



CHAPTER 5
RESULTS AND DISCUSSION

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5.1 Introduction

This chapter highlights the major findings of the study in accordance with the research objectives. It also critically evaluates these findings in relation to existing literature to evaluate their significance to the study objectives. In this chapter, the researcher discusses the results of the study in the following sections.

5.2 Results and Discussion

5.2.1 Results and Discussion related to Objective no 1

Results and discussion related to Objective no 1 was given with regards to the institutional practices towards MOOCs implementation in the higher education institutions of Assam with reference to prescribed norms of UGC.

5.2.1.1 SWAYAM coordinators' response on institutional practice towards SWAYAM MOOCs

1. It had been identified that all ten universities mentioned were actively participating and utilizing Massive Open Online Courses (MOOCs) through the SWAYAM portal. They had specific policies and guidelines for the practice of MOOC programs in their institution. The fact that these institutions had particular policies and guidelines for MOOC programs suggested that they were committed to integrating these courses into their educational framework effectively. The implementation of specific policies and guidelines demonstrated the universities' willingness to invest in upholding academic integrity, maintaining quality, and establishing clear pathways for credit transfer and recognition of MOOC-based learning (Gulati et al., 2021; Singh, 2022b).
2. The data revealed that 30% of the universities were actively involved in the development of MOOCs supported by adequate resources and institutional support. In comparison, the majority of the institutions (70%) were not involved in the development of MOOCs due to resource constraints, lack of

technological infrastructure, financial limitations, or readiness to shift pedagogically from traditional to online education (Lumadi, 2014; Kebritchi et al., 2017; Buhl et al., 2018; Anand et al., 2021).

3. The finding indicated that all ten SWAYAM coordinators were fully aware of the different SWAYAM National Coordinators.
4. The results indicated that a significant majority of students (60%) at the university had requested the adoption of SWAYAM MOOCs reflecting a strong interest in integrating these online courses into their university curriculum. Nevertheless, it was crucial to acknowledge that 40% of students had abstained from making such a request. This result may have been attributed to a deficiency in knowledge or a lack of proficiency in digital skills among the students. Several studies showed that students with similar interests were adopting SWAYAM Course (Ingle et al., 2024; Lal, 2024; Bhornya & Chaudhari, 2018; Kundu & Bej, 2020; Mohan et al., 2020).
5. The study revealed that 90% of SWAYAM coordinators were aware of the UGC Amendment 2021 related to SWAYAM MOOCs, highlighting the significant outreach and impact of the amendment within the academic community. The UGC Amendment 2021 appeared to have a special focus on ensuring that up to 40% of courses in a program could be on SWAYAM (SWAYAM, 2021). Singh (2022) and Lal and Kuar (2024) remarked that this policy could potentially revolutionize higher education in India by integrating online learning with traditional university education, thereby increasing the accessibility and flexibility of higher education.
6. It had been found that 50% of the SWAYAM coordinators showed positive views and believed that the courses available on the SWAYAM portal motivated students to enroll in such MOOC courses, which meant they appreciated the flexibility, accessibility, and affordability of SWAYAM MOOCs (Nurhudatiana & Caesarion, 2020; Hew & Cheung, 2014; Jena & Jena, 2021) whereas the other half of the SWAYAM coordinators were highly concerned about the quality of online education, lack of face-to-face interaction, self-discipline required for online learning (Zhu et al., 2020). As stated by the UGC Credit Framework for Online Learning Courses through

Study Webs of Active Learning for Young Aspiring Minds Regulations, 2021, if the SWAYAM MOOCs portal met the criteria of offering quality content, relevance, interactive elements, certification, and faculty expertise, then there was a possibility that students would be more interested and motivated to enroll in SWAYAM MOOCs (Al-Aghbari et al., 2021; Singh, 2022a).

7. The findings revealed that 20% of the responses indicated that training programs for SWAYAM course coordinators regarding designing MOOCs had been organized, suggesting a proactive approach toward enhancing the quality and effectiveness of MOOC offerings. These proficient course coordinators were likely better equipped to design attractive and pedagogically sound courses, thereby potentially enhancing students learning experiences (Margaryan et al., 2015; Buhl et al., 2018 & Singh, 2022a). Conversely, an 80% negative response highlighted the fact that the SWAYAM Coordinator had organized no such program. Upon conducting a comprehensive analysis, multiple factors that influenced the decision not to provide training for SWAYAM course organizers were identified. The SWAYAM Coordinator identified budgetary restrictions as a major obstacle to arranging training programs (Yunusa & Umar, 2018). In addition, the insufficiency of accessible resources and constraints in staffing were also cited as contributory reasons (Lal, 2024; Ambedkar, 2020; Mohan et al., 2020). Furthermore, time constraints and conflicting priorities were stated as obstacles to providing comprehensive training for SWAYAM course coordinators (Dash & Panigrahi, 2023).
8. According to the findings, 60% of the SWAYAM Coordinators had actively participated in workshops related to MOOCs, demonstrating a significant level of engagement and a willingness to enhance their knowledge and abilities in managing online courses. This active participation was crucial for the administrators to effectively coordinate the SWAYAM platform, ensuring that the MOOCs were well-designed, implemented, and aligned with educational standards (Jung and Lee, 2018 & Walji et al., 2016). However, the fact that 40% of SWAYAM administrators did not participate in such workshops indicated a gap that could potentially affect the platform's

effectiveness and the quality of education provided (Singh, 2019; Gujarati et al., 2017; Kaveri et al., 2016 & Jung and Lee, 2018).

9. The findings revealed that the majority (90%) of the SWAYAM coordinators had organized awareness programs for students regarding MOOCs, as it was essential to focus on the benefits and opportunities that MOOCs offer. MOOCs were a strong indicator of the proactive measures taken by most universities to promote online learning. These awareness programs were likely focused on educating students about the benefits and opportunities that MOOCs provide, such as flexibility in learning, access to a diverse range of courses, and the opportunity to learn from top prestigious institutions globally (Hew & Cheung, 2014; Lazarus & Suryasen, 2022).
10. According to the findings, 13.33% of instructors had received personalized guidance and advice; 13.33% of instructors had received MOOC-related books and reports covering topics such as online education, instructional design, technology integration, and other pertinent topics; 13.33% of instructors had participated in formal training sessions that specifically addressed online pedagogy; 33.33% of instructors had received hands-on demonstrations of various features, activities, or tools available within the MOOC platform, and 26.67% of instructors had not received any of the forms above of professional development or support from the SWAYAM coordinator.
11. The study revealed that 30% of teachers had received incentives for developing SWAYAM MOOCs from their university. Teachers who received incentives likely felt a greater sense of recognition for their efforts. It confirmed the importance of their contribution to the educational system, potentially boosting morale and motivation. In comparison, the remaining 70% did not. Hew and Cheung (2014), Doucet & Nawrot (2014), and Singh (2019) highlighted that the recipients of incentives were likely to experience many benefits, such as increased recognition, cash awards, and possibilities for professional growth. While they may still have been motivated by intrinsic factors such as a passion for teaching or a desire to reach a wider audience, the lack of tangible rewards could potentially lead to feelings of

being undervalued or a decrease in motivation. It was important to address that disparity in the allocation of incentives to ensure equal participation and sustained engagement from all instructors involved in SWAYAM MOOC development.

12. According to the findings, only 10% of the SWAYAM Coordinators had responded that students were provided incentives for participating in these courses. They further commented that during the Corona pandemic, when some universities provided the SWAYAM examination fee to promote the program. This form of assistance might have been viewed as a direct motivation, facilitating students ability to access and promote the courses. However, the majority (90%) of coordinators reported that no such incentives were provided. The reason for this could have been that the primary incentive for students to participate in MOOCs was the acquisition of knowledge and skills rather than tangible rewards. Universities might consider exploring various forms of incentives to encourage wider participation, especially for students who may need financial assistance (Hew & Cheung, 2014; Sammour et al., 2015; Ambadkar, 2020).
13. The finding indicated that the majority (90%) of respondents had expressed a strongly favorable response about the presence of a database for students participating in various MOOCs through the SWAYAM portal. This finding indicated the existence of a strong infrastructure that facilitated student involvement and monitoring inside the platform. This data was extremely helpful for instructors, administrators, and policymakers as it allowed them to evaluate the efficacy of courses, identify areas for improvement, and make informed decisions to enhance the overall learning experience (Brahimi and Sarirete, 2015). Nevertheless, the 10% that indicated the absence of such a database may suggest possible deficiencies in data gathering and analysis, underscoring the need for additional enhancements to optimize the platform's effectiveness in meeting the varied requirements of MOOC learners.
14. According to the findings, 80% of universities actively monitored students progress on the SWAYAM platform, reflecting a commendable dedication

to ensuring the efficacy of SWAYAM initiatives. However, 20% of universities did not engage in such monitoring, highlighting a concerning gap in support mechanisms for students utilizing the SWAYAM platform. According to Dhamdhare (2024) and Lal (2024), by monitoring students progress, universities were able to ensure the quality and relevance of the courses offered on the SWAYAM platform. They could identify different issues or challenges faced by students, assess the effectiveness of course materials and instructional methods, and make necessary adjustments to enhance the overall learning experience.

➤ According to the survey results, 30% of universities used moderator feedback, 20% of universities used peer group members' reports, 20% of universities used personal tracking from the course instructor, 20% of universities used personal tracking from the course instructor, 10% of universities used self-evaluation technique, 20% of universities used tracking through mentors, 30% of universities used tracking through SPOC, and 20% of universities used SWAYAM coordinator monitoring of student's progress who had registered on the SWAYAM platform from their university.

15. The finding demonstrated that the majority (90%) of the respondents said they received colleague support; 70% of respondents received administrator support or encouragement; 20% of respondents received additional compensation; 30% of respondents received technical support; 30% of respondents received teaching or service recognition; 20% of respondents experienced happiness and commitment; 20% of respondents helped the university grow; 30% of respondents received valuable items for annual faculty productivity reports, and 20% of respondents received financial incentives for implementing SWAYAM MOOCs. Universities implemented a diverse range of monitoring techniques to assist student learning on the SWAYAM platform actively. By combining multiple strategies, institutions were able to cater to the diverse needs of students and maximize their learning outcomes. However, it was crucial to consistently assess the

effectiveness of these methods and adapt them as needed to optimize student success (Kasch et al., 2021; Singh, 2022a).

16. The findings related to different ways of promotion adopted by the SWAYAM coordinator in higher education institutions.

- The study revealed that the majority (80%) of the SWAYAM Coordinators used personal and professional conversations; 40% of the respondents used colleagues in other geographical areas, 40% of the respondents used influencers and professional associations, and 30% of the SWAYAM Coordinators used special lectures by industry experts to promote SWAYAM MOOCs in higher education institutions.
- The study also found that the majority (80%) of the SWAYAM Coordinators used campus notice boards; 80% of the respondents organized workshops, seminars, and talk shows; 40% of the respondents used institutional magazines; 30% of the SWAYAM Coordinators used community publications; 50% of the SWAYAM Coordinators used community publications; 10% of the SWAYAM Coordinators used the homepage of universities' websites; 30% of the SWAYAM Coordinators used TVCs(Television commercial) and radio jingles produced by UGC; and 40% of the SWAYAM Coordinators used posters for promoting SWAYAM MOOCs in higher education institutions.
- 50% of the SWAYAM Coordinators used social media networks like WhatsApp, Twitter, and Facebook; 40% of the respondents asked influential individuals to share information through social networks, and 20% of the respondents used blogs and articles in related forums to promote SWAYAM MOOCs in higher education institutions.
- Furthermore, the study revealed that 60% of participating institutions had laboratories accessible to students; the majority of institutions (80%) had sufficient access to computers for the students; 70% of participating institutions had libraries accessible to students. However, only 30% of the responses indicated that fewer participating institutions had dedicated monitoring cells in place to assist students in efficiently participating and completing the MOOC courses. According to Dash

and Panigrahi (2023) and Kasch et al. (2021), these strategies collectively contributed to raising awareness, generating interest, and promoting engagement with SWAYAM MOOCs in higher education institutions. However, the results also highlighted different areas for improvement, such as the need for dedicated monitoring cells to support students in participating and completing MOOCs efficiently. Addressing these gaps could further enhance the effectiveness of SWAYAM promotion efforts and maximize student participation and success.

5.2.1.2 SWAYAM course coordinators' response on institutional practice towards SWAYAM MOOCs

1. The analysis of the data revealed that all the ten universities mentioned had been actively participating in and utilizing MOOCs through the SWAYAM portal.
2. The findings showed that 100% awareness of different SWAYAM National coordinators indicated a high level of knowledge and awareness among the SWAYAM course coordinators. It had implied that communication channels between SWAYAM National coordinators and course coordinators were robust and effective. When course coordinators were well-informed about the roles and responsibilities of national coordinators, they could efficiently communicate and request assistance when required, hence enhancing the overall performance of the SWAYAM platform (Dash & Panigrahi, 2023; Ambedkar, 2020).
3. The results showed that 85.71% of SWAYAM course coordinators had been aware of the UGC Amendment 2021 related to SWAYAM MOOCs, while 14.28% of SWAYAM course coordinators had not been aware of the UGC Amendment 2021 related to SWAYAM MOOCs. This level of awareness was crucial for ensuring that the courses met the latest educational standards and regulations, which could influence their acceptance and credit transferability (Gohain, 2020; Dhamdhare, 2024). According to Majumder and Mondal (2019) and Ambedkar (2020), all course coordinators needed to be up-to-date with such amendments and regulations, as they were

integral to maintaining the quality and relevance of MOOCs offered through SWAYAM.

4. The findings revealed that the majority of the (92.86%) SWAYAM course coordinators had received technical support; 71.43% of the respondents had received administrator support or encouragement; 85.71% of the respondents had received monetary benefit; 42.86% of the respondents had received colleague support or encouragement; and 28.57% of the SWAYAM course coordinators had received teaching or service recognition when teaching MOOCs. These findings were consistent with prior research, which indicated that SWAYAM course coordinators benefited from a supportive ecosystem that offered various forms of assistance and recognition to facilitate their work (Kanjilal & Kaul, 2016). However, there might have been opportunities to enhance support in areas where it was less prevalent, such as colleague encouragement and teaching recognition. Strengthening support mechanisms could further empower coordinators and contribute to the success and sustainability of SWAYAM MOOCs in higher education institutions (Dash & Panigrahi, 2023; Lal, 2024; Gulati et al., 2021; Hew & Cheung, 2014).
5. The result showed that all the SWAYAM course coordinators had positive views regarding MOOCs significantly impacting their teaching philosophy. The course coordinators offered a range of explanations for how they perceived MOOCs as having a revolutionary impact on their teaching practice. Many had highlighted the opportunity for lifelong learning and the ability to access expertise from diverse fields and experts globally, which had improved their effectiveness as instructors and increased the learning experience for students. Furthermore, they emphasized the advantages of interacting with a varied group of learners, which expanded their viewpoints. Furthermore, the SWAYAM course coordinators recognized the positive impact of MOOCs on their teaching abilities. This included the capacity to effectively engage and instruct a significant number of students at the same time, integrate relevant course content into their curriculum, and adopt more systematic and interactive teaching methods. These responses

demonstrated the significant impact of MOOCs on teaching philosophies, highlighting the crucial role of ongoing learning, flexibility, and the incorporation of digital resources into improving teaching methods. This finding has also been supported by previous findings by Mathai (2019), Ulrich and Nedelc (2015), Xu (2015), and Sinclair et al. (2015).

6. The result indicated that 78.57% of the SWAYAM course coordinators had actively participated in different workshops related to MOOCs, demonstrating a proactive approach to professional development and staying updated with emerging trends and practices in online education. At the same time, 21.43% of the SWAYAM course coordinators had not participated in such courses. Encouraging broader participation in workshops could have further enhanced the expertise and effectiveness of SWAYAM course coordinators in delivering quality MOOC experiences (Bordoloi et al., 2020; Bhesera & Bika, 2024; Kumar & Mahendraprabu, 2020; Rusli, 2019).
7. According to the findings, the majority of the (90%) SWAYAM course coordinators had made awareness programs for students regarding MOOCs. This high percentage indicated a strong commitment from the coordinators to educate and inform students about the benefits and opportunities provided by MOOCs (Neha & Kim, 2020; Agnihotri & Pandit, 2020).
8. The results indicated that 57.14% of the SWAYAM course coordinators had trained other MOOC instructors in regard to designing or teaching SWAYAM MOOCs. In comparison, 42.86% of the SWAYAM course coordinators had not organized such courses. The majority of coordinators who were involved in training contributed significantly to the quality and consistency of MOOCs offered on SWAYAM. The reasons why some coordinators had not organized training could have been varied. According to Sabaghpour et al. (2019), Dash and Panigrahi (2023), and Singh (2022b), it might have been due to a lack of resources, time constraints, or possibly a lack of perceived need. Understanding these barriers could have helped in formulating strategies to encourage more coordinators to participate in training activities.

9. The findings showed that 78.57% of the SWAYAM course coordinators had provided suggestions to other MOOC instructors in regard to designing SWAYAM MOOCs. In comparison, 21.43% of the SWAYAM course coordinators had not provided any suggestions.
10. The study revealed that all the SWAYAM course coordinators had actively participated in participation in different orientation programs related to SWAYAM MOOCs.
11. The findings showed that 35.71% of the SWAYAM course coordinators had received incentives for producing SWAYAM courses. In contrast, the remaining 64.28% had not.
12. The results revealed that all 14 SWAYAM Course coordinators had promoted SWAYAM MOOCs in their institution.
13. The finding revealed that 64.28% of the SWAYAM course coordinators had been motivated by Career development, 78.57% of the respondents had been motivated by commitment to open education; 71.43% of the respondents had been motivated by curiosity; 50% of the respondents had been motivated by expanding their professional network; 71.43% of the respondents had been motivated by financial incentives; 78.57% of the respondents had been motivated by curiosity about learning new technology, and 14.28% of the respondents had been motivated by passionate about the content for teaching a SWAYAM MOOCs. In broad terms, providing such incentives within SWAYAM has created a dynamic and complex environment. These motives inspired coordinators to contribute to the program's success while also pursuing their career objectives and professional growth.
14. This study revealed that 64.28% of SWAYAM course coordinators had used moderator feedback, 50% of SWAYAM course coordinators had used unit-based progress; 64.28% of universities had used personal tracking from the instructor; 50% of SWAYAM course Coordinators had used personal tracking from the course instructor; 14.28% of SWAYAM course coordinators had used weekly or daily reports offered; 14.28% of SWAYAM

course coordinators had used interaction through the course portal who had registered on the SWAYAM platform from their university.

15. According to the findings, the majority (57.14%) of the SWAYAM course coordinators had received MOOC-related book reports; 21.43% of the respondents had received an assigned advisory role from their institution; 28.57% of the respondents had received training programs in online pedagogy provided by their institution; 21.43% of the SWAYAM course coordinators had received training in technology tools for making video lectures; 35.71% of the SWAYAM course Coordinators had received informal demonstrations of the features, activities, or tools of their MOOCs to colleagues or others; 28.57% of the SWAYAM course Coordinators had provided a link to their MOOCs as an example to others, and 14.28% of the SWAYAM course Coordinators had received support through CET(Center for Education Technology) support system provided by different IITs.
16. The results revealed that all 14 SWAYAM Course coordinator Promote SWAYAM MOOCs in their institution.
 - This study revealed that all the SWAYAM course coordinators (100%) used personal and professional conversations, colleagues in other geographical areas, alumni networks, and students; 92.86% of the SWAYAM course coordinators used influencers and professional associations for promoting SWAYAM MOOCs in higher education institutions.
 - The majority (85.71%) of the SWAYAM Coordinators used posters; 57.14% of the respondents used institutional magazines; 21.43% of the respondents used campus notice boards and community publications; 14.29% of the SWAYAM course Coordinators used intranets and mailing lists; 35.71% of the SWAYAM course Coordinators used the homepage of universities' websites and 14.29% of the SWAYAM Coordinators used TVCs and radio jingles produced by UGC for promoting SWAYAM MOOCs in higher education institutions.

- The results revealed that all the SWAYAM Coordinators (100%) used social media networks like WhatsApp, Twitter, and Facebook; 40% of the respondents used influential individuals to share through social networks, and 78.57% of the respondents used promotion in online communities/forums on related subject areas for promoting SWAYAM MOOCs in higher education institutions.
17. The findings showed that 92.86% of the SWAYAM course coordinators interacted through online discussion forums; 92.86% of the respondents interacted through MOOCs platform messages; 78.57% of the respondents interacted through personal mail; 57.14% of the SWAYAM course coordinators interacted through virtual meetings and 14.29% of the SWAYAM course Coordinators interaction through social media connections (e.g., Facebook, Twitter) to encourage in their MOOCs. These various modes of interaction allowed SWAYAM course coordinators to effectively communicate and engage with students, ensuring a supportive and interactive learning environment. According to Ucha (2023) and Rahman et al. (2021), these modes of interaction facilitated active participation and collaboration between SWAYAM course coordinators and students, fostering a sense of community and facilitating the exchange of ideas.

5.2.2 Results and Discussion Related to Objective no 2

To study the attitude of students towards SWAYAM MOOCs implementation in the higher education institutions of Assam.

Major Finding

- i. The finding revealed that most of the students (41.75%) students have an extremely unfavourable attitude towards SWAYAM MOOCs.
- ii. Following this, 18.16% of students have a highly unfavourable attitude towards SWAYAM MOOCs, 21.46% of students have a below moderately unfavourable attitude towards SWAYAM MOOCs, 13.44% of students have a moderate attitude towards

SWAYAM MOOCs, 3.77% students have above moderately favourable attitude of towards SWAYAM MOOCs, 1.41% students have highly favourable attitude of towards SWAYAM MOOCs.

Discussion:

The findings of the descriptive research demonstrated that most of the students (41.75%) had an extremely unfavorable attitude toward SWAYAM MOOCs. This finding could have been due to the lack of a stable internet connection and technological devices, along with potential challenges with accessing SWAYAM courses, which were likely to cause frustration and dissatisfaction among students. Some students also stated that in rural regions of Assam, where infrastructure was weak, they had difficulty attending online courses properly. (Virani et al., 2020; Subaveerapandiyan, 2022; Zheng et al., 2015 & Perdue, 2023). Furthermore, perceived problems in the quality of course content and instructional delivery, along with inadequate awareness and promotion of SWAYAM within these institutions, may have further discouraged student engagement. Insufficient institutional support and integration, combined with variations in pedagogical preferences and learning styles, could also have impacted students attitudes toward SWAYAM negatively. However, the study also found out that about 13.44% of students had a moderate attitude towards SWAYAM MOOCs, 3.77% of students had above moderately favorable attitudes towards SWAYAM MOOCs, and 1.41% of students had a highly favorable attitude towards SWAYAM MOOCs. Some proponents of SWAYAM argued that the platform provided flexibility and accessibility to a wide range of courses, allowing students to pursue their academic interests outside of traditional classroom settings. In addition, the ability to learn at one's own pace and the opportunity to access high-quality educational content from various institutions could be seen as significant advantages of SWAYAM. (Bhesera & Bika, 2024; Jena & Jena, 2021). Overall, the attitude of students towards SWAYAM MOOCs implementation in the higher education institutions of Assam was negative (Lal, 2024).

5.2.3 Results Related to Objective no 3

i. The first hypothesis of the study there is no significant difference between the attitude of students towards the SWAYAM MOOCs with regard to gender. After using the Mann-Whitney U test, it is found that there is no significant difference between male and female student's attitudes towards the SWAYAM MOOC with regard to gender ($U=18514.000, P>.05$). The study's findings show that male and female students have similar attitudes towards SWAYAM MOOCs. The same viewpoint has also been supported by the studies of Majumder (2019), Dhamdhare et al. (2022), Ahmed (2019), Jaganathan, Sugundan, and Sivakumar (2018), Urrutia (2019), Priya & Balasubramaniam, (2023), Watted & Barak, (2014) & Aboshady et al. (2015).

The study found no significant difference in attitudes towards SWAYAM MOOCs between male and female students, indicating similar attitudes across genders. Possible factors contributing to this phenomenon include equitable availability of technology, a cohesive educational setting, pertinent and exemplary course materials, societal changes promoting gender parity, shared aspirations, and equitable institutional assistance (Priya & Balasubramaniam, 2023; Ramaiah & Kathirkamanathan, 2022). These elements establish a learning environment in which gender has no impact on attitudes towards MOOCs. This result demonstrates the presence of gender parity in higher education and underscores the capacity of MOOCs as efficient educational resources for a wide-ranging student body (Aboshady et al., 2015).

ii. The second hypothesis of the study there is no significant difference between the attitude of students towards the SWAYAM MOOCs with regard to locality. After using the Kruskal-Wallis test, it is found that there is no significant difference in students attitude scores towards SWAYAM MOOCs according to their locality [$\chi^2(2)=1.968, p>.05$]. After evaluating the mean rankings of the different categories, it is evident that urban, rural, and semi-urban students have a similar attitude toward SWAYAM MOOCs. The same viewpoint has also been supported by the studies of Urrutia (2019), Priya & Balasubramaniam (2023), Watted & Barak (2014) & Aboshady et al. (2015), Kumar & Mahendraprabu (2021) and Gopinath (2024).

The study found no significant difference in attitudes towards SWAYAM MOOCs between urban, semi-urban, and rural students indicating similar perceptions across

localities. This could be due to SWAYAM's design, which emphasizes access, equity, and quality in education, making it accessible and relevant to students regardless of their geographical location. The platform's diverse course offerings and the ability to bridge educational gaps likely contribute to its uniform acceptance. Furthermore, the increasing availability of internet connectivity across different localities may have enabled students from various backgrounds to participate and benefit from the MOOCs equally, leading to a consistent attitude towards the educational resource (Dhamdhare, 2024; Priya & Balasubramaniam, 2023; Balasubramaniam, 2023; Kundu & Bej, 2020; Ambedkar, 2020).

iii. The third hypothesis of the study there is no significant difference between the attitude of students towards the SWAYAM MOOCs with regard to the stream. After using Kruskal-Wallis test, it is found that there is no significant difference between the attitude of students towards the SWAYAM MOOCs with regard to stream [$\chi^2(2)=4.483, p>.05$]. After evaluating the mean rankings of the different categories, it is evident that humanities, commerce and science students have a similar type of attitude toward stream. The same viewpoint has also been supported by the studies of Urrutia (2019), Priya & Balasubramaniam (2023), Watted & Barak (2014), Aboshady et al. (2015), Kumar & Mahendraprabu (2021).

The study found no significant difference in attitudes towards SWAYAM MOOCs between science, commerce, and humanities students, indicating similar attitudes across streams. This uniformity in attitude could be due to SWAYAM's comprehensive curriculum that spans arts, science, commerce, and other disciplines, ensuring relevance to all fields of study. Moreover, the platform's focus on access, equity, and quality in education likely resonates with students from various streams, as it provides equal opportunities for the enhancement of knowledge and skills. The integration of technology in education through SWAYAM also bridges sociological and educational barriers, offering a consistent learning experience that aligns with the modern educational needs of students, irrespective of their academic background. (Jakob et al., 2022; Bhat, 2023; Kumar & Mahendraprabu, 2021).

5.2.4 Results and Discussion Related to Objective no 4

To find out the challenges faced by the stakeholders towards the implementation of SWAYAM MOOCs in the higher education institutions of Assam.

Major finding:

Challenges faced by the stakeholders regarding course content

- ❖ Challenges faced by the students related to course content
 - i. The finding revealed that most of the students (43.87%) believed that the lack of quality content was not a problem in the implementation of SWAYAM MOOCs, and 72.88% believed that the quality of audio used in MOOCs was good.
 - ii. Most of the students (52.60%) perceived that language barriers among learners did not face challenges in implementing SWAYAM MOOCs
 - iii. The results exhibited that most of the students (58.25%) considered that the graphics used in MOOCs were appropriate.
 - iv. The finding also revealed that 41.51% of respondents indicated that the syllabus was very vast. In comparison, 43.87% disagreed with this notion.
- ❖ Challenges faced by the SWAYAM Coordinator related to course content
 - i. The study revealed that most of the SWAYAM coordinators (70%) believed that the lack of quality content was a problem in MOOCs courses.
 - ii. The finding also shows that most of the SWAYAM coordinators (60%) considered that the quality of audio used in MOOCs was not good, and most of the SWAYAM coordinators (60%) thought that the language barrier among learners created difficulty in the implementation of SWAYAM MOOCs.
 - iii. The findings also indicate that the views of the SWAYAM coordinators were equally divided, with 50% believing that the graphics used in MOOCs were appropriate and 50% believing they were not, and 60% of respondents believed that the syllabus for SWAYAM MOOCs was not very vast.

- ❖ Challenges faced by the SWAYAM course coordinator related to course content.
 - i. The study revealed that most of the SWAYAM course Coordinators (64.28%) thought that the lack of quality content was not a problem in the implementation of SWAYAM MOOCs. In comparison, 100% of SWAYAM course coordinators consistently feel that the audio quality in MOOCs was excellent.
 - ii. The study exhibited that (100%) SWAYAM course coordinators consistently felt that the language barrier among the learners creates difficulty in the implementation of SWAYAM MOOCs. However, 71.43% of respondents find the graphics used in MOOCs courses to be appropriate, and 100% of the SWAYAM course coordinators consistently believed that the syllabus for the SWAYAM MOOCs course needed to be more comprehensive.

Discussion:

The study aimed to identify the challenges encountered by stakeholders in implementing SWAYAM MOOCs in higher education institutions in Assam. The significant finding revealed challenges related to course content, with various perspectives from SWAYAM coordinators, SWAYAM course coordinators, and students (Raheem & Ghafar, 2023; Agnihotri & Pandit, 2020; Barrot et al., 2021; Devi, 2019; Biswas & Sarkar, 2020).

SWAYAM coordinators expressed concerns about the lack of quality content, audio quality, language barriers, and the lengthy syllabus in MOOCs. The study also highlighted mixed opinions on the appropriateness of graphics used in MOOCs. In contrast, SWAYAM course coordinators had different viewpoints, with a majority expressing satisfaction with audio quality and syllabus vastness but acknowledging language barriers as a challenge. Students, on the other hand, generally did not view the lack of quality content as a significant issue, while they had positive perceptions of audio quality and graphics appropriateness. However, there were mixed opinions regarding the vastness of the syllabus, indicating differing perspectives among the student respondents.

Challenges faced by the stakeholders regarding assessment and discussion forum

- ❖ Challenges faced by the students related to assessment and discussion forum
 - The findings indicated that most of the students (53.07%) agreed that adopting an exam-centric strategy did not create challenges in the implementation of SWAYAM. In comparison, most of the students (41.27%) considered that the lack of continuous active engagement in the discussion forum created issues for the smooth functioning of SWAYAM MOOCs.
 - According to the survey results, there is a mixed perception that the absence of lab work is a significant drawback in the implementation of SWAYAM MOOCs. The findings also indicate that 41.51% of respondents viewed the lack of lab work as a substantial disadvantage. In contrast, 43.87% of respondents disagreed with this viewpoint
 - The finding also showed that most of the students (62.03%) did not face problems with credit transfer at the end of the course, and 64.86% of the respondents did not perceive that assignments created hurdles in implementing MOOCs through SWAYAM
- ❖ Challenges faced by the SWAYAM coordinator related to assessment and discussion forum.
 - i. The findings indicate that 60% of SWAYAM coordinators believed adopting an exam-centric strategy does not create challenges in the implementation of SWAYAM, while most of the students (70%) of views of the SWAYAM Coordinator believed that the lack of continuous active engagement in the discussion forum creates problems in the smooth functioning of SWAYAM MOOCs.
 - ii. According to the survey results, there is a mixed perception that the absence of lab work is a major drawback in the implementation of SWAYAM MOOCs. The findings also indicate that 50% of SWAYAM Coordinators perceived that the absence of lab work was a major drawback in the implementation of SWAYAM (MOOCs), and 50% believed it was not.

- iii. The finding also shows that the majority of SWAYAM Coordinators (60%) did not experience issues with credit transfer at the conclusion of the course, and 43.87% of the SWAYAM coordinators thought that assignments did not create hurdles in the implementation of MOOCs through SWAYAM.
- ❖ Challenges faced by the SWAYAM course coordinator related to assessment and discussion forum.
 - i. The findings indicate that 78.57% of participants viewed the exam-focused strategy as not posing challenges in the implementation of SWAYAM MOOCs. However, the majority of respondents (57.14%) did not believe that the lack of continuous active engagement in the discussion forum created problems for the smooth functioning of SWAYAM MOOCs.
 - ii. According to the survey results, there was a mixed perception that the absence of lab work is a major drawback in the implementation of SWAYAM MOOCs. The findings also indicate that 50% of respondents believed that the absence of lab work was a major drawback. Conversely, 42.85% of respondents expressed disagreement with this perspective.
 - iii. The finding also revealed that the majority of 85.71% of respondents were confident that assignments did not create obstacles in the implementation of MOOCs through SWAYAM and all the SWAYAM course coordinators (100%) in the survey had encountered difficulties related to credit transfer upon completing the course.

Discussion:

The finding explores the challenges faced by stakeholders in implementing SWAYAM MOOCs in higher education institutions in Assam, focusing on assessment and discussion forums. The findings revealed that students and SWAYAM coordinators have differing perspectives on the impact of an exam-centric strategy, with a majority of students (53.07%) believing it does not pose challenges. In comparison, 60% of coordinators share this view. However, both students (41.27%) and coordinators (70%) identify the lack of continuous active engagement in the discussion forum as a significant challenge. There is also a mixed perception regarding the absence of lab work, with a notable percentage of respondents expressing concerns. Moreover, while

most students (62.03%) do not encounter issues with credit transfer, all SWAYAM coordinators (100%) in the survey faced difficulties in this area.

Furthermore, the challenges faced by SWAYAM course coordinators are highlighted, revealing that the majority do not perceive an exam-centric strategy as a significant challenge. However, a notable percentage (57.14%) believe that the lack of continuous active engagement in the discussion forum impacts the smooth functioning of SWAYAM MOOCs. Similar to the other stakeholders, there is a mixed perception regarding the absence of laboratory work. A significant majority of respondents (85.71%) are confident that assignments do not pose obstacles in the implementation of MOOCs through SWAYAM. However, all respondents encountered difficulties related to credit transfer upon completing the course.

To summarize, the challenges identified in the implementation of SWAYAM MOOCs in Assam's higher education institutions revolve around assessment and discussion forums. (Raheem & Ghafar, 2023; Mohan et al., 2020; Kundu & Bej, 2020; Shapiro et al., 2017) While there are differing perceptions regarding the impact of an exam-centric strategy, the lack of continuous active engagement in the discussion forum emerges as a common challenge across stakeholders (French et al., 2023; Lima et al., 2019; Almatrafi & Johri, 2019). Furthermore, the absence of lab work and issues related to credit transfer are areas of concern. These findings underscore the need for targeted strategies to address these challenges and enhance the effectiveness of SWAYAM MOOCs in the higher education landscape of Assam. This finding is supported by the studies of Mondal & Majumder (2019), Sinha (2024), Mandal & Yadav (2021), Bordoloi (2020), Jagetiya (2018), Mathai (2019)

Challenges faced by the stakeholders regarding learning strategies.

Challenges faced by the students related to learning strategies

- i. The findings indicate that the majority of the students (48.11%) believed that the lack of time created an obstacle in the implementation of SWAYAM MOOCs.

- ii. The finding also showed that 47.40% of the respondents agreed that the lack of individual instruction is one of the major drawbacks in the implementation of SWAYAM MOOCs.
- The study also shows that 41.03% of students considered that lacking creativity posed challenges in implementing SWAYAM MOOCs, and 44.81% of students thought that the limited availability of resources for accessing courses created barriers to implementing SWAYAM MOOCs. However, the majority of students (50.94%) did not consider the lack of trained teachers to be a significant obstacle in the implementation of SWAYAM MOOCs.

❖ challenges faced by the SWAYAM coordinator related to learning strategies

- i. The findings indicate that the majority of the SWAYAM coordinators (60%) did not think that the lack of time created an obstacle in the implementation of SWAYAM MOOCs, and 80% of the SWAYAM coordinators did not consider that the lack of individual instruction was one of the major drawbacks in implementing SWAYAM MOOCs
- ii. The finding also showed that the majority of the SWAYAM coordinators (60%) did not agree that lack of creativity created problems in the implementation of SWAYAM MOOCs
- iii. The findings also indicate that 50% of the respondents do not think that the limited availability of resources to access courses creates barriers to the implementation of SWAYAM MOOCs.
- The result exhibited that most of the students (50%) did not feel that the lack of trained teachers was a major drawback in the implementation of SWAYAM MOOCs

❖ Challenges faced by the SWAYAM course coordinator related to learning strategies

- i. The study revealed mixed perceptions regarding the views of the SWAYAM course coordinator on the lack of time, which creates an obstacle in the

implementation of SWAYAM MOOCs. It has been found that half of the respondents (50%) believed that the lack of time was a significant obstacle in the implementation of SWAYAM MOOCs. The remaining 50% of the participants did not consider that the lack of time creates an obstacle in the implementation of SWAYAM MOOCs, while the majority of respondents (57.14%) did not perceived the lack of individual instruction as one of the major drawbacks in the implementation of SWAYAM MOOCs.

- ii. The study also showed that the majority of the respondents (64.28%) did not agree that the lack of creativity created problems in the implementation of SWAYAM MOOCs, and the majority of respondents (78.57%) did not perceive that the limited availability of resources created barriers to the implementation of SWAYAM MOOCs.
- iii. The study also revealed that the majority of SWAYAM course coordinators (57.14%) did not consider the lack of trained teachers as a major obstacle in the implementation of SWAYAM MOOCs.

Discussion:

The result presents a study on the challenges encountered by stakeholders in implementing SWAYAM MOOCs in higher education institutions in Assam. The major findings revolve around the challenges related to learning strategies for students, SWAYAM coordinators, and SWAYAM course coordinators. The study suggests that students face obstacles such as a lack of time, insufficient individual instruction, limited opportunities for creativity, and limited resources for accessing courses. However, the absence of trained teachers is not considered a significant disadvantage. However, SWAYAM coordinators and course coordinators have differing perceptions, with most not considering lack of time, individual instruction, creativity, limited resources, or trained teachers as significant obstacles in the implementation of SWAYAM MOOCs. Furthermore, the majority of respondents expressed confidence that assignments do not create hurdles, but all encountered difficulties related to credit transfer upon completing the course. Therefore, the study provides valuable insights into the challenges hindering the successful implementation of SWAYAM MOOCs in higher education institutions in Assam. The differing viewpoints of stakeholders underscore the complexity of

addressing these challenges, and the findings call for targeted strategies to overcome obstacles related to learning strategies, resource availability, and credit transfer processes. By acknowledging and addressing these challenges, higher education institutions can work towards maximizing the benefits of SWAYAM MOOCs for both students and educators, ultimately enhancing the quality of online content delivery. This result was corroborated by the findings of French et al. (2023), Lima et al. (2019), Singh & Kakkar (2023), Banwari (2018), Sharma & Sharmiladevi (2022), Sra & Chakraborty (2018), Sanzgiri(2020), Gulati et al. (2021), Liu & He (2019), Hew & Cheung (2014),

Challenges faced by the students related to the relevance of SWAYAM MOOCs

Challenges faced by the students related to the **relevance of SWAYAM MOOCs**

- i. The findings indicate that most students (54.01%) felt that due to a lack of student interest, they were not participating in SWAYAM MOOCs, while mixed perceptions regarding students views on the cost of examination fees. 41.27% of students believed that the examination fees posed a challenge to the successful implementation of SWAYAM MOOCs, while 38.21% of students did not consider examination fees to be a major issue.
- ii. The findings also indicate that a significant portion of students (46.46%) considered that insufficient prior knowledge about the topic presented a major obstacle in the implementation of SWAYAM MOOCs.
- iii. The findings indicate that most of the students (54.95%) agreed that a lack of motivation posed a challenge in implementing SWAYAM MOOCs. However, 54.48% of students perceived technical issues were a major obstacle in implementing SWAYAM MOOCs
- iv. The findings exhibited that 37.74% of students did not think that over-the-course expectations posed challenges for the implementation of SWAYAM MOOCs.

- The findings indicate that the majority of respondents (69.10%) were satisfied with how the educational administration was implementing SWAYAM MOOCs

- ❖ Challenges faced by the SWAYAM coordinator related to relevance of SWAYAM MOOCs
 - i. The findings indicate that most of the SWAYAM coordinators (60%) felt that due to a lack of student interest, they were not participating in SWAYAM MOOCs, and most of the SWAYAM coordinators (90%) believed that the cost of examination fees did not create trouble in the implementation of SWAYAM MOOCs.
 - ii. The findings also revealed that most of the SWAYAM coordinators (60%) considered that insufficient prior knowledge about the topic did not create obstacles in the implementation of SWAYAM MOOCs, while most of the SWAYAM coordinators (60%) believed that the lack of motivation created difficulty in the implementation of SWAYAM MOOCs
 - iii. The findings exhibited that most of the SWAYAM Coordinators (54.48%) perceived that technical issues did not create hurdles in the implementation of SWAYAM MOOCs
 - iv. The findings indicate that 100% of SWAYAM coordinators considered that over-the-course expectations did not create trouble for the implementation of SWAYAM.
 - v. The findings also indicated that most of the SWAYAM coordinators (80%) did not agreed that over-the-course expectations created trouble for the implementation of SWAYAM MOOCs

- ❖ Challenges faced by the SWAYAM course Coordinator related to the relevance
 - i. The findings indicate that the majority of respondents (78.57%) disagreed with the notion that lack of student interest was a significant factor in non-participation in SWAYAM MOOCs. However, 100% of respondents agreed

that the cost of examination fees significantly hindered the successful implementation of SWAYAM MOOCs.

- ii. The findings also indicate that the majority of respondents (78.57%) disagreed with the notion that insufficient prior knowledge about the topic created obstacles in the implementation of SWAYAM MOOCs, while the majority of respondents (71.43%) disagreed with the notion that the lack of motivation created difficulty in the implementation of SWAYAM MOOCs.
- iii. The findings indicate that most of the SWAYAM course coordinators (57.14%) agreed that technical issues did create hurdles in the implementation of SWAYAM MOOCs, and the findings also indicate that 57.14% of SWAYAM course coordinators did not perceive that over-the-course expectations created trouble for the implementation of SWAYAM MOOCs.
- iv. The findings exhibited that most of the respondents, 78.57% of respondent did not face any problems from educational administration in the implementation of SWAYAM MOOCs.

Discussion:

The findings highlight the challenges faced by stakeholders in implementing SWAYAM MOOCs (Massive Open Online Courses) in higher education institutions in Assam. The major findings are categorized into three dimensions: challenges faced by students, challenges faced by SWAYAM coordinators, and challenges faced by SWAYAM course coordinators. In terms of challenges faced by students, the findings indicate that a lack of student interest, cost of examination fees, insufficient prior knowledge about the topic, lack of motivation, and technical issues all pose obstacles to the implementation of SWAYAM MOOCs. However, over-the-course expectations and problems from educational administration are perceived to be less significant challenges. SWAYAM coordinators highlight similar challenges, with a majority citing a lack of student interest, while technical issues and over-the-course expectations are perceived as less problematic. On the other hand, SWAYAM course coordinators largely disagree with the impact of student interest, motivation, and insufficient prior

knowledge as significant barriers but acknowledge the cost of examination fees and technical issues as challenges in the implementation of SWAYAM MOOCs.

The findings shed light on the various challenges encountered by different stakeholders with regard to SWAYAM MOOCs implementation. Students express concerns about their lack of interest, the cost of examination fees, insufficient prior knowledge, lack of motivation, and technical issues as barriers to their participation in SWAYAM MOOCs. Conversely, SWAYAM coordinators predominantly emphasize the lack of student interest as a major challenge while also acknowledging technical issues and over-the-course expectations. SWAYAM course coordinators, however, dispute the significance of student interest, motivation, and insufficient prior knowledge as obstacles but recognize the impact of examination fees and technical issues. Notably, educational administration issues and over-the-course expectations are perceived as less problematic across the board. This finding is corroborated by the findings of research conducted by Deb (2023), Ponnaiah et al. (2022), Kotwal et al. (2022), Singh & Kakkar (2023), Gupta (2021), Ma & Lee (2018), Subaveerapandiyan & Ahamed (2020), Ulrich & Nedelcu (2015), Peters and Oladokun (2022) & Wahidah & Nasir (2020).

5.2.5 Results Related to Objective no 5

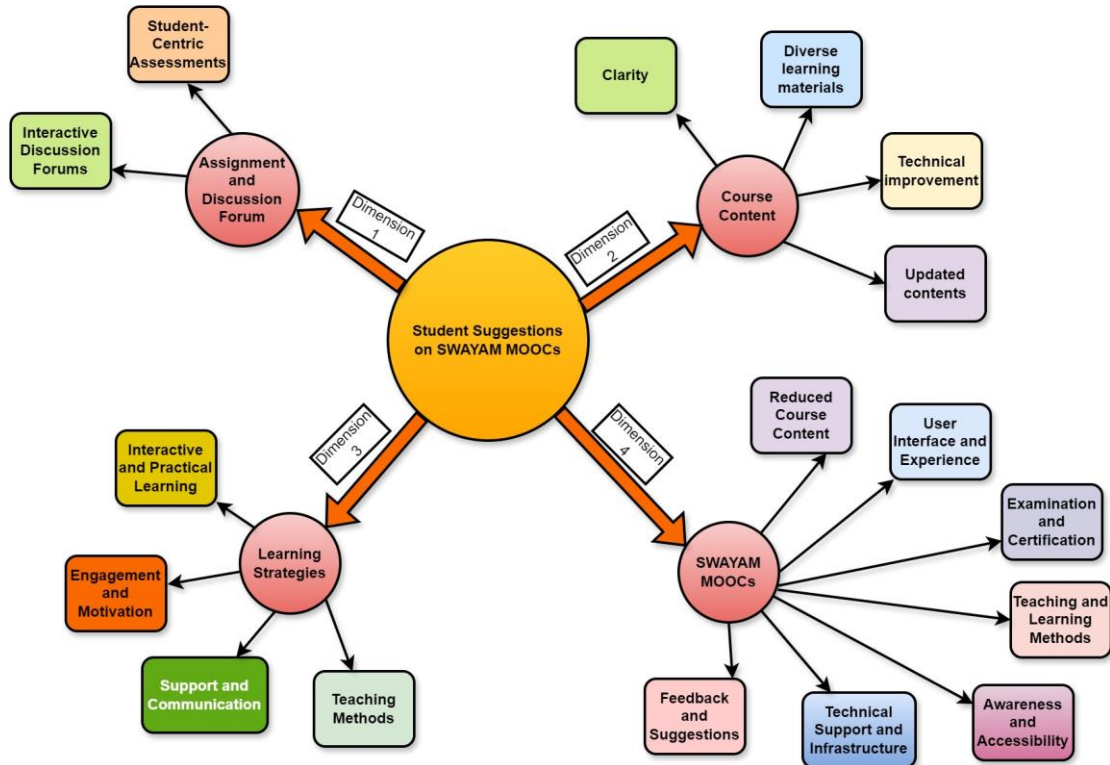
To study different remedial measures suggested by the stakeholders regarding the different problems that they faced related to SWAYAM MOOCs.

Major finding

This study revealed that the stakeholders suggested different remedial measures regarding the different problems that they faced related to SWAYAM MOOCs. These suggestions were classified into several sub-themes,

(a) Student Suggestions Regarding solving the different problems that they faced related to SWAYAM MOOCs

Figure 5.1 Student Suggestions Regarding solving the different problems that they faced related to SWAYAM MOOCs



(1) Student Suggestions Regarding Assignment and Discussion Forum

Student-Centric Assessments: Students suggestions for enhancing the assignment and discussion forum in MOOCs focused on boosting the collaborative and interactive facets of these platforms. Some students recommended increasing engagement through more sophisticated means while avoiding lengthy sets of objective questions and written assignments. They also suggested incorporating oral tests and providing creative strategies despite potential logistical challenges. Other students advocated for assignments that encouraged regularity and punctuality, along with updated assessment management. Further, the participants highlighted the need to improve assessment quality by enhancing interaction, incorporating practical examples, and including videos. (Aydın, 2021; Sanzgiri, 2020; Nawrot & Doucet, 2014)

Interactive Discussion Forums: Students emphasize the importance of interactive and responsive discussion forums that facilitate the addressing of problems quickly. They propose adding short, interactive sessions in addition to live classes during the course and also upholding a constructive and courteous discussion forum. Several students suggest using social media in discussion forums to enhance their efficacy. In general, students also propose that the inclusion of immediate feedback and clear guidelines for participation in discussion forums enhances the quality of the discussions (Hew & Cheung, 2014; Seethamraju, 2014; Hew & Cheung, 2014).

Student suggestions regarding course content

Clarity: Some of the students have emphasized the need for course materials to be more explicit, more concise, and easier to understand. They pointed out that overly complex language and dense text can hinder learning, making it difficult for students to grasp critical concepts and retain information (Wan et al., 2020).

Diverse learning materials: When questioned about learning materials, students felt that there was an integrated, more comprehensive range of components in the course, including interactive quizzes, simulations, podcasts, infographics, and gamification, to meet the demands of various learning styles (Li & Canelas, 2019; Almuhanha, 2018; Singh, 2022a; Gameel & Wilkins, 2019; Major & Mira Da Silva, 2023).

Technical improvement: Some of the students suggested using modern technology to enhance the quality of video and audio. Furthermore, some students also suggested using artificial intelligence (AI) to personalize the content according to a learner's progression, preferences, and preferred learning style, therefore enhancing the engagement and effectiveness of the learning experience.

Updated contents: Students noted the importance of updating the SWAYAM MOOCs course content to reflect current advancements and trends in their respective fields. They believed that incorporating the latest developments not only kept the curriculum relevant but also enhanced their learning experience by providing insights into contemporary practices and innovations.

Student suggestions regarding Learning Strategies

Engagement and Motivation: Some of the students asserted that the integration of more instructive sessions provided valuable knowledge and understanding. Interactive sessions, which involved dialogues and group activities, were also seen as beneficial. According to the comments made by some students, utilizing advanced techniques like graphics and animation, along with new educational technology, made the learning experience more engaging. The implementation of frequent exams helped maintain student engagement and offered instant feedback, hence enhancing motivation (Brahimi & Sarirete, 2015; Ichou, 2018; Nawrot & Doucet, 2014; Chatterjee & Nath, 2014).

Interactive and Practical Learning: The participants suggested incorporating more interactive sessions into the curriculum to ensure active participation and motivation among students. Furthermore, this provided more hands-on learning opportunities that enhanced theoretical understanding and improved overall learning outcomes. Including online labs and interactive simulations helped provide a virtual environment for students to perform experiments and visualize complex concepts.

Support and Communication: According to the participants, to enhance engagement and motivation in online classes, students emphasized the need to receive individualized attention and establish connections with each student. Sufficient learning materials and acknowledgment of successful instructional methods were essential. Establishing connections, facilitating peer learning, and cultivating collaboration were essential for overcoming obstacles in MOOCs. Some of the students said the assignments should assess both the level of engagement and the ability to be on time, and implementing personalized, interactive, and student-centered approaches greatly improved the quality of the online learning experience (Yousef & Sumner, 2020; May, 2018; Gupta & Jain, 2017).

Teaching Methods: The study's participants elaborated that integrating multiple languages in teaching increased student participation. It was recommended to incorporate sophisticated sets of objective questions and written tasks in order to foster a sense of seriousness. Despite the logistical hurdles, oral examinations also yielded benefits. It was crucial to offer innovative tactics and a diverse range of themes for debate.

Student suggestions regarding Relevance of SWAYAM MOOCs

Reduced Course Content: Some students suggest that the syllabus and course content should be reduced. Courses should be more efficient and more specific, and more new courses should be introduced, especially in technical fields.

User Interface and Experience: Some students reported that the SWAYAM portal is not user-friendly, and students have technological difficulties when it comes to enrolling, registering, and selecting exam centers. The platform needs to be updated and more user-friendly. Providing better visual content and including a user-friendly and intuitive interface can significantly enhance the learner's experience. Ensuring that Optimizing the learning platform for mobile use may significantly improve accessibility and user experience. (Hashim, 2020; Tulsi, 2019)

Examination and Certification: There is a need to decrease examination fees, make exam time more convenient, and improve cooperation about exam venues. Certification processes should also be improved.

Teaching and Learning Methods: Teachers should use innovative teaching methods and have good communication skills. Live classes and quizzes, along with interactive learning strategies, can improve engagement. In order to enhance the course's level of engagement and effectiveness, it is imperative to provide comprehensive information, detailed explanations, informative videos, and illustrative examples. (Gujarati et al., 2017; Priya, 2017)

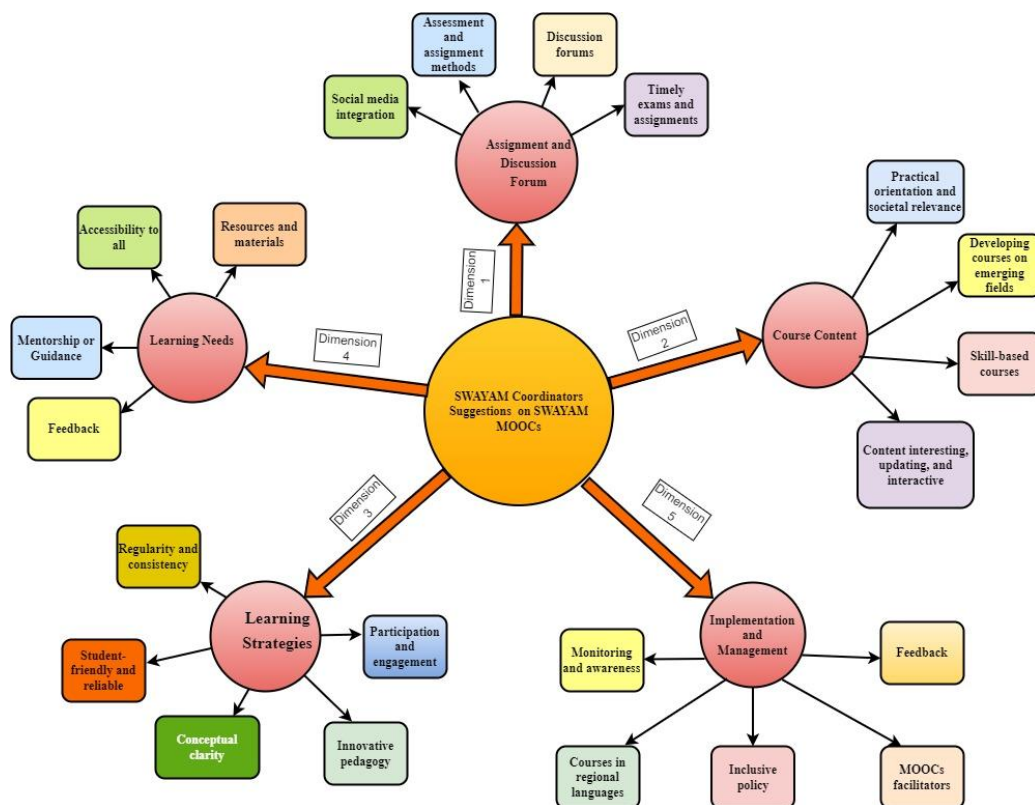
Awareness and Accessibility: More awareness should be created about SWAYAM courses, especially in rural areas. The platform should be more inclusive and reduce examination fees for underprivileged students.

Technical Support and Infrastructure: Technical issues should be addressed, and enhancing infrastructure is crucial. The exam centres should be more accessible and closer to students' homes, that's helps with the stress and inconvenience of travelling long distances can be reduced.

Feedback and Suggestions: There should be a mechanism for quick responses to student queries and suggestions, and student feedback should be actively used to improve the platform

(b) SWAYAM Coordinator Suggestions Regarding solving the different problems that they faced related to SWAYAM MOOCs

Figure 5.2 SWAYAM Coordinator Suggestions Regarding solving the different problems that they faced related to SWAYAM MOOCs



SWAYAM Coordinator suggestions on course content

Content engaging, updating, and interactive: Some SWAYAM coordinators include interactive elements such as videos, interactive quizzes, and multimedia that can be integrated into the content of courses to make MOOCs content more attractive and enjoyable for learners. (Conole, 2016). The course should be well-structured with obvious learning goals, organized materials, and easy navigation. These features enable the SWAYAM coordinator and other students to easily navigate through the course

while at the same time understanding its contents. This may include having clear outlines for a course, summarizing modules, and making instructions simple for activities.

Some SWAYAM coordinators also suggest that content must be updated with current trends in practice is crucial to ensure that learning remains relevant and meaningful. Some of the coordinators also frequently review MOOC course materials to keep up with the latest developments within their field (Liu et al., 2014; Evans & Myrick, 2015).

Practical orientation and societal relevance: The emphasis on practical orientation and societal significance in revising course content for MOOCs is a new approach to education that suits the changing global landscape. Some SWAYM coordinators suggest teachers can make learning more beneficial for students by ensuring that their skills are relevant to real-life professional circumstances instead of theoretical issues so as to narrow the gap between theory and practice. Some SWAYM coordinators suggest course content must be improved for MOOCs; they should focus on providing practical skills and knowledge that are relevant to real-world applications and beneficial to society (Stracke & Trisolini, 2021). This can include courses on humanities, entrepreneurship, sustainability, and technology, which will address current and future societal challenges and needs. They also comment that this can help students understand how what they have learned is applicable in real-life situations as opposed to simply increasing their comprehension levels about concepts taught, thus making them better able to remember or recall such information, given the improved understanding of its applicability in everyday life. ("MOOCs Revamping Indian Higher Education: Escalating Access, Equity, and Quality," 2023)

Developing courses on emerging fields: The SWAYAM coordinator stressed the importance of developing courses on emerging fields in MOOCs. According to them, this was a way of ensuring that learners had access to state-of-the-art knowledge and skills, as well as enhancing their competitiveness within the rapidly changing job market. These topics were diverse and included artificial intelligence, blockchain technology, cyber security, and data science. Staying current with these new fields enabled one to acquire the latest skills and prepared one for modern workplace hurdles. SWAYAM MOOCs platform considers this kind of course development a great leap forward. (Mohapatra & Mohanty, 2016)

Skill-based courses: The SWAYAM coordinator highlighted the relevance of incorporating skill-based training courses into MOOCs (Hossain et al., 2022). They thought that such classes could significantly improve the valuable significance of MOOCs and boost students capabilities by targeting specific skills critical for various sectors, including communication, problem-solving, and technical skills. They also emphasized the role of awards and motivation in encouraging students to opt for relevant courses, which could enhance their confidence and understanding of foundational programs, thereby encouraging further studies and skill development (Kumar & Kumar, 2020). Hence, the addition of skill-based programs and inspirational approaches are viewed as considerable enhancements to the SWAYAM MOOCs system (Trehan, 2017).

SWAYAM Coordinator Suggestions Regarding Assignment and Discussion Forum

Social media integration: The SWAYAM coordinator proposed that social media platforms should be integrated into MOOCs to promote student participation and collaboration. They argued that integrating WhatsApp and Telegram discussion forums with popular social media networks could increase learner access and engagement. This way, it was easier for learners to take part in conversations and browse through course materials, and social media might have been helpful in promoting collaboration among fellow students. Furthermore, they suggested that groups or project teams could be formed on social media sites so as to enable the participation of students in group-based assignments and focus on community building amongst learners, the promotion of peer-to-peer learning, and the exchange of ideas plus other digital resources (Zheng et al., 2016; Veletsianos, 2017).

Assessment and assignment methods: The SWAYAM coordinator emphasized the importance of developing courses on emerging fields in MOOCs. They believed that this approach not only provided learners with access to cutting-edge knowledge and skills but also enhanced their competitiveness in the rapidly evolving job market. (Karnouskos, 2017) The courses covered a range of relevant topics, including artificial intelligence, blockchain technology, cybersecurity, and data science. By staying updated with these emerging fields, learners were better equipped with the latest expertise and prepared for the challenges of the modern workforce. This approach to

course development is seen as a significant improvement in the SWAYAM MOOCs platform (Karnouskos & Holmlund, 2014; Santandreu Calonge et al., 2019).

Discussion forums: The SWAYAM coordinators suggest several improvements for discussion forums in MOOCs. They propose grading students for active participation in forums to promote meaningful interactions and knowledge sharing. They also suggest offering incentives or rewards for active participation to motivate learners and encourage students to share their experiences and insights can foster a sense of community and collaboration (Gregori et al., 2018). Creating a dedicated space for students to ask questions and seek clarification can ensure timely and accurate responses. Providing clear guidelines for effective online communication and etiquette can foster a positive learning environment. Lastly, providing opportunities for group projects or assignments can promote teamwork and peer learning.

Timely exams and assignments: The SWAYAM coordinators highlighted the importance of timely exams and assignments in MOOCs. They believed that conducting exams and assignments regularly, especially for courses other than NPTEL, ensured consistency and accountability (Hew & Cheung, 2014). They also stressed the significance of maintaining regular attendance in course lectures, submitting assignments on time, and actively participating in group discussions for practical assessment (Gregori et al., 2018).

SWAYAM Coordinator Suggestions on Learning Strategies

Innovative pedagogy: The SWAYAM coordinators suggested the use of innovative pedagogy in MOOCs to improve learning outcomes. (Ferguson & Sharples, 2014) They proposed employing creative teaching methods such as project-based learning, problem-based learning, and inquiry-based learning. They also advocated for adding interactive and multimedia components to MOOC course content, including videos, animations, simulations, and interactive quizzes. They believed these additions could solidify important concepts and make the learning process more engaging. (Watson et al., 2017; Kilgore & Al Freih, 2016) Furthermore, they suggested enhancing the learning experience through the efficient integration of technology into the educational process, providing access to a wide range of resources and tools to supplement traditional teaching methods (Khurana et al., 2019).

Conceptual clarity: The SWAYAM coordinator emphasized the importance of conceptual clarity in MOOCs. They suggested using innovative strategies that prioritized understanding underlying concepts and principles over rote learning (Drake et al., 2015). They believed that this approach could help students gain a deeper understanding of the subject and enhance their ability to apply knowledge in real-world scenarios. This focus on conceptual clarity over memorization is seen as a significant improvement in the teaching approach in MOOCs (Fein, 2017).

Student-friendly and reliable: The SWAYAM Coordinator proposed making the courses well-organized, easy to navigate, and accessible. They believed that implementing an Activity-Based Curriculum (ABC) approach could enhance the learning experience by providing hands-on activities and practical experiences (Beach et al., 2014). They also emphasized the importance of keeping the course content up-to-date to reflect current trends and practices. They suggested that instructors should have regularly reviewed and updated their course materials to incorporate the latest developments in their field. Lastly, they propose offering students opportunities to reflect on their learning progress and goals, which can boost motivation and improve the overall learning experience (Mune, 2020).

Regularity and consistency: The SWAYAM coordinators highlighted the importance of regularity and consistency in MOOCs. They suggested regularly hosting webinars or live sessions to deepen learners' understanding of the course content and address any doubts or questions. They also emphasized the need for students to maintain consistent attendance in course lectures, complete assignments on time, and actively participate in group discussions. They believed that these practices were crucial for staying engaged and reaching learning goals.

Participation and engagement: The SWAYAM coordinators believed that this approach helped create a dynamic learning environment where students could learn from each other's perspectives and experiences. This fostered a sense of community and collaboration among learners, enhancing the overall learning experience.

SWAYAM Coordinator suggestions on Learning Needs

Resources and materials: The qualitative analysis revealed that the resources and materials provided by SWAYAM MOOCs played a crucial role in bridging knowledge

gaps for all learners, thereby enhancing their overall understanding of the course content. By offering a diverse array of supplementary materials, such as video lectures, interactive quizzes, and reading resources, SWAYAM ensured that learners had multiple avenues to explore and comprehend complex concepts. These resources catered to different learning styles and paces, allowing students to revisit and review the content as needed.

Accessibility to all: SWAYAM Coordinators suggested that courses should have been accessible to all learners, including those with disabilities and limited access to technology (Iniesto et al., 2016). This could have been achieved by offering transcripts for videos, using accessible formats for course materials, and providing support for learners with special needs. They also emphasized the need for a supportive and inclusive learning environment that encouraged respect, empathy, and understanding among both students and instructors. (Park et al., 2019).

Mentorship or Guidance: Offering mentorship from instructors improved the learning experience by providing personalized support and feedback through virtual office hours, one-on-one consultations, and mentoring programs (El Said, 2016; Tang et al., 2024). SWAYAM Coordinators also emphasized the need for continuous monitoring and awareness generation. They suggested that reducing examination fees could enhance access and participation in MOOCs. (Borrella et al., 2022; Billington & Fronmueller, 2013; Blackmon & Major, 2016). Furthermore, they stress the importance of proper monitoring and support from teachers, underscoring the importance of ongoing support and guidance for learners in the online learning environment.

Feedback: The SWAYAM coordinators believe that feedback from students is crucial for continuous improvement. By actively seeking and incorporating this feedback, course Coordinators must ensure that their courses meet the needs and expectations of learners. This process ultimately leads to a more effective learning experience.

SWAYAM Coordinator suggestions on Implementation and Management

Monitoring and awareness: Providing consistent feedback and support to students is essential for keeping them motivated and focused on their learning objectives. This involves giving feedback on assignments, quizzes, and exams and offering support through online forums, office hours, and other communication channels.

Inclusive policy: The SWAYAM coordinator highlighted the policy development for MOOCs by SWAYAM. This suggested that the policy was effective and cooperative, reflecting a favorable stance toward coordinating and managing MOOCs. This approach contributed to the inclusivity of the platform, ensuring that it catered to a diverse range of learners (Yuan et al., 2014; Raffaghelli et al., 2015).

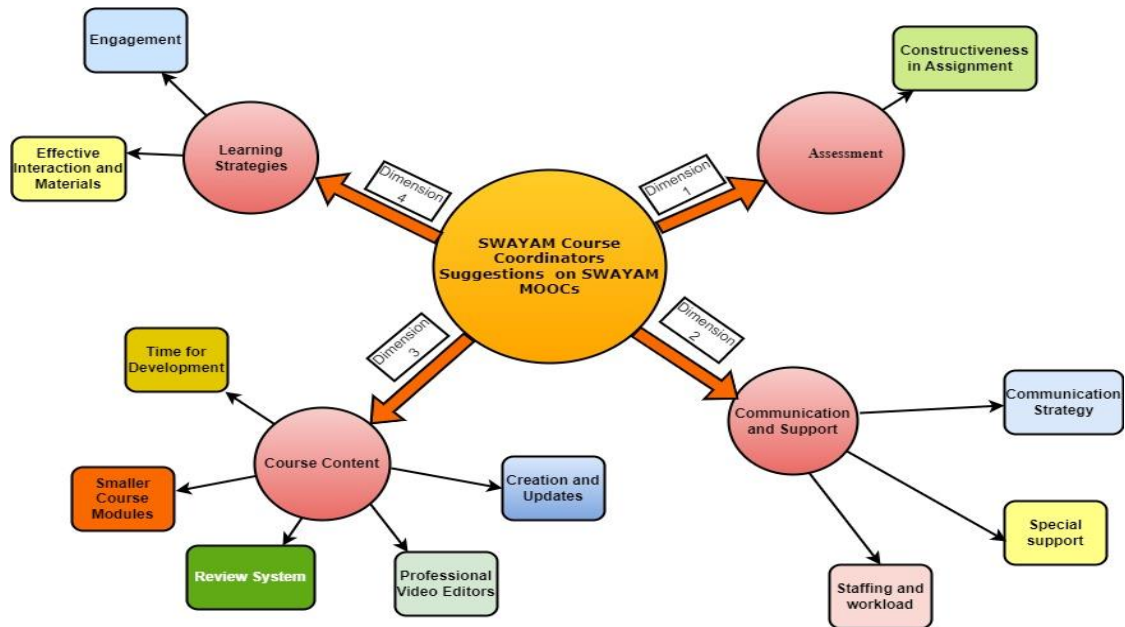
MOOCs facilitators: They recommend assigning proficient facilitators to provide assistance and direction to participants in the MOOCs program. This can enhance the learning experience and provide valuable guidance to learners.

Feedback: The SWAYAM coordinators believed that feedback from students was crucial for continuous improvement. By actively seeking and incorporating this feedback, course Coordinators must ensure that their courses meet the needs and expectations of learners. This process ultimately leads to a more effective learning experience.

Courses in regional languages: The study's participants elaborated that SWAYAM offering courses in multiple languages improved accessibility and inclusivity in MOOCs, making them more relevant and engaging for learners from diverse linguistic backgrounds (Lambert, 2020; Stratton & Grace, 2015; Sanchez-Gordon & Luján-Mora, 2019). This approach underscored the significance of language diversity in MOOCs for reaching learners from various linguistic backgrounds.

(c) SWAYAM Course Coordinator Suggestions Regarding solving the different problems that they faced related to SWAYAM MOOCs

Figure 5.3 SWAYAM Course Coordinator Suggestions Regarding solving the different problems that they faced related to SWAYAM MOOCs



SWAYAM Course Coordinators' Suggestions on Assessment

Constructiveness in the assignment: The viewpoints of SWAYAM Course Coordinators emphasize the importance of several key factors in enhancing the educational experience in MOOCs. These include providing timely and constructive feedback on assignments and assessments, offering clear and concise instructions, accommodating various learning styles and preferences through diverse assessment methods, increasing student-coordinator participation through regular forums and interactive assignments, and ensuring the consistency of end-term tests for academic integrity. (Deng & Benckendorff, 2021; Davis, 2016)

SWAYAM Course Coordinators' Suggestions on Communication and Support

Communication Strategy: The SWAYAM course coordinator highlights the importance of active participation, comprehensive support systems, conducive settings, and efficient communication strategies in MOOCs (Sun et al., 2020). Regular live sessions and discussion boards foster a sense of community and enhance the learning

experience. Multiple support channels ensure timely assistance for learners. Creating a supportive environment encourages learners to participate in discussions and debates. At the same time, an effective communication plan, including clear guidelines on course expectations and regular updates, is crucial, especially for students in remote areas. Local chapters can act as a bridge between students and the institution, offering tailored support and guidance (Madathil Warriem, 2018). These strategies collectively contribute to an enriched educational experience in MOOCs.

Special support: The SWAYAM Course Coordinators emphasizes the need to assist students with disabilities through accessible resources, assistive technologies, and support services. The participant's statement highlights the necessity of providing additional assistance and resources for students with impairments to ensure their full engagement in courses. This approach not only promotes inclusivity but also ensures that all learners are fully engaged in the learning process.

Staffing and workload: The findings highlight the significance of adequate staffing and workload management in MOOCs. The coordinators emphasize that having a sufficient number of experts, including course instructors and support personnel, is essential for the efficient functioning of MOOCs. Furthermore, dedicating enough staff to course development and relieving them from other duties allows them to focus on creating high-quality courses.

SWAYAM Course Coordinators' Suggestions on Course Content

Creation and Updates: The SWAYAM Course Coordinators emphasizes the importance of continually updating course content in MOOCs to maintain its relevance and quality. This involves integrating new concepts, consulting quality textbooks and reference books, logically organizing and coherently presenting course content, ensuring cultural sensitivity and inclusivity, and actively seeking student feedback. The exploration of innovative approaches to course design and the integration of interactive components are also highlighted as crucial for enhancing student engagement and interaction. Regular updates not only ensure that the content remains current but also allow for the integration of new technologies, teaching strategies, and research findings, resulting in more engaging and informative courses.

Professional Video Editors: The consensus among SWAYAM course coordinators is clear: experienced video editors are vital to enhancing MOOCs by producing visually engaging and concise videos that capture and sustain learner interest (Ogunyemi et al., 2022). They agree that professional editing can transform educational content, making it more accessible and easier to understand, which is essential for maintaining the attention and interest of learners. By investing in professional video editing and focusing on creating shorter, well-crafted videos, the quality of online learning experiences can be significantly improved (Fife, 2016).

Review System: The SWAYAM course coordinator advocates for a system that involves anonymous reviewers and coordinators at all levels to ensure high-quality, accurate, and up-to-date content. This mirrors practices in successful MOOC platforms like NPTEL, where a comprehensive review process involving peer and expert evaluations is fundamental to maintaining content quality and relevance (Hayes, 2015). Such a system not only guarantees the excellence of the material but also leverages feedback for future improvements, thereby fostering a continuous cycle of quality enhancement in online education.

Smaller Course Modules: The research findings highlight that segmenting course content into smaller modules is beneficial for learners. It enhances understanding by simplifying organization and accessibility, making it easier for learners to digest and retain information (Caskurlu et al., 2020). This modular approach is effective in improving both comprehension and memory recall.

Time for Development: The SWAYAM course coordinators highlight the significance of allocating ample time for course creation, which is essential for producing high-quality content. Furthermore, it facilitates the involvement of experts who can further refine the quality of course videos, leading to a more polished and engaging educational experience.

SWAYAM Course Coordinators' Suggestions on Learning Strategies

Effective Interaction and Materials: The research findings emphasize the value of interactive learning and the provision of additional resources in enhancing educational experiences. By integrating supplementary materials like readings, case studies, articles, and webinars, courses can offer a richer learning context and deeper

understanding of the subject matter. Furthermore, fostering peer interaction and collaboration through group projects, feedback, and forums, as well as creating opportunities for learners to connect with industry experts via guest lectures and networking events, can significantly enrich the learning journey. These elements contribute to a more comprehensive and engaging educational environment that extends beyond traditional course materials.

Engagement: The finding highlights the effectiveness of using a variety of media types to boost learner engagement in online courses. By incorporating videos, audio snippets, infographics, and interactive simulations, educators can cater to different learning preferences, ensuring that all students find the course material accessible and engaging (MacNeill, 2023). This multimedia approach not only keeps learners interested but also supports a more dynamic and interactive learning environment, which is crucial for maintaining attention and enhancing the educational experience (Chen, 2019).