

*CHAPTER 1*  
**INTRODUCTION**

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The era of twenty-first century is known as the century of science and technology. In the age of modernization, learners are deeply involved with various technologies. MOOCs, which stand for Massive Open Online Courses, are immensely changing how students learn more about it on the internet viz., online (education-blog). Under the mission of digital India, the government has taken several initiatives, and one of the most challenging and focus area is Massive Online Open Courses (MOOCs). The Indian government has launched a major initiative named SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) (MHRD Guidelines for MOOCs), to provide an integrated platform and gateway (portal) for online courses that cover all higher education, secondary school, and skill sector courses (Mondal & Majumdar, 2019). SWAYAM is an Indian-developed IT platform for hosting Massive Open Online Courses (MOOCs) (Majumdar, 2021).

Satisfaction is based on fulfilling one's requirements and anticipation (Shiv & Huber, 2000). It is the judgment of a pleasurable level of consumption that is connected to the total fulfilment of a person's life. It is broadly accepted as a desirable outcome of different experiences of products and services (Hossain, 2018). It can be measured by the views of the pleasurable fulfilment of one's wants and needs (Ali et al., 2016). Satisfaction is a state which is usually felt by a person who has already experienced performance (Weerasinghe, 2017) or an outcome that fulfils one's expectation and

service quality (Santiuste et. al, 2015). It is also an essential parameter of the educational field of excellence.

Student engagement is defined from the perspective of persistence, self-direction, sustained inquiry, playfulness with content, and unprompted transfer of understanding (Heick, n.d.). The students' engagement generally talks about what a student brings in the field of higher education in terms of certain goals, beliefs, aspirations, and values and how these are shaped and mediated by the experience of the whilst a student. Students' participation is generated, co-produced, and recreated via the lenses of their overall identities and views, as well as the meaning and sense they make of their experiences and interactions.

## **1.2 Massive Open Online Courses (MOOCs)**

MOOCs have brought a big wave of scope to the door of constructive education (Kanjilal & Kaul, 2016). A MOOC is an online course that enables many students to study at their speed (education-blog). Peer feedback and open-source materials play an essential role in students' interactions (Samanta, 2018). MOOCs are learner-centred because they allow any number of students to study simultaneously. These classes are open to anybody from anywhere. MOOCs have grown in popularity as a tool for individuals of all ages to enhance their skills and knowledge. MOOC professors employ technology to imitate their teaching methods in the classroom (mooc.org).

MOOCs provide opportunities to their learners such as video lectures, sharing notes, downloading notes, contributing their own, and sharing their point of view by communicating with peers and getting certificates. The OER (open educational resources) movement, spurred by the MIT open courseware initiative, gave birth to the

first MOOC. However, in the case of OER, we are unable to resolve our concerns about specific themes. We may simply resolve our doubts through MOOCs (Venkatesh, 2014).

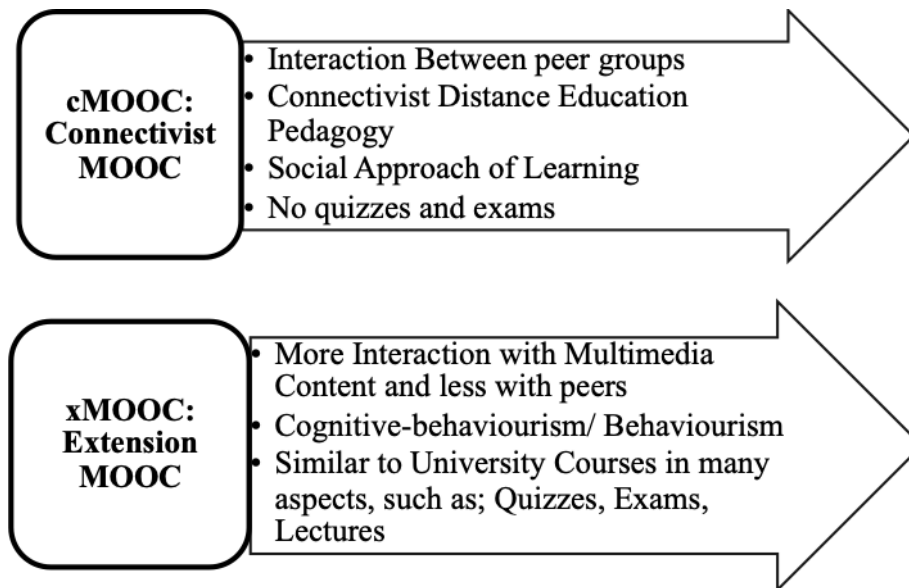
Therefore, MOOCs fulfil both sides. Various MOOCs platforms provide open educational courses, such as Coursera, Canvas, SWAYAM, edX, UDACITY, Khan Academy, and Future Learn. Anyone can enrol in the course of his choice without any qualification restrictions. Online courses comprise videos, handouts, suggested readings, and online tests. On successful completion of the course, certificates are also issued.

MOOCs are online courses that are asynchronous, open-access, and meant to register hundreds or thousands of students simultaneously (Kurt, 2021). MOOCs provide a wide range of content forms, such as recorded video lectures, online examinations, and online readings, as well as varying degrees of student-instructor and student-student interaction (Kurt, 2021). Because of their nature, MOOCs may be able to accommodate students with similar interests from various backgrounds, experiences, and locations throughout the world (Kurt, 2021).

### **1.2.1 Types of MOOCs**

MOOCs are divided into two categories: xMOOCs and cMOOCs. Both MOOCs use different pedagogies. Such as:

**Figure 1.1. Types of MOOCs**



**xMOOCs:** These MOOCs are based on a behaviourist approach, which is allegedly dominated by “drill and grill” techniques of training (Alkhuzaimi, n.d.). According to the behaviourism theory of learning, all behaviours are learned by conditioning, such as video presentations, brief quizzes, and testing. It is based on standard course frameworks and employs well-known teaching methods and resources. Students will watch pre-recorded lectures, complete assigned readings, and engage in discussions guided by the course instructor or the instructional staff of a higher education institution. xMOOCs are typically self-contained, with materials from outside the primary content distribution and learning platform being utilised only in rare cases (Kurt, 2021). Courses have a specific goal of finishing and earning certain knowledge certification of the subject area. However, some services need paying memberships to get graded materials and certifications. They include components of the original MOOC but are, in essence, branded IT platforms that provide universities with content distribution relationships (Levy, 2014). The teacher is the authoritative source of

information, and student interactions are confined mainly to asking for help and offering advice on difficult topics.

**cMOOCs:** These are based on connectivist pedagogy principles, which state that content should be aggregated rather than remixable, pre-selected, repurposable, and fed forward, i.e., developing resources should be oriented towards future learning (Anderson et al., 2010). In cMOOC instructional design techniques, learners are linked together to answer questions or cooperate on collaborative projects. This may involve promoting the MOOC's collaborative development. Students in a cMOOC will collaborate to find, assess, and add course content by utilising the learning platform to submit resources such as tweets, blog entries, and wikis (Aragon & Johnson, 2008). By finishing, collecting, and evaluating the students' contributions to the course, a cMOOC teacher or instructional team fosters learning (Kurt, 2021).

Even while other asynchronous online courses have been available for decades, MOOCs are among the most recent evolutions in online learning due to its asynchronous nature, global reach, relationship to college credit, and fully-online design and delivery (Kurt, 2021). Because of its rapid and ongoing popularity among current and lifelong learners, MOOCs seem to be signalling many important trends that will continue for the foreseeable future (Kurt, 2021).

As educational technologies, instructional design, online learning, content delivery platforms continue to evolve, more learners with more needs, and motives will be drawn to taking online courses (Muthuprasad et al., 2021); a growing demand that will spur further improvements in technology and delivery. Rather than relying just on content delivery, it seems that future online learning options will need to focus on using

technology to enable customised learning experiences that meet a variety of student needs, including accreditation, affordability, and accessibility, among others (Kurt, 2021; Patrinos & Shmis, 2020).

### **1.2.2 Four Quadrant Approaches in MOOCs**

There are four quadrants in MOOCs: e-tutorial, e-content, discussion forum, and assessment.

**E-tutorial:** An online tutorial is a self-study activity that aims to meet the course's learning objectives (Design principles for online tutorials, 2016). They are frequently offered through the internet in the form of recorded tutorials, which consist of video or screenshots of a topic expert delivering information and concepts or doing demonstrations. Interactive tutorials, which are an organised collection of navigable web pages, are another instructional. Text, picture, audio, video, self-test questions, and other interactive activities may be found on a single page. E-tutorials often contain structured video and audio material, simulations, animation, virtual labs, video demonstrations, and video transcription, as well as other multimedia elements (CEC on MOOCs, 2021). As a result, students' study, amass a wealth of information and take an active role in class. In addition, instructors frequently create and teach unique courses to achieve certain learning objectives.

**E-content:** In MOOCs, e-content is very important in online learning. A wide range of digital assets with instructional value is offered in the online mode. Teachers and students may use, reuse, and modify some high-quality materials provided for free or with little limitations for their learning and teaching (The emergence of open educational resources, n.d.). Students are transitioning from textbooks to digital course

materials due to the high expense of textbooks. These products increase interaction and social participation for both students and instructors. Because of the flexibility in time, location, and learning speed, it is gaining popularity. It encompasses all types of material produced and disseminated through different forms of electronic media. It can be utilised by a broad range of learners with a wide range of requirements, backgrounds, prior experience, and ability levels. It can be simply and quickly shared and transferred to an endless number of individuals throughout the globe. The usage of well-designed and created e-content benefits students, instructors, and others (Malik, 2015).

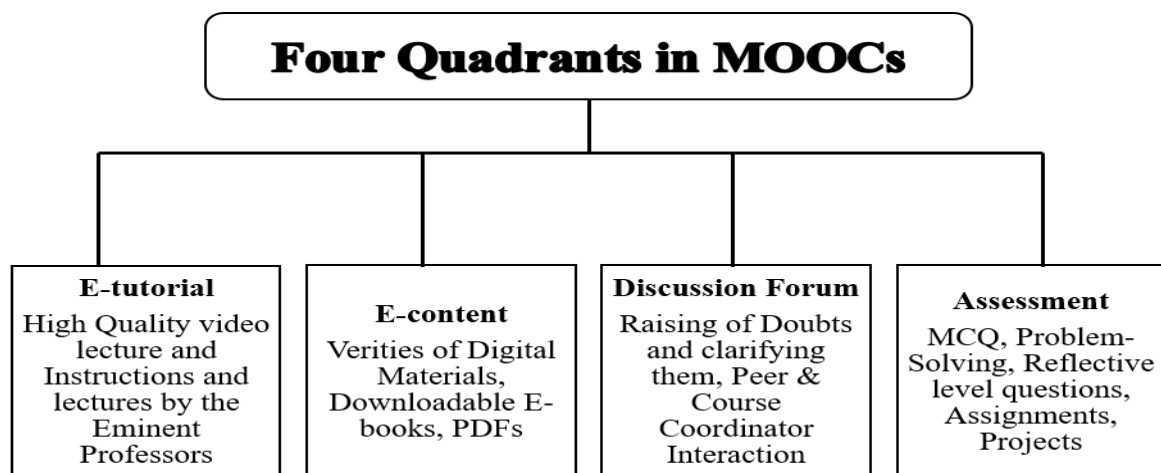
**Discussion Forum:** A discussion forum is usually utilised by the course organiser or his team to raise questions and explain them in near real-time (CEC on MOOCs, 2021). Student satisfaction is affected by the academic assistance offered in the course, which is based on communication between learners and mentors (Kakada et al., 2019). Students may utilise the online discussion forum for many purposes, including reading materials before an assignment or exam, engaging students in a discussion of course materials before class, and commenting on topics read or accomplished outside of class (Conventry University, News, 2021). This forum has the potential to help students succeed in online learning. Students often ask questions regarding the course materials, express their thoughts on many issues, and ask questions on the forum. The communication environment is based on e-learning feedback and answers through email and telephone.

**Assessment:** Assessment, the fourth quadrant in MOOCs, is a vital component of online learning and plays a major part in the learning process. It gives students a notion of how far they have progressed in a course, identifies individual strengths and



weaknesses, and (Wiley, 2020) eventually determines if students have met the course’s learning goals. Assessments must also engage students and provide them with the skills they will need in future courses, practicums, and possibly employment (“Authentic evaluation” 2020). Questions and answers are generally presented in the form of multiple-choice questions, fill-in the blanks, matching questions, short answer and long answer questions, quizzes, assignments and solutions, discussion forum topics, FAQs and the process of creating the questions and answers (Projects CEC on MOOCs; Kamarudin et al., 2020).

**Figure 1.2 Four Quadrant approaches in MOOCs**



A MOOC may be taken by anybody interested in the topic and has access to the course, regardless of age, background, or location. MOOCs are often provided twice or three times a year to ensure that students do not miss out. MOOCs, which are led by subject matter experts and assisted by teaching assistants, provide students with high-quality instructional resources. A MOOC generally involves 1-2 hours of study each week for 5 weeks, allowing students with hectic schedules to learn (Kurt, 2021). In a MOOC,

students may go through course materials and assessments at their leisure while also engaging in a global learning community (Kurt, 2021).

MOOCs (Massive Open Online Courses) are online learning environments that allow students to take courses in various areas for free or at a low cost. MOOCs are a kind of educational technique that enables hundreds of thousands of students to attend online courses for free worldwide. MOOCs are free online classes that need just that you have access to the internet. Consequently, MOOCs are open to everybody and do not have a limit on the number of people who may participate (Kurt, 2021). MOOCs enable users to enrol in various courses for a variety of reasons, including personal curiosity, job progress, and social networking. Similarly, MOOCs vary in their intended purpose in terms of how designers construct their MOOCs to meet the needs of prospective students, especially when it comes to addressing intrinsic goals like general curiosity or extrinsic goals like professional development (Kurt, 2021).

It offers a flexible schedule and provides education free of cost, but learners have to pay a nominal charge for certificates on some MOOCs platforms. So, it basically focuses on access, equity, and quality. Thus, we can say that the learning in MOOCs should be very satisfying, which depends on the design of the course (Fournier & Kop, 2015). The design must be instructional and the cognitive and sometimes constructive instructional design are used by MOOC platforms accordingly. During pandemic COVID-19, open educational resources for online learning (NEP, 2020) has upgraded much. Governments in most developed and developing countries have consequently recommended moving teaching-learning through online mode.

Now, the Government of India has decided that they will provide education through blended mode. That is like 60% of their total courses will be provided through offline mode and 40% of their total courses will be provided through online mode. UGC has also announced that they will provide 83 undergraduate and 40 post-graduate non-engineering courses through the online mode (India Today, 22<sup>nd</sup> May). The UGC has also announced new MOOCs for its SWAYAM platform for July session 2021 and this report was published on 28<sup>th</sup> May, 2021. UGC has also declared the disciplines, degree programmes, subjects, course titles, name of the course coordinators with their designations, affiliated institutions, starting dates as well as ending dates, name of the host universities, tentative exam dates with no. of credit of the courses and the URL of the courses. It can be said that the proper engagement comes from various ways (Fredricks et al.,2004). So, it's needless to say that they are providing learner, learning support, managing assessment, and feedback as well as a certificate of completion will be awarded to those who complete all the tasks in the course and provide the certificate of participation on the marks and assessments.

### **1.3 MOOCs from the Perspective of NEP-2020 and Indian Initiative**

The National Education Policy (NEP) permits students to take a major part of their course through online platforms. This includes the Government's NEP 2020 MOOC platforms like the SWAYAM portal. Online platforms are now considered one of the major parts of digital education. During the pandemic COVID-19, the MOOCs gained much more relevance. The SWAYAM platform has partnered with more than 203 institutes and has around 1,24,41,000 students enrolled. However, 900000 have registered for the exams, but only 6,54,664 have passed successfully. The UGC has

declared guidelines to all the universities to offer 20% of the online course. Available in either the SWAYAM portal or from any other institution of higher education.

According to the FICCI report (2021), “it is true, and it really sounds nice, that our country’s education system has been greatly enhanced to promote online education with the New Education Policy. Online education is not only the finest crisis management tool available now, but it is also a blueprint for the future. Indians are the second-largest MOOC customers. There are roughly 3.5 million students enrolled in higher education in India, with approximately 900 institutions to meet this need. MOOCs will have approximately 14 million students in 2030, which is a four-fold increase in demand. India will need four times the number of universities, colleges, and instructors to fulfil this”.

Similarly, India might suffer a shortfall of 250 million qualified people across all industries by 2022. The NEP isn’t about getting a degree; instead, it concentrates on life skills and practical training. NEP is an online education portal where students may think outside of the box and turn their life skills into job-ready courses in a short amount of time. The government must open its eyes to the realities of e-content to establish standards for quality material and student equity in both schools and higher education. NEP creates a new path and transforms each student’s educational career into a digital one. It’s a path toward a comprehensive educational vision that will equip youngsters and children for skill-based education in the twenty-first century. NEP is a big supporter of open-source programmes that combine artificial intelligence, smart analysis, and well-structured information to promote learning in the context of gamified learning (MOOC-Personalising Universal Education Aspect, 2020).

#### 1.4 MOOCs: Status in India

It's been a decade since MOOCs became popular. They currently have a total of 220 million students. According to a study from class central (Shah, 2021), over 300,000 people attended the free Stanford courses that launched the current MOOC revolution 10 years ago. MOOCs have already surpassed 220 million learners worldwide, excluding China, over a decade later. According to suppliers, over 3100 courses and 500 micro-credentials will be available in 2021 (Shah, 2021). In 2021, 40 million additional students enrolled in at least one MOOC, up from 60 million in 2020. In terms of subscribers and offers, the leading MOOC providers are:

**Table 1.1 Enrollment in MOOCs in 2021**

<b>Platforms</b>	<b>Learners</b>	<b>Courses</b>	<b>Micro-credentials</b>	<b>Degrees</b>
<b>Coursera</b>	97 million	6000	910	34
<b>edX</b>	42 million	3550	480	13
<b>FutureLearn</b>	17 million	1400	180	22
<b>SWAYAM</b>	22 million	1465	0	0

Source: ([By the Numbers: MOOCs in 2021], Shah, 2021)

Across 950 universities around the globe will announce or launch 19.4 thousand MOOCs by the end of 2021. Approximately 3.1 thousand new courses were added in 2021 (Shah, 2021).

## 1.5 Significance of the Study

Nowadays, MOOCs are very famous online learning platforms all over the world. It is very easy to join the courses on MOOCs. The learner has to sign into MOOCs first and they can log in from anywhere and anytime with the proper connection of the network. Otherwise, the course progress is not counted by the authority. Nowadays, learners cannot go out because of the pandemic COVID-19 and every educational institution has been closed for more than one year. So, the following are the major areas where the particular study will be significant in today's scenario. Such as:

- 1) Our Government and UGC have decided to teach online. UGC also notified that every university could not refuse any student for the credit mobility of courses earned through the SWAYAM platform. UGC has developed more than 145 MOOCs and offered more than 208 MOOCs on the platform of SWAYAM.
- 2) NEP 2020 also discussed the blended mode of learning in the field of teacher education and SWAYAM and DIKSHA portals would be used for teacher training programmes and standardized training programmes. They have taken so many digital initiatives in the field of education and they talked about the DIKSHA portal for an online national repository of high-quality resources on fundamental literacy and numeracy and digital libraries.
- 3) They also talked about introducing peer tutoring in education. Teachers will be recruited based on technology-based efficiency. So, it is seen that the upcoming world will take education not only in the conventional mode but education will be provided by the online mode also. The government is also trying to focus on the up-gradation of the design.

- 4) All the educationists should be prepared for the ongoing and upcoming education system and MOOCs will take a significant place over here. It will be impossible without the help of proper strategy of student engagement, the students' satisfaction, design of the courses like OERs, and attractive course design based on four quadrants of MOOCs. So, this study is very important from the perspective of the present situation.
- 5) UGC has already provided some of the lists of UG and PG courses on their website and the government of India has also declared that about 40% of the total courses will be provided online.
- 6) Students will get much more flexibility through this process of learning and they can upgrade themselves from the teachers and professors and their peers also. UGC has also allotted some specific universities for providing online learning in various courses.

This study provides significant insight to those learners interested in joining this kind of MOOC and they also understand the (Kumar & Kumar, 2020) several engagement patterns; such as behavioral, social, emotional, and cognitive engagements of the learners. The behavioural engagement will help to understand the student involvement in MOOCs. This will help understand the students' participation in different types of academic activities and efforts to perform academic tasks. The cognitive engagement will help to understand the integration and utilization of the student's skills, motivation, and strategies in their learning. The social engagement will help to understand the involvement of the students to the instructors and peers as well as their contribution in regular discussion. The emotional engagement will help to understand the level of self-

motivation of the students and try to find out their inspiration for that particular course which they have already attended.

This study will help to understand the student satisfaction on the basis of four quadrants of MOOCs. The researcher will find out the perception of the students on the basis of the four quadrants approaches in MOOCs. The course coordinator will also understand how the students have been involved in different disciplines of MOOCs concerning four quadrants. Thus, the study will help to understand the various relations between student satisfaction and students' engagement in MOOCs. The researcher is trying to find out the aspects of those parts that play a significant role in student engagement and satisfaction. If the students do not engage with the courses, they cannot understand whether they are satisfied or not. This study is trying to know the student satisfaction and engagement from the different aspects because The Ministry of Education is planning to provide their courses through the India-based MOOC platform SWAYAM. It is an upcoming project of the Government of India. Moreover, it will help the course coordinator to understand the lacunas how they can engage a large number of students in various online courses in different MOOCs platforms. They can also understand which factor affects the students more related to their satisfaction and engagement in MOOCs (Rajabalee & Santally, 2020).

We all know this is the time of pandemic COVID-19. We have seen that there is a massive change in the education system all over India. UGC has also approved full-fledged online degree programmes in 38 universities across India. Though India is a developing country and this kind of education system which the Government wants to provide, it's not very easy. So, basically, it is a paradigm shift in the education system. This kind of research had not happened before in this pandemic situation. Thus, the



researcher has chosen this topic for research. So, the researcher chooses student satisfaction in MOOCs concerning investigating the effect of student engagement and barriers.

### **1.6 Statement of the Problem**

MOOCs are student-centric because any number of students can study at a single time. MOOCs have become a famous avenue for diverse learners to upgrade their knowledge and skills. However, sometimes we see that the rate of students' course completion is very low upto only 15%. There are various reasons behind it, such as, sometimes they want to explore and try to get experience on the MOOC platform and therefore, do not complete the course. The present research aims to study student satisfaction regarding the four quadrants of MOOCs with respect to their engagement with MOOCs. Hence, the problem of the present study entitled "A study of Student Satisfaction and Student Engagement in Massive Open Online Courses".

### **1.7 Operational Definitions of key terms**

The operational definitions of the variables of the study are as follows:

- I. **Student Engagement:** The students' engagement talks about what a student brings in the field of MOOCs in terms of behavioural, cognitive, emotional, and social engagement. It is because engagement plays a very important role in every work. Self-interest must be there; otherwise, it won't be fruitful (Lan & Hew, 2020). The engagement of students is created, co-created, and recreated through the lens of the identities and perceptions which is generally held by the students and the meaning and sense the student puts in of their experiences and

interactions. In the present study, the Students' Engagement comprises four dimensions and the description of these dimensions are as follows:

- II. **Behavioral Engagement:** It is a type of engagement where students involve in massive open online courses from the aspect of time-management, note-taking, and making for the assignment as well as projects, and also revise notes when preparing assessment tasks.
- III. **Cognitive Engagement:** In the present study, it refers to up-gradation of knowledge, incorporating data, skill development in the process of learning, and various ranges of memorization to use self-regulated strategies to promote students' understanding. During the massive open online courses, students search for further information other than what was provided by the course coordinator, go through the notes, and watch the video lectures for understanding (Lan & Hew, 2020).
- IV. **Emotional engagement:** It mostly refers to students' feelings or emotions towards MOOCs. It reflects the student's inspiration to expand their knowledge, interest in various courses, and enjoy watching video lectures.
- V. **Social engagement:** It refers to the interaction among diverse students and with their course coordinator as well.
- VI. **Student satisfaction:** It is based on fulfilling their requirements and expectation in various MOOCs. In the present study, students' satisfaction considers satisfaction with the four-quadrant of MOOCs with respect to their characteristics. These are described as follows:

VII. **E-tutorial:** It describes satisfaction with e -tutorial in relation to organized content, covers all the learning outcomes, completion of the modules within the prescribed time and the self-assessment based on reflective level questions.

VIII. **E-content:** The e-content plays a very crucial role in the process of online learning in MOOCs. Satisfaction with e-content is considered in the context of organized content , content related to intended learning outcomes, suitable for all learners, the completion of the modules within time, and the self-assessment based on reflective level questions.

IX. **Discussion Forum:** A discussion forum is mostly utilised by the course organiser or his team to raise questions and explain them in near real-time. This quadrant has been explored extensively in the context of student satisfaction in MOOC platforms' discussion forums. Students should encourage themselves with the help of communication and cooperation with others. The course coordinator team and students usually provide feedbacks within the required time period. It focuses on building learners' confidence by promoting their participation in the discussion forums.

X. **Assessment:** Assessment, the fourth quadrant of MOOCs, is a vital component of online learning and plays a major part in the learning process. The satisfaction of students with assessment is considered in the context of providing feedback for the wrong attempt on the quiz to students, variety of objective questions are used for the assessment purpose, uses problem-solving approaches by giving them different projects, and checks the level of student creativity.

XI. **Student:** A student who has successfully completed at least one MOOC on any online platform is considered as a student.

### **1.8 Objectives of the study:**

- i) To create a model of student satisfaction in MOOCs.
- ii) To create a model of student engagement in MOOCs.
- iii) To study the student satisfaction and student engagement in MOOCs with respect to their demographic details.
- iv) To study the relationship between student satisfaction and student engagement in MOOCs.

### **1.9 Hypotheses of the Study**

The hypotheses formulated based on objectives are as follows:

- i) There is no significant difference between male and female students with respect to their satisfaction in MOOCs.
- ii) There is no significant difference among students of different educational backgrounds with respect to their satisfaction in MOOCs.
- iii) There is no significant difference between male and female students with respect to their engagement in MOOCs.
- iv) There is no significant difference among students of different educational backgrounds with respect to their engagement in MOOCs.

- v) There is no significant relationship between student satisfaction and student engagement in MOOCs.

### **1.10 Delimitations of the Study**

The study is delimited in the following way:

- 1) The study is delimited to those students who have not completed at least one MOOC are excluded from the research.
- 2) The study is delimited to only two variables- Student's Satisfaction, Student's Engagement.
- 3) The study is delimited to massive open online course offered in India.

### **1.11 Chapterization**

The research report is presented in five chapters. The details of the chapters are as follows:

**Chapter-I:** This chapter contains a introduction, need, and significance, followed by the statement of the problem, operational definitions of key terms, objectives, hypothesis, delimitation of the study.

**Chapter-II:** This chapter consists of a conceptual framework and review of related literature.

**Chapter-III:** This chapter describes the methodology in details-the population, sample selection, method, tool used for the data collection for the study, tool construction, statistical techniques.

**Chapter-IV:** This chapter presents the data analysis and interpretation in detail.

**Chapter-V:** This chapter consists of major findings, discussion of major findings followed by a discussion of the study's educational implications. A few suggestions for further research in the area are also provided, followed by summary of the study. Fairly exhaustive bibliography follow the report. The bibliography is followed by a series of appendices about the study.