



Learning Analytics of a MOOC under SWAYAM: A Case of a Teacher Education Course on 'Assessment for Learning'

Niradhar Dey^{1*} and Vaishali²

¹*Professor of Education, School of Education, IGNOU, New Delhi, India*

²*Ph.D. Research Scholar (SRF), School of Education, IGNOU, New Delhi, India*

*Corresponding author: niradhar@ignou.ac.in

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ABSTRACT

The study 'Learning Analytics of a MOOC under SWAYAM: A Case of a Teacher Education Course on Assessment for Learning' is a survey of three iterations of the online course Assessment for Learning under the SWAYAM platform. 161 students were selected purposively for the study who pursued the course in different sessions. A descriptive survey method has been used to conduct the study. A mixed form of questionnaire developed in Google Form has been used to gather information. Data has been analysed by using simple descriptive statistics like frequency count, percentage, and average scores. Both qualitative and quantitative modes of data analysis have been used in this study. The findings reflect that the course has successfully attracted a diverse, predominantly rural, and female learner base from teaching backgrounds and has received a strong overall quality rating from the learners enrolled in the course. The overall satisfaction of the learners was quite good in terms of different parameters in course components, like watching the video lessons, reading the text materials, participating in the discussion forums, and attending the assessment components. Apart from the course satisfaction, the study also highlights some critical challenges. Despite the continuous enrolment growth, the certification rates remained low, a reflection of the broader systemic challenge of MOOCs. The gap between enrolment and certification calls for immediate attention to personalised guidance, accessible offline content, focus on multilingual resources, an interactive discussion forum, and learner support mechanisms.

Keywords: Massive Open Online Courses (MOOCs), SWAYAM, E-tutorial, E-Content, Discussion Forum, Assessment, Synchronous Communication. Asynchronous Communication

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At the present time, it has been observed that education through online mode is getting popular across the globe. Since 2017, India has implemented its flagship Massive Open Online Course (MOOC) platform in the name of Study Webs of Active Learning for Young Aspiring Minds (SWAYAM). Like SWAYAM, many other popular platforms are also offering online courses across the globe.

Ossiannilsson (2021) reported that currently, the largest MOOC providers are Coursera, edX, Future Learn, SWAYAM, and Udacity. SWAYAM is an online learning platform initiated by the Government of India and designed to achieve the three cardinal principles of education policy, viz., access, equity, and quality. The 3 cardinal principles of SWAYAM are as follows.

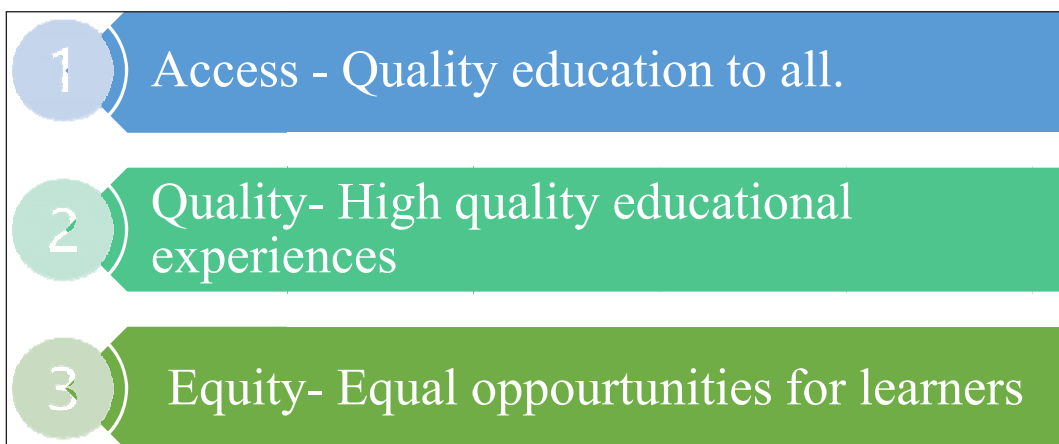


Fig. 1: Cardinal principles of SWAYAM

The objective of this effort is to take the best teaching and learning resources to all, including the most disadvantaged groups of society. SWAYAM seeks to bridge the digital divide for students who have remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy. (SWAYAM Guidelines, MoE, Govt. of India, 2023).

The courses hosted on SWAYAM are based on a 4 component approach – (1) E-tutorials i.e. video lectures, (2) E-content i.e. reading materials for the students that can be downloaded/printed, (3) Discussion forum for clearing the doubts and to initiate a synchronous and asynchronous communication with the students, and (4) Assessment through tests, quizzes, short and long answer type of questions, etc. Recently, from the four-component approach, SWAYAM has implemented a multi-dimensional learning system having six approaches, such as e-tutorials, e-content, interactive platform, assessment, industry vertical, and blended learning ecosystem, as shown in Fig. 2. The multi-dimensional learning system is specially designed for the technical and industry skill-based courses (SWAYAM Guidelines, 2024).

Ten National Coordinating Centres have been approved to develop the online courses and to offer them across India. The National coordinating centres are such as: All India Council for Technical Education, National Programme on Technology Enhanced Learning, University Grants Commission, Consortium for

Educational Communication, National Council of Educational Research and Training, National Institute of Open Schooling, Indira Gandhi National Open University, Indian Institute of Management, Bangalore, National Institute of Technical Teachers Training and Research, and Institute of National Importance.



Fig. 2: Multidimensional employment approach of SWAYAM

Most of the MOOCs under SWAYAM are academic programme-based, such as the courses taught at the undergraduate and postgraduate levels. Courses delivered through SWAYAM are available free of cost to the learners. Learners who wish to get a certificate should register for the final proctored exams that come at a fee and attend in person at designated centres on specified dates, conducted by the National Testing Agency (NTA). Universities/colleges approving credit transfer for these courses can use the marks/certificate obtained in these courses for the same. The UGC, the highest regulatory body of Higher Education in India, has also notified for credit transfer of a maximum 40% credits earned online in a programme for the final certification of the programme (UGC, 2024).

Indira Gandhi National Open University (IGNOU), as one of the national coordinators, has developed more than 340 MOOCs under SWAYAM of 2, 4, and 6 credits for the benefit of the learners. (IGNOU, 2026)

Nearly 6 million students have enrolled in different courses from the national coordinators and are taking advantage of credit transfer since 2017 (Fig. 3).

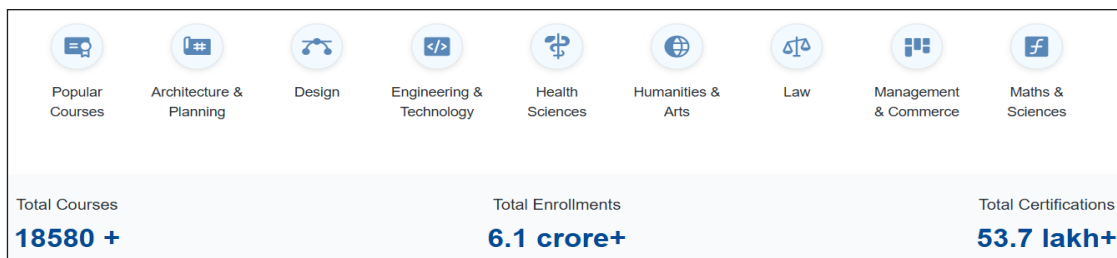


Fig. 3: Status of completed courses in different iterations and enrollment of students in MOOCs under SWAYAM

Fig. 4 presents key statistics of the SWAYAM platform, showing that 205 partnering institutes have collectively offered 16,839 completed courses with a massive 59870952 student enrollments. Among them, 9701093 registered for exams and 6202354 successfully earned certification, after completion of their course.

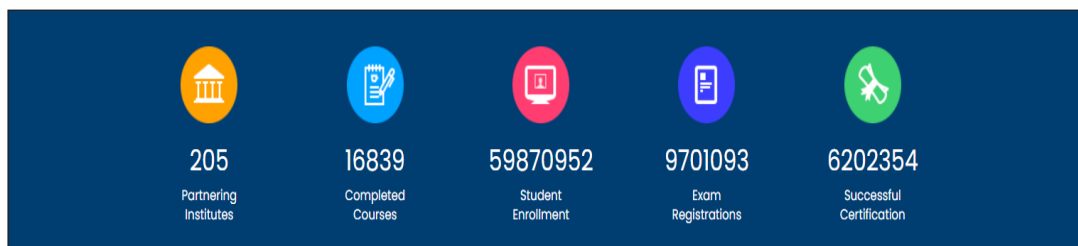


Fig. 4: Status of completed courses, students' enrollment, and successful completion of students in MOOCs under SWAYAM in IGNOU

The present study is analyzing a MOOC on one of the Teacher Education Courses, i.e., Assessment for Learning, under the SWAYAM platform, offered since the July 2021 session.

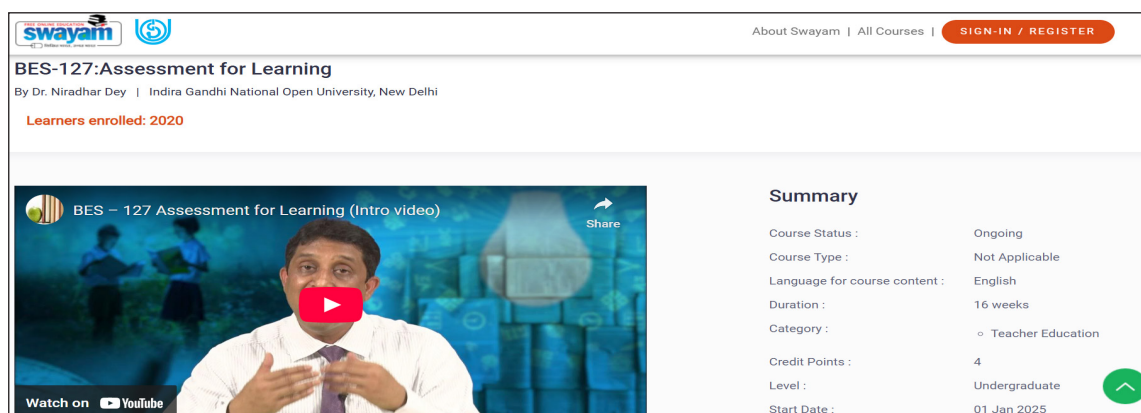
Assessment for Learning: A Teacher Education MOOC under SWAYAM

‘Assessment for Learning’ is a 4-credit course offered under the IGNOU B.Ed. Programme in ODL mode. The same course has also been designed as a MOOC, as per the 4-component approach, and offered under the SWAYAM Platform. This is one of the core courses studied in the second year of IGNOU B.Ed. programme. The course consists of four blocks comprising 16 modules. The Course deals with important components of assessment and evaluation used in the classroom teaching-learning processes. The objectives of the course are to make the students -

- ☐ Describe the critical role of assessment in enhancing learning;
- ☐ Explain the constructivist paradigm of assessment used in learning-teaching situations;
- ☐ Explain the concept of assessment as an ongoing process of development of learning, but not an end-of-teaching activity;

- ❑ Analyse assessment and evaluation approaches used in learning-teaching situations;
- ❑ Acquaintance with the current trends and practices of educational evaluation;
- ❑ Use various techniques and tools of evaluation;
- ❑ Prepare different tools for assessing learners' performance;
- ❑ Use ICT for assessing the performance of the learners;
- ❑ Understand the application of various statistical techniques/methods in assessing learners' performance; and
- ❑ Compare and interpret the performance of the learners quantitatively and qualitatively.

The Online Course has been designed in 4 Blocks with 16 Modules to complete the course on a week-wise, modular content basis, i.e., in every week, one module to complete. Accordingly, the learners have to complete the course in 16 weeks (4 Months). Figure 5 shows the home page of the course “Assessment for Learning” and it includes the necessary information on course status, course type, language, duration, etc. Credit transfer facilities are also available in the course as per the prescribed norms of SWAYAM.



The screenshot shows the SWAYAM platform interface for the course 'BES-127: Assessment for Learning'. At the top, there are logos for SWAYAM and the Ministry of Education, Government of India. Navigation links include 'About Swayam', 'All Courses', and a 'SIGN-IN / REGISTER' button. The course title 'BES-127: Assessment for Learning' is displayed, along with the instructor 'By Dr. Niradhar Dey' and the institution 'Indira Gandhi National Open University, New Delhi'. A red banner indicates 'Learners enrolled: 2020'. Below this, there is a video player for the 'BES - 127 Assessment for Learning (Intro video)' with a 'Share' button. To the right of the video, a 'Summary' section provides details: Course Status (Ongoing), Course Type (Not Applicable), Language for course content (English), Duration (16 weeks), Category (Teacher Education), Credit Points (4), Level (Undergraduate), and Start Date (01 Jan 2025). A green upward arrow icon is located at the bottom right of the summary section.

Fig. 5: Home page of the course ‘Assessment for Learning’ in the SWAYAM platform

Review of Related Literature

Relating to learning analytics in MOOCs, Siemens (2013), Klemke *et al.* (2015), Jivet *et al.* (2017), and Gasevic *et al.* (2016) emphasized on understanding the concept and philosophy of analysing learning occurred in an online system, collecting necessary data for the analysis, predicting learners' outcomes, and developing personalized learning. Dong *et al.* (2017) reported that the critical aspects of MOOCs are the vast number of learners, which presents challenges in ensuring learner engagement. Learning analytics tools help track engagement levels, providing instructors and course designers with insights

into when and where learners tend to drop off or disengage. Cohen et al. (2016) emphasized that by analyzing learner paths, educators can identify common struggles and adjust the course design to ensure smoother progression. The study mentioned that some studies have shown learners often struggle with the initial sections of MOOCs, with high dropout rates during early weeks. Stuart *et al.* (2018) reported that learning analytics can offer insights into which elements of a course are most or least effective. For instance, understanding which activities lead to higher engagement can guide the creation of future content and better course structures. As per Anderson *et al.* (2014), learning analytics has been widely applied in smaller, more controlled learning environments; scaling these methods to the large, open nature of MOOCs presents practical difficulties. Tools that work in small classes may not scale effectively to accommodate hundreds of thousands of learners. Liyanagunawardena *et al.* (2013) reported that learning analytics can help identify students who are at risk of dropping out, and effective intervention strategies and personalized interaction need to be given to them. Jivet *et al.* (2017), emphasized that AI can enhance the capabilities of learning analytics by automating data analysis, providing real-time feedback, and offering predictive insights about learner behavior. On social and collaborative learning in MOOCs, Hernandez *et al.* (2020) emphasized that social interactions, discussions, and group activities are crucial components that are often neglected in traditional analytics. In the global learner context, Zhu *et al.* (2019), reported that learning analytics needs to incorporate context-sensitive variables, such as cultural background and geographical differences, to provide a more holistic understanding of learner experiences.

A study conducted in BRICS countries Christensen *et al.* (2013) indicated that MOOCs are popular among well-educated individuals but not reaching high numbers of less educated individuals in developing countries. The highest percentage of respondents (27%) was between ages 21 and 29. The highest percentage of respondents (54%) has at least a bachelor's degree. Bali (2013) lists five reasons for the use of MOOCs by teachers for their professional development, such as observing others teaching online, joining communities that interest them, e-live the student experience online, new learning in a structured way, and to find well-defined resources on a topic or sub-topic. Albelbisi (2019), carried out a study on the role of quality factors in supporting self-regulated learning (SRL) skills in MOOC environment. The study revealed that the service quality factor influences self-regulated learning positively in MOOCs. The findings also revealed that designing and developing an effective MOOC environment to promote learners' self-regulated learning should be the primary task for both practitioners and researchers of MOOC settings. Singh, N. (2019) conducted a study on SWAYAM Course Coordinators (CCs) to explore their experiences on the platform. CCs found it easy to navigate from one point to another, uploading content material, organizing content into schedules, monitoring the discussion forums, developing assessment quizzes, upload-collect evaluate assignments, making announcements, and replying to learners' messages.

Sangitha, J. and Vignesh, G.A. (2020) conducted a study to check the reach of SWAYAM courses, the preferred teaching method by college students, and their satisfaction level. The study revealed that 74% of the respondents were aware of these courses and came to know through college and friends. 63% of the respondents were pursuing one or the other SWAYAM course, and 75% of them agreed that it

was helpful to them. They suggested to include industry-based examples, role-playing videos, graphical presentations, shortcuts, and mathematical formulas in the study content. Albelbisi, Al-Adwan, and Habibi (2023), reported in their study that factors influencing MOOC adoption in Malaysian higher education were opportunities, like improving the system, and challenges, such as a lack of openness features and technology infrastructure.

Garrison (2016) reported that one of the major challenges in MOOCs that directly affects the quality of the learning experience is the element of teacher presence. Better learning is possible through the support of social and cognitive presence. Baturay (2015) reported that MOOC must be open, distributed, and participatory. Teaching-learning activities in MOOC should be characterized by open access, global, free, video-based instructional content, problem sets, and forums released through an online platform to a high volume of participants aiming to take a course or to be educated. With time and place flexibility, MOOCs gather scholars and learners around the world (p. 532). Cagiltay *et al.* (2020) suggested that MOOCs' high dropout rates or predominantly elite participation are important problems. To develop solutions for these problems, a deeper understanding of MOOCs is required. Today, despite the availability of several research studies about MOOCs, there is a shortage of in-depth research on course characteristics, learner characteristics, and predictors of certification rates (p. 121). Gamage *et al.* (2020) reported that Coursera, edX, Open Learning, and Iversity are high in learner-system interactivity and learner-content interactivity but, but learner-learner interactions and learner-instructor interactions are significantly lacking.

Ostaszewski and Cleveland-Innes (2022) said that the successful MOOCs align elements of the four pillars of education practice, i.e., pedagogy, attributes of learners, goals, and learner engagement (PAGE). Pursel *et al.* (2016) reported that learners' engagement in learning through MOOCs is composed of three elements: dialogue, structure, and learner autonomy. These elements are closely related to the actors of complex interactions during student engagement, such as the learner, instructor, content, and interface. Zhang *et al.* (2019) reported learner success increases when the MOOC provides experiences that add to students' current academic backgrounds and when MOOCs are hosted by institutions with a strong academic reputation. On evaluating MOOCs long-term impact, Perryman (2020), quoted from Mishra and Panda (2020), highlighted the following issues: impact of the course on participants' attitudes and behaviour in diverse contexts, and impact of the course on stakeholders other than the participants pursuing the course.

Need and Importance of the Study

Democratizing education is one of the goals of education in a globalized society. Students have the right to get quality education in terms of receiving quality instruction and materials. The emergence of alternative media like ODL, Blended, and Online system of education adheres to the concept of democratizing education. India is a huge country with a vast network of higher education systems. Apart from its largeness, many learners living in different geographical extreme situations are deprived of getting the right education at right time. Emergence of Online education in the form of MOOCs is

a boon for that group of learners to get quality education at their doorstep. Govt of India has come out with an online education platform in the name of SWAYAM, operating since 2017, for providing free online education to the aspirant learners. Millions of students are presently pursuing MOOCs under the SWAYAM platform. Assessment for Learning is a MOOC of four credits offered through SWAYAM since the July 2021 session. This course is a part of IGNOU ODL B.Ed. programme studied in the second year of the programme. This is a 4-credit course. A good number of learners have been enrolling in this course in every session since July 2021.

In the present study, an attempt has been made to analyze the learning analytics of the course Assessment for Learning in terms of the design of the course, its components, engagement of learners in learning, in view of watching the video lessons, reading text-based e-content, participating in the discussion forum, and attempting assessment components, both continuous and terminal, for the certification. Studying the learning analytics of the course may help the course coordinator, researchers, learners, and other stakeholders to understand the strengths and weaknesses of the course and accordingly to take necessary actions for providing better learning supports to the learners.

In view of the above, the present study, *“Learning Analytics of a MOOC under SWAYAM: A Case of a Teacher Education Course on ‘Assessment for Learning’”* has its need and justification.

Research Questions

The following research questions arise in the mind of the researcher on the study mentioned above, which has been further investigated:

1. What is the profile of the learners who pursued the course?
2. How do the learners perceive the overall design of the course?
3. What is the reaction of the learners and how did they engage themselves in pursuing the course, its different components such as e-tutorials, e-content, discussion forum, and assessment?
4. How do the learners engage in active and authentic learning in the course?
5. What is the rate of success in the course?

Objectives of the Study

Keeping in mind the research questions stated above, the objectives of the study are as follows:

1. To analyse the profile of the learners in terms of gender, qualification, experience, habitation, age, etc., who pursued the course.
2. To study learners’ perception of the design of the course.
3. To analyze learners’ reactions and feedback in different components of the course, such as e-tutorials, e-content, discussion forum, and assessment.

4. To analyze the nature of learning engagement of the learners in pursuing the course.
5. To analyze the rate of success in the course in its subsequent iterations.

Delimitation of the Study

The study is delimited to a group of learners who pursued the course selected purposively through an online survey.

Operational Definitions of the Terms Used

Learning Analytics: The term learning analytics used in the study implies the nature of learning engagement of the learners in terms of watching tutorial lessons, reading text-based e-content, attempting quiz questions as assessment, participating in discussion forum and overall engagement of learners in achieving learning outcomes of the course.

MOOC: MOOC is also known as the Massive Open Online Courses. A MOOC is an online course aimed at unlimited participation and open access via the web. In the present study, an analysis has been made on a MOOC i.e. ‘Assessment for Learning’ under the SWAYAM platform.

Assessment for Learning: Assessment for Learning is a four-credit core course included in the second year of IGNOU ODL B.Ed. programme. This course has also been offered online as a MOOC under the SWAYAM platform for students. A credit transfer facility is also available in this course.

SWAYAM: SWAYAM is named as “Study Webs of Active Learning for Young Aspiring Minds”. SWAYAM is the online learning platform of India. Huge numbers of MOOCs are developed under SWAYAM for the benefit of the learners at no cost from 2017 onwards. Courses under SWAYAM are designed in a four-component approach, namely E-Tutorials, E-Content, Discussion Forum, and Assessment.

Research Methodology

The descriptive survey method has been used to conduct the study. Data has been collected from the students who pursued the MOOC ‘Assessment for Learning’ by using a *mixed form of questionnaire* through Google Form. Both quantitative and qualitative data have been received to conduct the study. All the learners enrolled in the MOOC, ‘Assessment for Learning,’ in different sessions from 2021 to 2023 constitute the *population of the study*. The *purposive sampling technique* has been used to select the sample from the population to conduct the study. 161 students who filled the Google Form questionnaire constitute the sample of the study. *Descriptive statistical techniques* such as frequency, percentage, and average scores have been used to analyze the data, along with qualitative data through description, critical analysis, and discussion. Data have been analyzed by using both quantitative and qualitative methods.

Analysis and Interpretation of Data

As mentioned above, the data has been analyzed by using both quantitative and qualitative techniques. Data has been presented by using suitable tables, figures, descriptions, and interpretations. Simple descriptive statistics such as frequencies, percentages, and average scores are used to analyze and interpret the quantitative data, whereas detailed descriptions are used to analyze the qualitative data. Data have been organized properly as per the objectives/research questions before analyzing them.

Findings of the Study

The findings of the study, deduced from the data analysis and interpretation based on the research objectives, are as follows:

Profile of the Learners

A total of 161 learners participated in the online survey and responded to the Google Form questionnaires. Among them, 75.6% were female, and 24.4% were male. Around 80% of learners were in the age group of 21 to 40, while 15.7% were in the age group of 41 to 50. This indicates that the course attracted predominantly young and middle-aged adult learners. Figure 6 shows the percentage of male and female students and the age group of the students who enrolled in SWAYAM. A clear age distribution of learners pursuing the course ‘Assessment for Learning’ is given in Fig. 7.

In addition to this, 61% of learners who participated in the survey were from a rural background, while 39% were from an urban background, reflecting the course’s reach to geographically diverse learners. Around 90% of students were either Graduates or post-graduates, while 16.9% had a Ph.D. or M.Phil. degree, suggesting a predominantly well-educated learner base consistent with global MOOC trends.

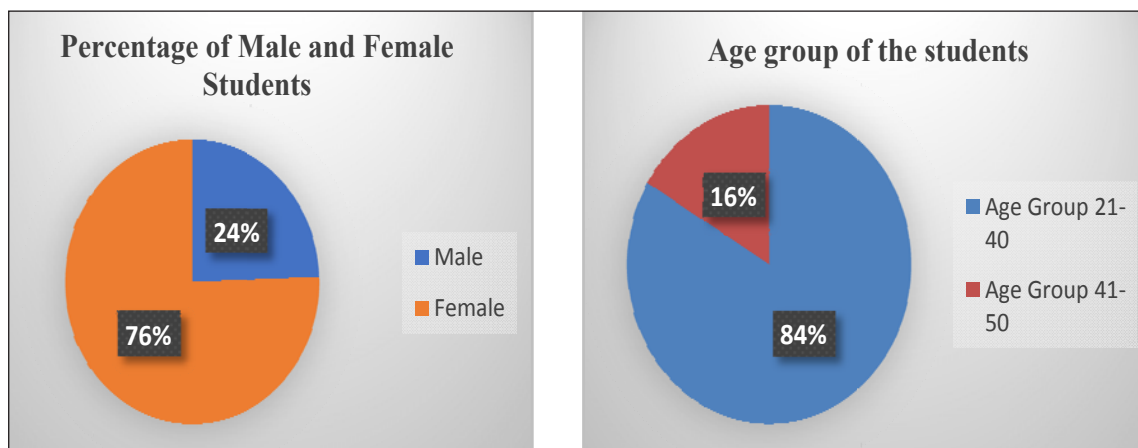


Fig. 6: Percentage of male and female students and the age group of the students enrolled

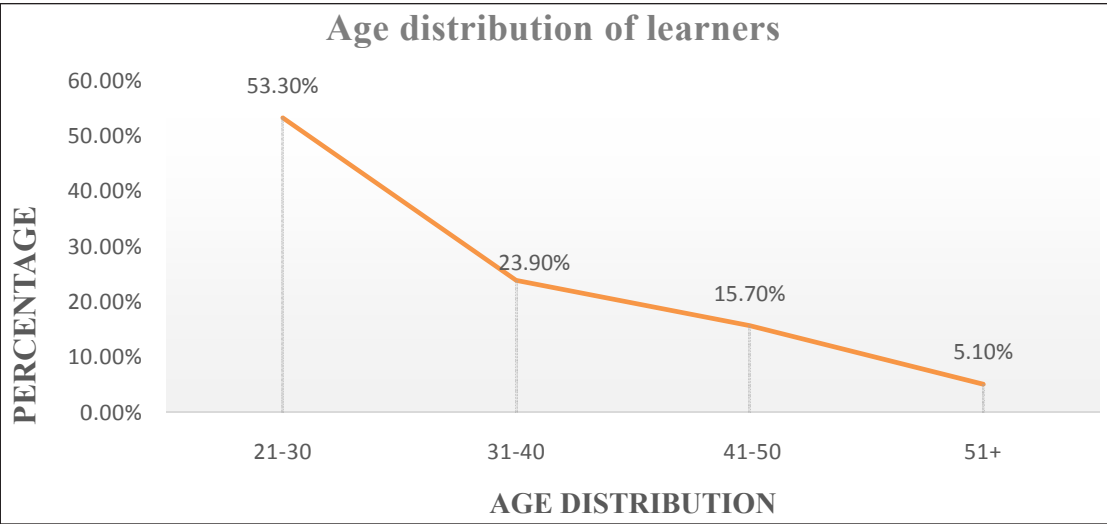


Fig. 7: Age distribution of learners enrolled in the course

A clear distribution of gender and age is given in Table 1. It highlights the learners’ profiles on the basis of their gender, age group, habitation, and qualification.

Table 1: Learner Profile - Gender and Age Distribution

Category	Sub-category	Percentage (%)
Gender	Female	75.6
Gender	Male	24.4
Age Group	21–40 years	80.0
Age Group	41–50 years	15.7
Habitation	Rural	61.0
Habitation	Urban	39.0
Qualification	Graduate/Post Graduate	90.0
Qualification	Ph.D./M.Phil.	16.9

Among the participants, 42.5% were working, and 57.5% were not currently working. Around 77% of students who pursued the online course were teaching faculty in schools or colleges; 48% were teaching in schools, 9% at the university level, and around 12% were self-employed. Around 67.9% of students were currently engaged in other studies, while 32.1% were not formally pursuing any academic programme. Students came from across disciplines, with the majority 48.1% from Education or Teacher Education.

Students who participated in the survey had enrolled in three different sessions: July 2021, January 2022, and July 2022. Most participants (71.4%) were from the July 2022 session, indicating a growing trend of enrolment in recent iterations.

Motivation for Enrolling in the Course

It was found that around 71.1% of students pursued the online course to gain knowledge, 48.4% for certification, and 44% were self-motivated. 29.6% replied that they enrolled to access quality content and learning from national-level experts. Around 22.6% pursued the course to access quality video lessons, while 15.1% were suggested by their institutions. Around 13.8% students enrolled as part of current online learning trends, and 7.5% for credit transfer purposes. Fig. 8 further presents a clear explanation of learners' motivation for enrolling in the course. The figure highlights various factors that influenced learners to join the course, reflecting their academic, professional, and personal interests in online learning.

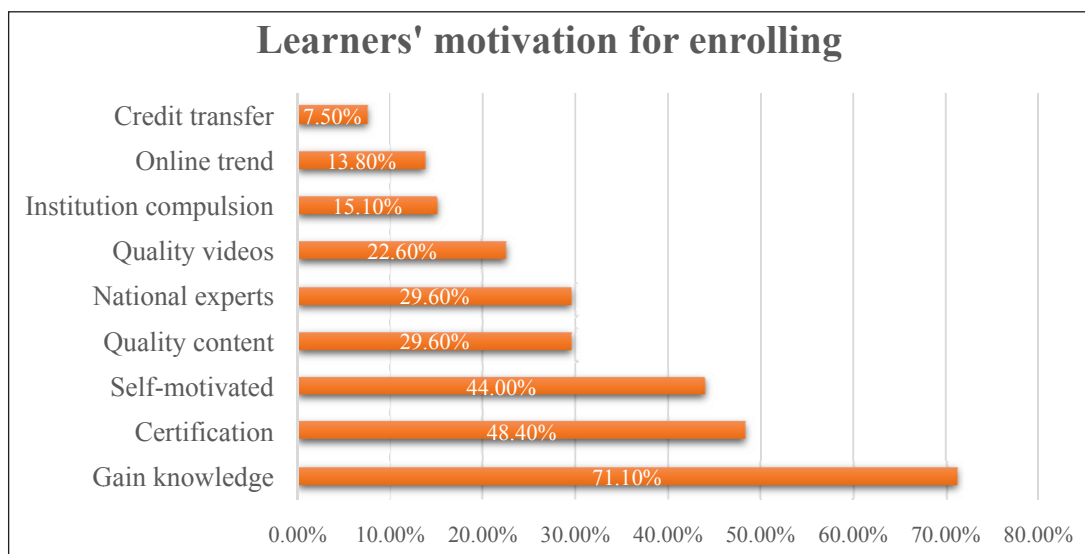


Fig. 8: Learners' motivation for enrolling in the course

Learners' Engagement with E-Tutorials (Video Lessons)

77.2% of students completed watching the video lessons provided in different modules of the course. Regarding the e-tutorial aspect, students reported that: proper explanation was done in the video (58.6%); videos were based on learning outcomes (51.7%); language of presentation was easy and understandable (37.2%); assessment questions were included in the videos (29.7%); and videos were interesting (29%). Additional positive aspects were noted including adequate length of videos, alignment with e-text, proper activities and illustrations, and suitable recapitulation.

Learners' perception of the e-tutorial is presented in Fig. 9. The figure illustrates learners' views and opinions regarding the usefulness, accessibility, and effectiveness of the e-tutorial in supporting their learning experience.

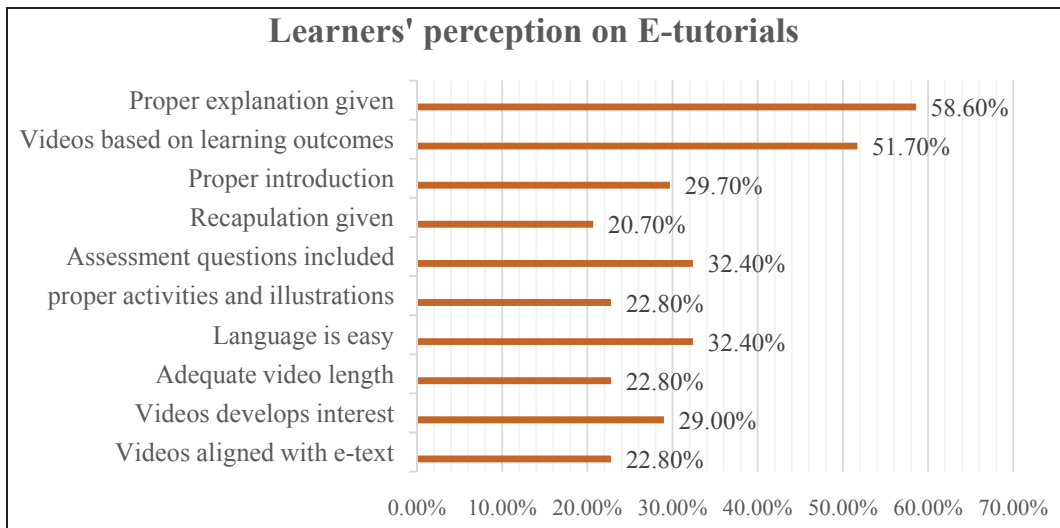


Fig. 9: Learners' perception on E-tutorials

Fig. 10 shows that most learners preferred video lessons of 5–10 minutes duration (33.6%), followed by 10–15 minutes (20.4%) and 15–20 minutes (16.4%). Very few learners preferred videos longer than 30 minutes (3.9%), indicating a greater preference for short video lessons.

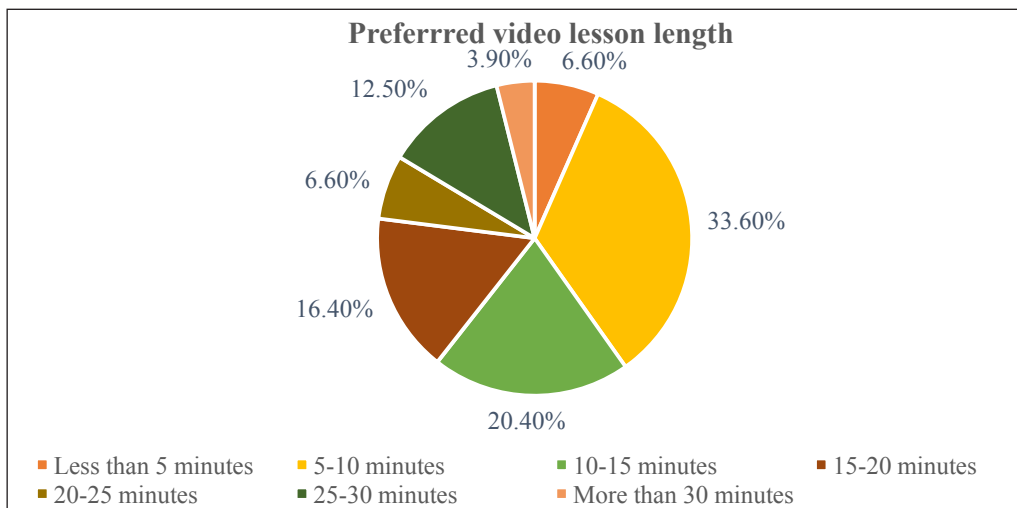


Fig. 10: Preferred video lesson length among the users

Suggestions from the learners regarding the video lessons were as follows:

- ☐ The videos should be in both languages (English and Hindi)

- ☐ More number of experts should be used to develop the videos.
- ☐ A proper transcription should be prepared for every video.
- ☐ Videos should be available to the students in offline mode.
- ☐ More number of video lessons should be given.
- ☐ Self-assessment questions should be given within the videos.
- ☐ Videos can be made more interactive and visually catchy.
- ☐ Real-life examples and illustrations can be provided.
- ☐ Slides should not be overcrowded.

Learners' Engagement with E-Content

A large majority of learners (88.4%) engaged with and read the e-content, while only 11.6% were non-readers. This indicates a high level of learner participation and interest in the e-content provided in the course. Fig. 11 highlights the learners' e-content engagement in the course.

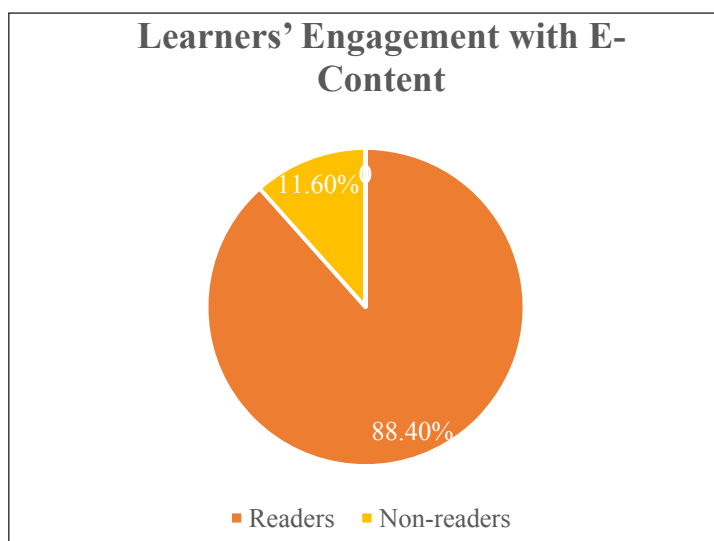


Fig. 11: Learners' engagement in the e-content

Students reported that the e-content was easy to understand (58.2%), self-explanatory (46.2%), interactive (40.5%), in easy language (39.9%), addressing major concepts (34.2%), self-paced (28.5%), designed as per learning outcomes (27.2%), interesting (20.3%), and adequate in length (18.4%). Fig. 12 provides a clear picture of learners' perception of e-content. It reflects learners' opinions and experiences regarding the usefulness, accessibility, and effectiveness of the e-content in supporting their learning process.

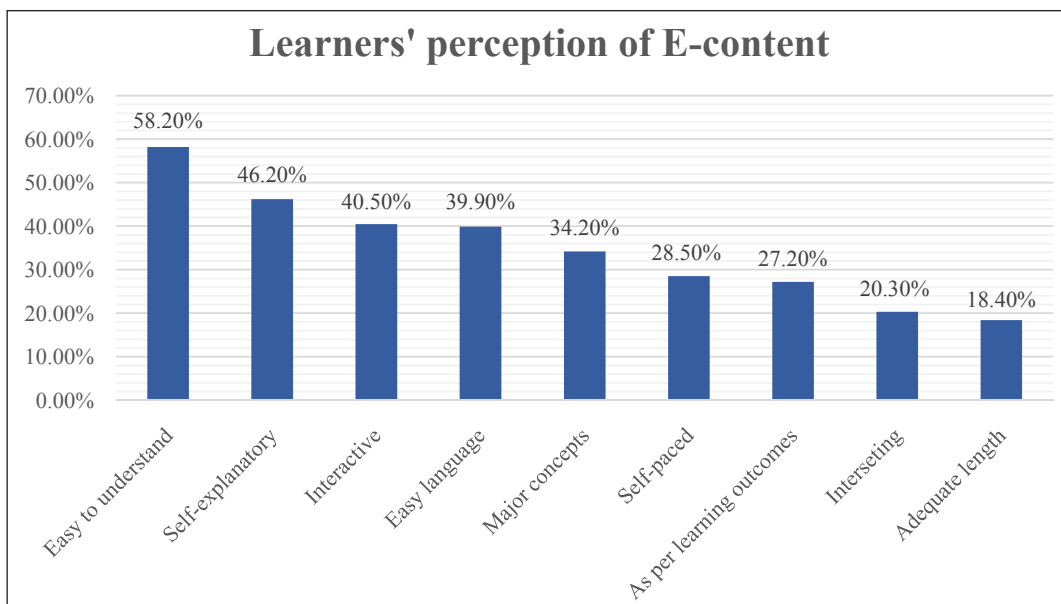


Fig. 12: Learners' perception of E-content

Suggestions from learners regarding e-content:

- ☐ Some modules are very lengthy, it should be reduced.
- ☐ Should include more tables and some mind maps for quick revision.
- ☐ To provide notes in easy language.
- ☐ More chances to attempt the quiz questions.
- ☐ Content should be explained through examples.
- ☐ Some of them are very lengthy, it can be made precise.
- ☐ It should be presented on time according to the schedule.
- ☐ More Pictures and graphs should be used in the e-text.
- ☐ It is sometimes needed to just read the e-text rather than watch the videos.
- ☐ Need to explain some complex content easily.
- ☐ To give assignments regarding the particular topic.
- ☐ Assess the quiz immediately.
- ☐ Providing brief answers would be easy to learn, and the e-text can be arranged attractively.
- ☐ More real-time examples can be added.

- WhatsApp communication should be used in the future for easy interaction.
- Extra assignment can be provided for learning support.

Learners' Engagement with Assessment

A large majority of learners (89.5%) attempted all quizzes, while only 10.5% did not attempt all quizzes. This reflects a high level of learner involvement and active participation in the course-based assessment activities. Fig. 13 clearly explains the learners' quiz participation status.

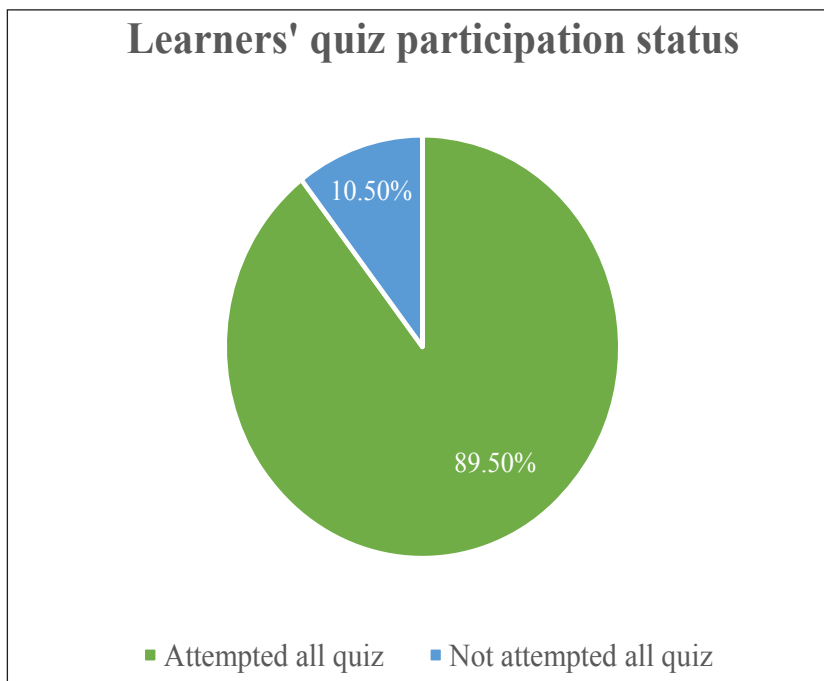


Fig. 13: Learners' quiz participation status.

Regarding the assessment component, 66.2% of learners said that assessment was for self-development; 42.1% replied that continuous assessment was aligned with learning outcomes; 38.6% stated that assessment covered all areas of learning abilities (cognitive, affective, and psychomotor); 36.6% noted that question lengths were appropriate; 21% replied that the weightage of both continuous and terminal assessments was adequate; and 24.1% reacted that the pen-and-paper test conducted by the National Testing Agency (NTA) assessed all learner abilities.

Fig. 14 presents learners' perceptions of assessment. The figure highlights learners' views regarding the effectiveness, fairness, and usefulness of the assessment activities conducted in the course.

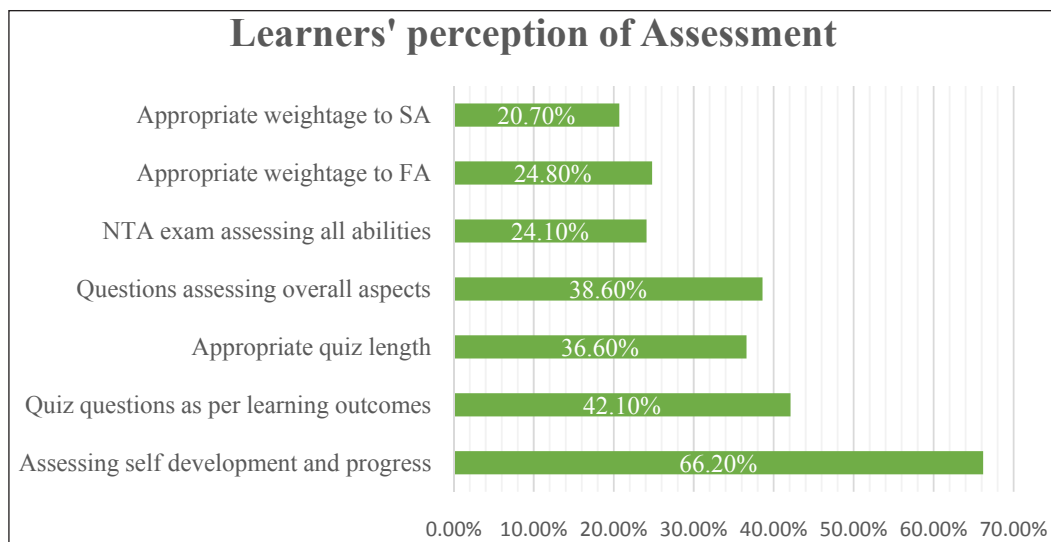


Fig. 14: Learners' perception of Assessment

Students' feedback on assessment:

- ☐ Assessment questions should be unique and creative.
- ☐ Assessment questions were as per the e-text and video lessons.
- ☐ Assessment should be free of cost.
- ☐ Remote students were facing difficulties in attempting the quiz questions and submitting them online.
- ☐ Peer and group assessment strategy should be incorporated.
- ☐ Self-assessment strategy should be implemented.
- ☐ Practice questions should be included.
- ☐ Weightage for continuous and terminal assessment should be 50% each.
- ☐ Extra time should be given to do the assignment.

Learners' Engagement with Discussion Forum

A majority of learners (60.1%) participated in the discussion forum, whereas 39.9% did not participate. This reflects active learner involvement in discussion-based interactions and collaborative learning during the course. Fig. 15 presents learners' participation status in the discussion forum.

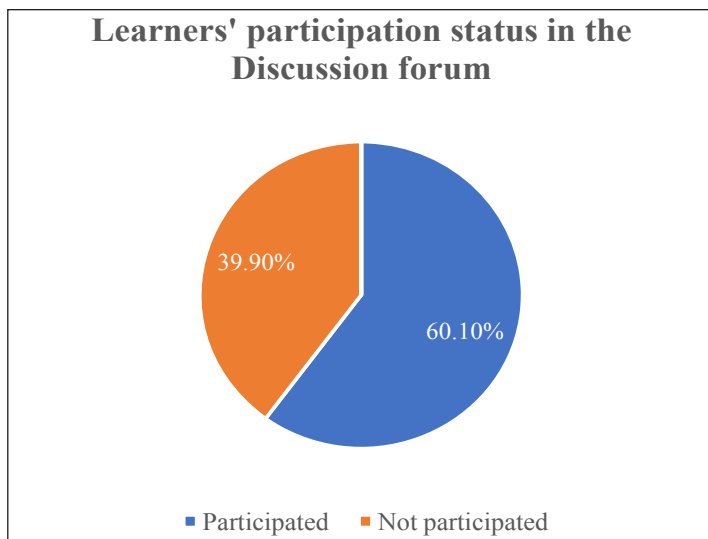


Fig. 15: Learners' participation status in the Discussion forum

Among participants, 64% used the discussion forum for clarifying doubts; 36% noted that peer and group interaction enhanced learning; 34.5% found it well-connected with e-text and e-tutorials; 32.4% said only course-related information was shared; 21.6% found individual interactions possible; and 20.9% stated that sought information was received through the forum. Fig. 16 shows learners' perception of the discussion forum. The discussion forum served as an important interactive platform that encouraged communication, peer learning, and academic support among the learners.

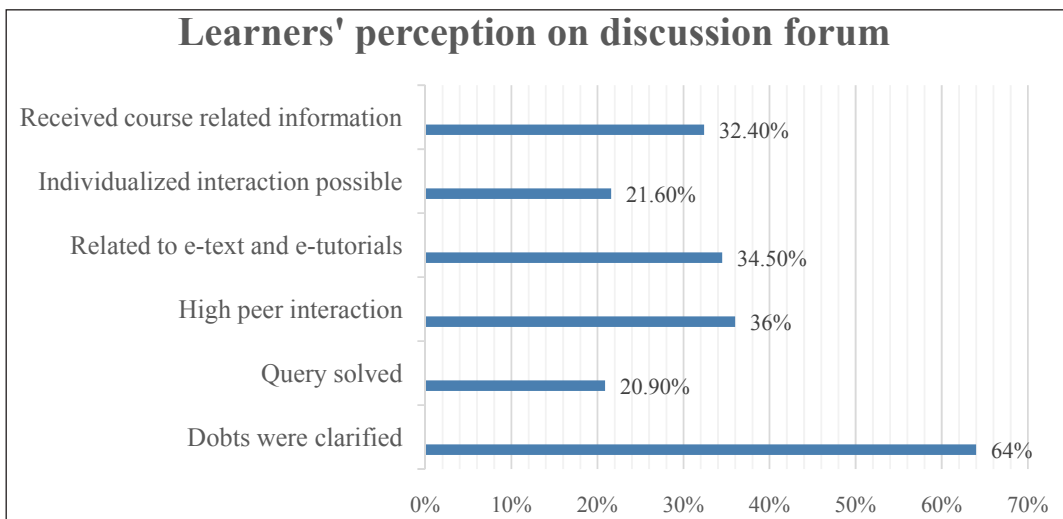


Fig. 16: Learners' perception on discussion forum

Suggestions for improving the discussion forum:

- ☐ Every student had received an opportunity to participate in the discussion forum by asking a question.
- ☐ Answer to the question should be given promptly.
- ☐ Chat and direct video calling should be used.
- ☐ Every query made should be answered.
- ☐ Doubts were clarified very quickly.
- ☐ Immediate response should be given.
- ☐ Sharing ideas through the discussion forum was impressive.
- ☐ It was an easy way to communicate with course coordinators and all learners as well.
- ☐ Interaction should be regular.

Course Completion and Learning Patterns

64.7% of students replied that they completed the course, while 35.3% did not complete it. Reasons for non-completion of the course were: personal problems (38.3%), paucity of time due to study engagement (36.7%), paucity of time due to work engagement (31.7%), and lack of proper guidance (16.7%), shown in Fig. 17.

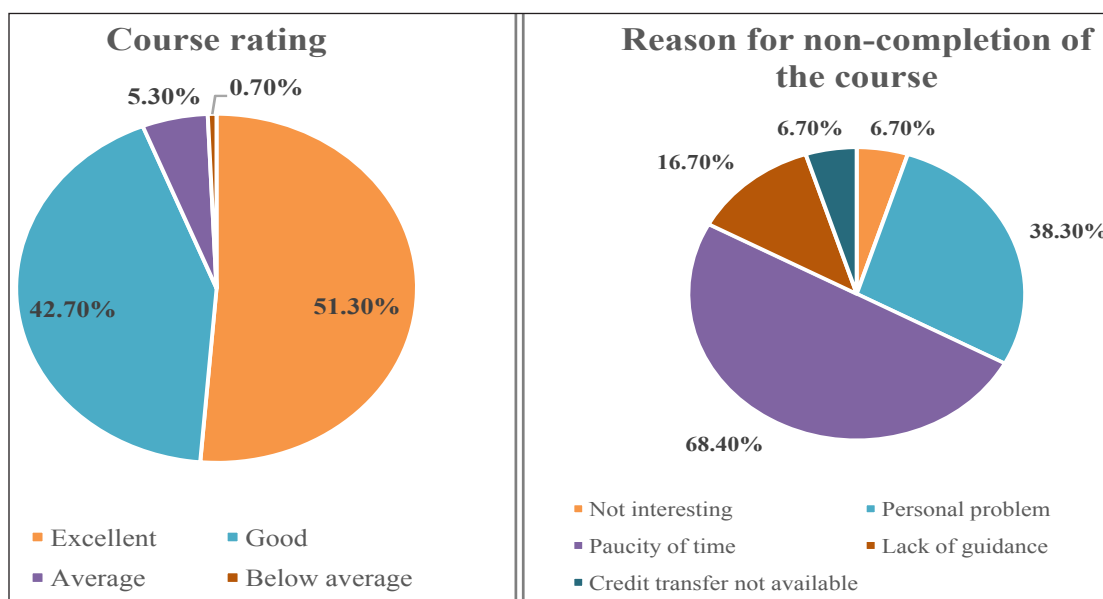


Fig. 17: Course rating and reason for non-completion of the course

The course rating reflects learners' overall satisfaction with the course. A majority of learners rated the course as "Excellent" and "Good," indicating a positive learning experience and high acceptance of the course content, structure, and delivery methods. Only a small proportion of learners rated the course as "Average" or "Below Average," suggesting that most participants found the course useful, engaging, and beneficial for their learning needs. Overall, the findings highlight the effectiveness and quality of the course in meeting learners' expectations.

Reasons for non-completion of the course highlight the major challenges faced by learners in completing the course successfully. The most common reason for non-completion was paucity of time, indicating that learners experienced difficulty in managing their course activities along with personal or professional responsibilities. Personal problems also emerged as a significant factor affecting course completion. Some learners reported a lack of guidance and limited interest in the course as reasons for discontinuation, while a few learners indicated the non-availability of credit transfer facilities as a contributing factor. The findings suggest that both personal and academic factors influence learners' continuity and successful completion of online courses.

Relating to learning style, 52% of students engaged in studies whenever they found time, 36.2% established regular study habits, and 34.9% preferred to study at night. Studying after completing primary study responsibility at the institute where they are presently studying (25.7%); completing one module at a stretch (15.1%); first watched the video lessons before reading the e-text (14.5%); reading SLM first before watching the video lessons (12.5%); only watched the video lessons (11.8%); attended module-wise quiz questions without going through the SLM and Video lessons (9.2%); prefer to read only the complete SLM (8.6%); and not constituted a regular study habit (7.2%).

Regarding time taken to complete the course, 53.3% students took 16 weeks (around four months) whereas 14.7% students took more than 16 weeks for the course completion. Around 30% students took 8 to 4 weeks to complete the course.

96.7% students responded that the course content was adequate. Among the few who found it inadequate, 54.1% felt the e-text was too lengthy, 29.7% felt assessment strategies were lengthy, 24.3% found too many video lessons, and 21.6% found video lessons lengthy. 97.4% considered week-wise content loading adequate. However, 51.5% replied that the weekly content load was more than needed, 42.4% noted unequal content distribution across modules, and 36.4% noted unequal distribution of content difficulty.

Relating to the time length of the videos, 54% students liked to watch the videos between 5 and 15 minutes, whereas 6.6% students liked to watch the videos for less than 5 minutes. 16.4% students replied to like to watch videos of length 15 to 20 minutes. The rest of the 20% students liked to watch the videos of a length of more than 20 minutes.

Around 82.2% of students said that the online course was at par with the face-to-face courses, while 17.8% disagreed. About 94% of students rated the course as either excellent or good in terms of overall quality.

Enrollment and Success Rate Analysis

There was a continuous increase in enrollment across the three iterations. An increase of approximately 94.40% in enrollment was registered from the July 2021 session to the July 2022 session, and 71.60% from July 2021 to January 2022. However, certification rates remained low: 1.42% in July 2021, 1.66% in January 2022, and 7.09% in July 2022. While the pass-out percentage is increasing, it remains critically low compared to the total enrollment in each session.

Learner Engagement-Summary

A consolidated view of learner engagement across the four course components is presented below. E-content reading and quiz attempts were the highest engagement areas, while discussion forum participation remained lower than other components. Fig. 18 gives a clear picture of learners' engagement across various course components of SWAYAM.

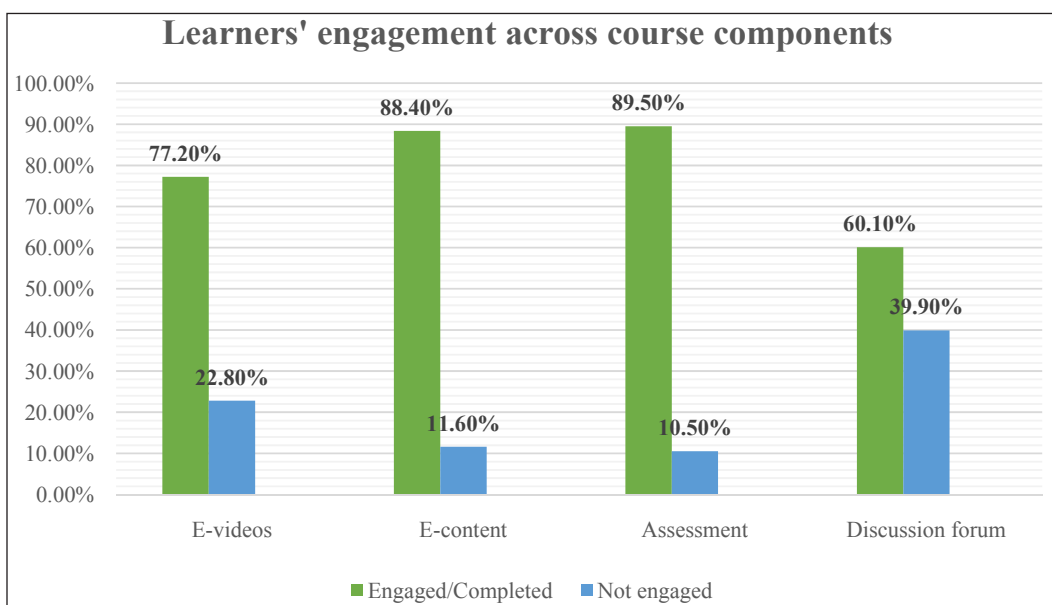


Fig. 18: Learners' engagement across various course components of SWAYAM

Findings of the Study

1. The findings deduced from the data analysis and interpretation are as follows:
2. 161 learners participated in the online survey: 75.6% female and 24.4% male.
3. Around 80% of learners were in the age group of 21 to 40, and 15.7% were in the 41 to 50 age group.

4. 61% of learners were from rural backgrounds and 39% from urban backgrounds.
5. Around 90% of students were Graduates or Post Graduates; 16.9% held a Ph.D. or M.Phil. degree.
6. 42.5% of students were working and 57.5% were not currently working.
7. Around 77% of students were teaching faculty in schools or colleges; 9% were at the university level and 12% were self-employed.
8. Around 67.9% of students were engaged in studies; 32.1% were not formally pursuing any academic programme.
9. 48.1% of students were from Education or Teacher Education disciplines.
10. 71.4% of participants were from the July 2022 session, indicating increasing enrolment.
11. 71.1% enrolled for knowledge acquisition, 48.4% for certification, and 44% were self-motivated.
12. Around 45% liked the e-text most among all course components; 18.1% liked video tutorials; 25.6% liked quiz questions; and 11.3% liked the discussion forum.
13. 88.4% completed reading e-content, and 77.2% completed watching video lessons.
14. 89.5% of students attempted the module-wise quiz questions as part of continuous assessment.
15. 60.1% participated in the discussion forum; 39.9% did not.
16. 64.7% of students completed the course; 35.3% did not.
17. Non-completion reasons included personal problems (38.3%), study engagement (36.7%), work engagement (31.7%), and lack of guidance (16.7%).
18. 54% preferred video lessons between 5 to 15 minutes in duration.
19. Around 82.2% rated the course quality at par with face-to-face courses; ~94% rated it as excellent or good.
20. Enrollment grew by 94.40% from July 2021 to July 2022.

DISCUSSION

The findings of the study revealed several important patterns about the nature of MOOC learners, their engagement, and challenges in the MOOC ecosystem. The learner profile aligns with existing literature, indicating that MOOC users tend to be well-educated individuals (Christensen *et al.* 2012). The predominance of female learners (75.6%) reflects the IGNOU B.Ed programme demographics, whereas the majority of the students are women who are pursuing their teaching careers. The high proportion of rural learners (61%) shows relevance in bridging the digital divide as a key goal of the platform, as per the SWAYAM guidelines 2023.

Regarding learner motivation, the dominance of knowledge gain (71.1%) over certification (48.4%) suggests that intrinsic motivation is the main factor driving enrollment in this MOOC. This is consistent with findings by Bali (2013), who noted that professional development and structured learning are prime reasons for teacher engagement with MOOCs. The relatively lower focus on credit transfer 7.5% indicates that the credit transfer policy has not yet become a major enrollment reason for this course.

The course components demonstrate different levels of engagement. E-content completion was the highest at 88.4%, followed by the quiz attempts at 89.5%, video completion with 77.2%, and discussion forum participation, slightly lower than other components, i.e., 60.1%. The low engagement with the discussion forum is consistent with Gamage *et al.* (2020), who reported that learner-learner and learner-instructor interactions are significantly low in MOOC platforms. The non- functionality reported by 26.3% of non-participants and the lack of awareness by 31.6% indicates issues in the discussion forum that need urgent attention

The overall high-quality rating, nearly 94% rated as excellent or good, is a positive indicator of course design and delivery. However, the critically low certification rate of only 7.09% in July 2022 represents a major concern with the MOOC challenge of massive dropout and low completion rates. The gap between enrollment growing at 94% and certification starting at 1.42% suggest structural barriers to completion, including personal and time constraints, lack of guidance, and inadequate learner support mechanisms.

The distribution challenges highlighted by learners are unequal content length across modules, overcrowded slides, and overly lengthy e-texts that need to draw more careful instructional design. The need for bilingual content, offline access to videos, and peer assessment strategies reflects the diverse learning contexts of SWAYAM learners.

CONCLUSION

The study presents a comprehensive learning analytics of the MOOC “Assessment for learning” under SWAYAM, focusing on learning profile, course design, engagement, and certification outcomes across 3 sessions from July 2021 to July 2022. The findings confirm that the course has successfully attracted a diverse, predominantly rural, and female learner base from teaching backgrounds and has received a strong overall quality rating from the learners enrolled in the course.

However, the study also highlights some critical challenges. Despite the continuous enrollment growth, the certification rates remained low, a reflection of the broader systemic challenge of MOOCs. The gap between enrollment and certification calls for immediate attention to personalised guidance, accessible offline content, focus on multilingual resources, an interactive discussion forum, and learner support mechanisms.

In conclusion, the pass-out percentage in the selected MOOC was increasing very slowly and remained very low in comparison to enrollment across different sessions. Sustained efforts in improving the

discussion forum functionality, course redesign, credit transfer policies, and learner engagement strategies are essential to realise the potential of MOOCs under SWAYAM for learners across India.

RECOMMENDATIONS

- Video lessons should be made available in both English and Hindi, with proper transcriptions, to serve India's linguistically diverse learner base.
- Offline access to video lessons should be enabled to support learners in low-bandwidth or remote areas.
- Discussion forums should be regularly monitored, with prompt responses to learner queries, and supplemented by live sessions, webinars, or virtual office hours.
- Instructional designers should ensure equitable distribution of content length and difficulty across modules.
- Peer assessment and self-assessment strategies should be integrated into the course design to promote active and authentic learning.
- Proactive outreach and orientation sessions should be conducted at the start of each session to reduce dropout rates.
- Credit transfer policies should be widely publicized to motivate learners to complete and appear for the terminal examination.
- Personalized learning support, including AI-assisted interventions for at-risk learners, should be explored to improve certification rates.
- Regular evaluation studies of MOOC quality and learner satisfaction should be institutionalized to enable continuous improvement of courses on the SWAYAM platform.

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