.107	1.143	1.122	1.060

Internet access is required in order to use SWAYAM to access MOOCs, however research results showed that more than 61% of teacher education students lacked both this and an ABC ID, and these numbers varied from institution to university. As a result, there are few students enrolled in MOOCs from teacher education programs at Middle Eastern India's central, state, and state-owned private universities. The outcome suggests that the university and its faculties did not appropriately promote students of teacher education to sign up for MOOCs on the SWAYAM platform.

Conclusion:

This study seeks to ascertain how much teacher education students in Middle Eastern Indian central, state, and state-owned private colleges are aware of MOOCs by assessing their perceptions. The current study looked at the state of MOOC enrolment as well as the infrastructure accessible to teacher education students to access MOOCs through SWAYAM. The results show that there is a lack of infrastructure for accessing MOOCs as well as a lack of knowledge about MOOCs among students in teacher education. Findings of the results also revealed that degree of awareness, level of facilities getting to access MOOCs and status enrollment etc. vary depending on types of universities. This study also found that postgraduate (M.Ed.) rather than graduate (B.Ed.) students at central institutions are more likely to know about MOOCs than students at other universities and are more likely to enroll in them. Almost 18.6% of students pursuing teacher certification are enrolled in a MOOC through SWAYAM.

Limitation:

The study does have some constraints. Due to institutional contexts, regional characteristics of state, programme of study, and platforms used in the current study, the findings may not be applicable to explain or compare the level of awareness about MOOCs elsewhere. The study was conducted on teacher education students (B.Ed and M.Ed) who were from central, state and state private universities in Middle Eastern India. In addition, connections that support the discussed criteria might exist but not have been looked at in the current study, providing a new area of investigation for future research.

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