

USE OF MOOCs FOR SKILL DEVELOPMENT OF LIS PROFESSIONALS IN GOA

**Dissertation submitted in partial fulfilment
Of the requirements of Goa University for the
Degree in Masters of Library and Information Science**

By

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Certificate

This is to certify that the work incorporated in the dissertation entitled “**Use of MOOCs in skill development of LIS professionals in Goa.**” is the bonafide work carried out by **Miss Ravina S. Zaraunkar**, in partial fulfilment of the requirement for the degree in Masters of Library and Information Science of Goa University is her own work carried out under my guidance and worthy of examination.

Mr. Rohan Parab

Research guide,
Department of Library & Information Science,
Goa University

Declaration

I declare that this dissertation entitled **“Use of MOOCs for skill developments of LIS professionals in Goa”** submitted by **Miss Ravina S. Zaraunkar** is my original contribution and the same has not been submitted on any occasion for any other degree or diploma of this University or other University/Institute. To the best of my knowledge, the present study is the comprehensive work of its kind from the area mentioned. The literature related to the problem investigated has been cited.

Place:

Date:

Ravina S. Zaraunkar

Department of Library and
Information Science

Acknowledgement

This dissertation bears the touch of many people and I am enormously grateful to each one of them.

First of all, I would like to thank the almighty for giving me strength and intelligence to undertake the dissertation work.

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Chapter I

Introduction

USE OF MOOCs FOR SKILL DEVELOPMENT OF LIS PROFESSIONALS IN GOA

1.1 INTRODUCTION

Massive Open Online Courses (MOOCs) are free online courses available for anyone to enrol. They have emerged as a useful platform in teaching and learning process. MOOCs are gaining popularity as they are being used in more than 190 countries across the world. MOOCs are available in all disciplines. This study provides an overview of MOOCs and how it is useful for skill development of professionals of Library and Information Science (LIS). LIS professionals can explore the unlimited opportunities that are being offered through MOOCs in different fields of knowledge including LIS.

1.2 DEFINATION

MOOCs refer to online learning model in which any individual who has computer and internet connectivity can participate virtually in any course without the prerequisites of the traditional education system. MOOC is a very different online learning model as compared to traditional or online classes where only a limited number of students enrolled with a particular university/college/institute come together and have interactions. MOOCs offer online courses by providing different variety of reading materials such as resources, assignment, exercises to unlimited users without any distinction of caste, creed, location, age, sex etc.

1.3 REVIEW OF LITERATURE

Numerous studies have been conducted with similar perspective to know the use of MOOCs in skill development of LIS professionals. Some of them are reviewed here as a prelude to this research study.

R.Kuri (2018) MOOCs: A new platform for LIS professional Development :- This article is intended to understand the concepts of MOOCs , LIS education through MOOC by offering them the potential to test emerging technologies, experiments and play new roles.

Benefits of MOOCs in LIS education is it help in learning from expert field. Enhance the education and research in LIS. Why MOOCs should be part of LIS because most of the courses are absolutely free. It saves the time and money. It does not require them to be at a specific place to learn. Areas of Application of MOOCs in different domains, LIS professionals need to be skilful at enabling and fostering change. MOOCs help in the continuing education of working teachers and librarians. It supports the professional to continue education for their promotion and enhancing the knowledge and get hold on the areas in weak. MOOCs help in training and motivating the working library professionals. The growth of formal education in LIS is an outcome of the need of training for working librarians.

Pujar S.M & Bansod S.V (2014) - The authors in their article has made an attempt to explain the concept of MOOCs its key players in the field, courses offered in this area and to what extend this new medium can be used in improving the quality of LIS education. A course on New Librarianship was offered in July-August 2013 by Syracuse University, and some other courses by some other universities. This shows there is a scope to run such courses in LIS and interest among library professionals and students in taking MOOCs, which will help the students, teaching and working librarians to learn new skills or improve existing ones to attune themselves to be current in present internet era. This also gives an opportunity for them to learn different courses from prestigious universities. According to Stephens the experiments on MOOCs will help to procedure “a professional development model for librarians that is open and free and becomes a community of learners coming from library schools and jobs”. Possible areas of work and its impact on LIS education and ascertaining its role in developing countries like India

Ecclestone M. (2013) MOOCs as a professional Development tool for librarians - in his article explores how reference and instructional librarians can be taking over new areas of subject. The librarians have the opportunities for gaining hand on experience with particular technologies that can help to improve their reference and instructional services delivery. There is a broad range of courses offerings in areas of computer science for librarians with an interest in developing technological expertise. The University schools of library and information science has offered a course called. The hyperlinked Library MOOCs in 2013, which explores the use of emerging technologies to serve library user communities. The schools of information studies at Syracuse University, has offered a MOOC called New Librarianship and library practice using the fundamental concept that knowledge is created through conversation”. Courses like these can help librarians build on their LIS training and explore a new area of profession. Librarians need to take more responsibility and can develop professional expertise using new e-learning tool through MOOCs courses.

Vijayakumar et.al.(2019) reported that MOOCs give libraries new opportunities to help shape To assume these libraries are centre for MOOCs courses and role of librarians in

understanding the MOOCs. Studying and adopting technologies to manage and monitor MOOC usage of library resources will be essential. Libraries can provide help and expertise in certain aspects of production of the MOOCs such as selecting and providing open source materials which can be used in MOOCs and also creating open educational resources. To fulfil this aim a librarian should know how to use MOOC as a tool to invite users to the library. This article discuss about the role of libraries and librarians in MOOCs era.

Monno & Fontanin(2019)- Found that librarians must be constantly remain up dated to keep pace with the demands of a changing library professionals landscape, beginning from LIS school and continuing with lifelong. Research showed that MOOCs are well suited to specific needs of researchers/users it can be ascertained that this was quite successful in Italy in 2018.

1.4 OBJECTIVES

- To create awareness among the new generation user about the educational and professionals benefits of MOOCs courses.
- To understand how MOOC can serve everyone as a tool for professional development and means for gaining updated knowledge.
- To understand the role of libraries in expanding of the MOOCs in academic institutions.
- To list out the courses of MOOCs that are helpful in skill development of LIS professionals.
- To investigate the learning approaches and type of MOOCs to be used in the LIS domain.

1.5 SCOPE

The study will look at the use of MOOCs for skill development of LIS professionals and this will also include the online courses mostly preferred by LIS individuals in Goa.

1.6 HYPOTHESIS

1. Library professionals in Goa are not aware about MOOCs courses.
2. MOOCs courses are not beneficial for LIS professionals.

1.7 LIMITATIONS

- This study is limited for LIS professionals in academic colleges in Goa only.

- Courses which are useful for LIS professionals will also be considered for this study.

1.8 RESEARCH METHODOLOGY

The study focuses on the use of MOOCs for skill development of LIS professionals in Goa. The survey of the LIS professionals will be done with the circulation of questionnaire/Google forms and personal interview method everywhere required. Further the received responses of the questions received from the respondent will be analysed by using different statistical data.

1.9 POPULATION OF THE STUDY

The population for research study is comprises of different LIS professionals in academic colleges of Goa.

1.10 ORGANIZATION OF STUDY

Chapter I- Introduction

Chapter II- Review of Literature

Chapter III- Massive Open Online Courses

Chapter IV- MOOCs at National and International level

Chapter V - Data Analysis and Interpretation

Chapter VI -Findings, Suggestions and Conclusion

1.11 CONCLUSION

Library professionals and aspiring professionals can derive benefits from MOOCs by enrolling to wide range of courses offered in library and information science on different minor major subject related in the field of library and information science. MOOCs offer prospective for libraries and library professionals in cultivating technical and digital skill related to library administration, management, organisation etc.

Chapter II

Literature Review

Michael Stephens, Kyle M.L. Jones (2014)- MOOCs as LIS Professional Development Platforms: evaluating and refining SJSUs first not-for-credit MOOC. Beyond for credit score offerings, a few libraries and records science (LIS) faculties are exploring MOOCs as a median to sell lifelong getting to know and expert improvement. Using internet surveys and descriptive content material evaluation methods, this paper empirically addresses if, in LIS packages, MOOCs can fill a position and serve new populations of newbies inside large scale getting to know environments. To do so, the authors use a MOOCs they designed, built, and advised as a check bed. Findings screen that scholars did use the MOOCs for expert improvement they increased their expertise and carried out idea fashions out with inside the course, and benefited from various viewpoints furnished through the worldwide network of the studies well-known shows that the studies authors MOOC version become a success and there may be sizeable possibility for LIS packages to serve the career via large-scale experts improvement getting environments like MOOCs. (Michael Stephrns, Kyle M. L. Jones, 2014)

Vijayakumar Subramanian (Nov 2020)- Implementing MOOCs Services In Academic Libraries: New Opportunities For Librarians.

The acronym “MOOCs” is the state-of the art buzzword in better schooling and generated substantial dialogue in each expert and famous media. There isn’t any doubt that MOOCs most visibility contributed to the democratization of schooling in a rustic like India MOOCs tradition has added splendid desire for the unprivileged network deprive of formal schooling. India has 2nd biggest target market for MOOCs after US as such there are splendid possibilities in addition to demanding situations for the librarians to offer essential guide to the MOOCs educators and learners. The success improvement of a MOOCs to make certain that the ones elements are typically visible because the remit of the library

offerings to steer on, which includes MOOCs manufacturing offerings and guidance. This observe can be beneficial the ones libraries and library. (Subramanian)

M. Fagbohun, Chrisopher Nikok, + 4 authors (2021):- Librarian improvement is the technique of continuously strengthening expert attainment, broadening educational knowledge, and improving capabilities. This bankruptcy explores how MOOCs may be used as preserving with expert improvement of a librarian. This bankruptcy narrates how MOOCs can also additionally provide a librarian and possibility to improve their capabilities or in addition their education. It explains the advantages and demanding situations of the adoption of MOOCs for persevering with expert improvement in growing nations and the way this could be implemented in growing economics. The primary advantage of MOOCs to librarians are to assist in expert capabilities within side the twenty first century. It is likewise hooked up that the adoption and use of MOOCs amongst expert librarians in Africa is low so in superior nations. (Michael O. Fagbohun, Chrisopher Nkiko, Basiru Adetomiwa, Aderonke O. Asaolu, Nwamnne M. Nwokeoma, Ugwunwa C. Esse, Kazeem Ommeiza Usman, 2021)

Payel Biswas (2018):- Integration of MOOCs in the Context of library and information Science Service in This Digital Age. In this virtual era, MOOCs are receiving large attention. MOOCs have moved the education circle. The excessive reputation and edition of MOOCs are handiest for being unfastened and offering a completely new sort of studying experience. But there are the library and statistics technology experts will face as MOOCs take off. These encompass influencing demographic and scale. This bankruptcy indicates how MOOCs combine with inside the area of library and statistics technology on this virtual age. (Biswas, 2018)

Anna Kaushik (2018):- Skills of library information science professionals in MOOCs environment. This chapter argues whether the contemporary competencies and skills of information science professionals are sufficient in massive open online courses environment by conducting a SWOT analysis of the skills of library and information science from a MOOCs perspective. It further discusses the category wise and course step

wise professionals needed in MOOCs settings library and information science learners use to develop their skills that fit in MOOCs environment in order to support MOOCs movement. (Kaushik, 2018)

Michael Stephens, Kyle M.L. Jones (2015):- Emerging roles: key Insights from librarians in Massive Open Online Courses. From the reducing area to improvements in online schooling comes the MOOCs a doubtlessly disruptive and transformational mechanism for large-scale learning. What's the function of librarians in MOOCs? What can librarians study from collaborating in large scale expert improvement possibility added in an open surroundings to light up their very own practice? This paper explores the stories and perception of librarian's records specialists collaborating in an LIS targeted MOOC taught with aid of using the authors. (Michael Stephens, Kyle M.L. Jones, 2015)

Anna Kaushik (2015):- Perception of library and information science professionals towards massive open online course: A survey. Massive Open Online Courses has emerged as a burning subject matter in each field, which includes library and statistics science (LIS) area. Thus, LIS specialists are taking hobby in MOOC and related to deeply through numerous ways. This observe aimed to get perceptions of LIS experts in the direction of MOOC and located that almost all of LIS experts who participated on this survey , have been operating as librarians and teachers, they knew approximately MOOC from three hundred and sixty five days through e-resources and serps however that they would no longer participated in any MOOC because of motives of unfamiliarity with online surroundings and additionally located that MOOCs are beneficial in phrases of mastering crucial topics, however copyright and licensing troubles of studying materials had been recognized as the principle barrier. LIS specialists desired to apply sole- primarily based totally mastering through MOOCs which can be to be had freed from value and offer a certificate after carrying out a course folks who desired to expand their very own MOOCs will use it completely in LIS specialists in the direction of MOOCs and in accelerating MOOC moves in LIS area. (kaushik, 2015)

C. Mune (2015):- Massive open online courses have recently emerged as a disruptive pedagogy gaining rapid momentum in higher education. The place of MOOCs in higher education and, some librarians are already tasked with supporting students learning within this untried context. Challenges faced by librarians seeking to support MOOCs span all traditional academic librarians' role: instruction, reference and collection development. To successfully serve these new communities of learners, librarians must apply existing best practices established by distance learning librarians as well as develop new skills and approaches. This paper offers brief introduction to the current state of MOOCs in higher education, explores the need of MOOC students discusses possible best practices to be adapted and adopted as librarians prepare to serve this emerging student population. (Mune, 2015)

Anil Agarwal, Rajesh Kumar Singh (2018):-Massive Open Online Courses (MOOCs) are unfastened online publications to be had for absolutely everyone to enroll. They have emerged as a beneficial platform for coaching and learning. MOOCs are gaining reputation as they are being utilized in greater than one hundred ninety nations through tout the world. MOOCs are to be had in all disciplines. This article gives a top-level view of MOOCs and describes its improvement discipline of library and facts science (LIS). Lis experts and faculty of LIS can discover opportunities and paintings collectively a good way to assists, solve troubles and in growing MOOCs in exclusive of LIS associated subjects and construct libraries photo and show their importance on this virtual era. Library experts who are but now no longer acquainted or engaged with MOOCs concept, can get a flavor of the MOOC and broaden their competencies toward expertise of MOOCs as a whole, a good way to play huge roles and be a part of MOOCs introduction and improvement and capable of aid MOOC motion at an awful lot large level. (Anil Agarwal, Rajesh Kumar Singh, 2018)

Amit Kumar, Dibanjyoti Buragohain and Vinod Kumar Singh: - Problems and Perspective of Implementing MOOCs in North-East India in LIS Perspective. The paper intends to discover MOOC that has attained huge interest in attracting the instructional intellectuals

of various disciplines throughout the globe. The reason of the paper is to analyze, examine and understood that obstacles accompanied with the aid of using the scope of imposing MOOC guides specially the LIS attitude in northeast India. The paper additionally has a tendency to examine the importance of MOOCs with inside the NE region. A complete conceptual version has been recommended with the aid of using reviewing the present literature associated with the unique subject of examine. The version will be useful to the group participants designing and growing the framework for the MOOC guides (LIS). (Amit kumar, Dibanyoti Buragohain and Vinod kumar singh)

Sadanand Y. Bansode: - Library and Information Science MOOCs: An Indian Scenario. This paper research the Government of India MOOC initiative, SWAYAM. Highlights the capacity troubles and demanding situations which could stand up with the existing MOOCs in LIS. The fundamental troubles which been diagnosed consist of the ones relate to language, non-public attention, loose vs. paid authorities coverage and the philosophy of MOOCs. (Bansode, Library and Information Science MOOCs: An Indian Scenario.)

Anna Kaushik (May2018): MOOCs Evaluation and Perceptions of Library and Information Science Professionals. This article offers the genesis of the massive open online courses (MOOCs) The outcomes of this survey discovered that a majority of library and records technological know-how experts who participated on this survey have been operating in instructional and privy to the MOOCs idea from 3 years, with the aid of using scholarly literature. The MOOCs idea change into up to date and beneficial in libraries and the records technological know-how area, whilst a loss of MOOCs associated precise to talents and talents emerged as the principal barrier. This survey additionally confirmed that the idea of MOOCs will keep growing with inside the future. This bankruptcy could be beneficial to recognize the principles of MOOCs and insights of library and records technological know-how experts. (Kauushik, 2018)

Dr. Mohd. Asif Khan, Dr. Nishant Fatima:- MOOCs are Revolution or Constructive learning in Academic Libraries in India. MOOCs offers librarians new opportunities to assist from the verbal exchange approximately adjustments in better schooling and to

manual administrator, faculty and colleges through those adjustments. To count on this role, librarians ought to apprehend MOOCs landscape. Numerous stakeholders could have an hobby with inside the huge highbrow assets that in the long run is living in libraries owned and certified virtual repositories. Studying and adopting technology to manipulate and display MOOC utilization of library sources may be crucial to controlling get entry to and tightening net safeguards. (Dr. Mohd.Asif khan, Dr. Nishant Fatima)

Basheer Abiodun SANNI, Oluyemisi AJIBOYE, Saheed Abiola Hamzat:- Librarians professional development is the process of constantly strengthening professional attainment, broadening academic knowledge, enhancing the professional skill s, and improving library services.The new massive open online courses necessitate academic librarians to be lifelong newcomers who can take gain of to be had possibilities to enhance their expert competence continuously. However, plenty studies has now no longer been carried out on belief of instructional libraries to the usage of MOOC as expert improvement equipment. Therefore, this take a look at tested belief of MOOC as expert improvement decided on colleges' libraries. (Basheer Abiodun SANNI, Oluyemisi AJIBOYE, Saheed Abiola Hamzat)

Shamprasad M. Pujar and Sadanand Y. Bansode: - MOOCs and LIS education: A massive opportunity or challenge. Massive open online courses (MOOCs) are revolutionizing the sphere of better training through giving a brand-new mastering possibility for aspiring students, college and universities in lots of situations regions along with Library and Information Science (LIS). In this paper, an strive has been made to explain the idea of MOOCs key gamers with inside the field, publications presented in LIS and the way fine this new medium may be utilized in enhancing the pleasant of LIS training through list out viable regions of labor and its effect on LIS training in growing countries. (Shamprasad M. Pujar, Sadanand Y. Bansode)

Wu (2013): Mentioned at the present day improvement of Massive Open Online Courses (MOOCs) the strengths and weak spot of MOOCs, and viable relationships among educational libraries and MOOCs. Author advocated that librarian live knowledgeable of the trendy trends and get concerned with inside the MOOC motion on an institutional in addition to non-public level. Similarly, there have been few articles mentioned the dialogue of big open online guides and the libraries involvement on this global motion. (Wu, 2013)

U.S (2021):-Massive Open Online Courses (MOOCs) are latest revolutionary addition to the web getting to know panorama and spreading swiftly in all area which include library and facts technological know-how profession. MOOCs proliferates, LIS experts have the possibility to leverage this era to enhance their expert skills. This paper, meant to apprehend the MOOCs concept, MOOCs and LIS Education, MOOCs benefits, why MOOCs need to be a part of LIS and on the cease mentioned viable regions of utility of MOOCs in LIS area etc. (U.S)

Ramesh Kuri, O.Maranna(2018):- MOOCs: A new platform for LIS Professional Development. Massive Open Online Courses (MOOCs) are latest revolutionary addition to the net gaining knowledge of panorama and spreading swiftly in all disciplines which include library and facts science (LIS) profession. MOOCs proliferates, LIS specialists have the possibility to leverage this era to enhance their professionals' skills. (Ramesh Kuri, O. Maranna, 2018)

Randolf Mariano (2016) From BOOKs to MOOCs: The integration of open educational resources to library services in American spaces in East Asia and pacific region. The converting functions of libraries withinside the virtual studying surroundings paved manner to the upward push of Massive Open Online Courses (MOOCs) in library offerings. From conventional to virtual and collaborative era, this paper describes how MOOCs presented on the American areas, a public international relations library of the U.S branch

of state, accelerated open instructional engagement with library customers and meet the studying wishes of East Asia and the Pacific Region. (Mariano, 2016)

Anna Kaushik (2015) MOOCs and library and information science domain: a review of selected literature. In the present era, everyone is talking about Massive Open Online Courses (MOOCs) due to their immense features and opportunities, as well as their deeper impact on online learning environments in every field. Hence, MOOCs are rapidly gaining popularity in library and information science domain, resultant, various studies were carried out on MOOCs and library and information science professional issues. Thus, this study presents a review of selected literature found in MOOCs and LIS domain. This study will be helpful towards getting literature available on MOOCs and LIS domain at a glance for different purposes.

Meghan Ecclestone (2013) MOOCs as a professional development tool for librarians. This article explores how reference and academic librarians taking on. New regions of situation obligation can expand expert knowledge the use of use new e-studying equipment referred to as MOOCs. MOOCs are new studying version that unfasted better training publications to all of us with a web connection and a eager hobby to learn. As MOOCs proliferate, librarians have the possibility to leverage this to enhance their expert skills. (Eccelestone, 2013)

Vusi Tsabedze, Tella Adeyinka (2020) Awareness and use of massive open online courses among library and information science professionals in Eswatini. MOOCs is gaining pace in this 21st century and has come to be a brand-new fashion withinside the enrollment of educational programs throughout the globe. MOOCs are online gear that guide schooling of individuals freed from costs. However, if focus and use amongst Library and statistics technology specialists in EsWatini have now no longer been considered. This takes a look at consequently tested library and statistics technology specialists' degree of focus and volume of utilization of MOOCs. (Vusi Tsabedze, Tella Adeyinka, 2020)

Dr. P. Balasubramanian, D'silva (2022) Role of academic libraries in the age of MOOCs in India. The have a look at pursuits to record to the modern increase of MOOCs and its evolution, features, benefit, diverse types, international and Indian scenarios, and challenges. The have look at additionally examine the function of instructional libraries withinside the growth of MOOCs within side gift era. The expansion of online schooling via MOOCs in India, which include the NPTEL and SWAYAM, have undoubtedly impacted the increase of Academic libraries. (Bala, dr. P. Balasubramanian, D'silva , 2022)

Triloki pant, Swati pant (2021) the technology shifts for MOOC- based libraries: the need of libraries for MOOCs. MOOCs have developed withinside the beyond decade and end up one of the understanding elements of the better training system. The MOOCs supplied a promising platform to aspirants who desired to take a look in addition to both beautify their instructional reputation or study new technology with the evolution of MOOC, many platforms commenced to provide such publications, and lots of them aren't loose as those publications want to sign up with a few nominal fees. The position and want of libraries come at this factor for MOOC publications are bundled with corresponding take a look at material. The print library wishes to help e-library in order that it can be like minded with the MOOCs and corresponding resources. The bankruptcy offers with the want of library for MOOCs, its shape and era shift from print to e- library, alongside the differentiation among e-gaining knowledge of MOOCs. (Triloki Pant, Swati Pant, 2021)

Mrunalini Gadade (2022) Massive Open Online Courses for library and information science education In this online learning getting to know the surroundings MOOCs is an progressive addition. This progressive and beneficial panorama developing and spreading rapid in special discipline, Library and facts technology (LIS) isn't exception for that. LIS specialists have a higher possibility to study new abilities with the assist of MOOC. This paper centered on MOOC concept, Library and information technology and MOOC, Benefits of MOOCs, Need of MOOCs in LIS and contribution of SWAYAM in MOOC almost about library and facts technology. (Gadade, 2022)

Chapter III

Massive Open Online Courses

3.1 Introduction

Technological innovations have brought about a drastic change in the way higher education is delivered in recent times. Initially, it was the distance education programs, which brought in changes higher education, by making it possible for learners with required qualification to learn without formally attending the classes just by utilizing the course materials delivered at their door steps. In recent years, E-learning has gained a lot of significance in higher learning institutes and it has become a template for the delivery of course contents to students. Now, with the easy availability of Internet and Web 2.0 tools, online learning has become order of the day, giving multiple options for students to choose from and learn as per their desires.

The year 2012 saw a new mode of delivery of higher education by worlds prestigious universities, known as ‘Massive Open Online Courses’ (MOOC)., which has now emerged as one of the most interesting platforms that has been gaining popularity in all disciplines within a short period of time.

3.2 What are MOOCs?

A MOOC can be defined as an online learning model in which any individual who has computer/laptop/tablet and active Internet connectivity can participate virtually in any course without the prerequisites of the traditional education system.

MOOCs are designed for large numbers of participants can be accessed by anyone anywhere as long as they have an internet connection, are open to everyone without entry qualifications, and offer a full/complete course experience online for free. MOOCs tend to differ from in person form of education offered in physical classrooms to a limited number of learners of a certain age attached to an educational institute/university at a particular geographic location.

Massive Open Online Courses (MOOCs) are flexible and open form of self-directed, online learning designed for participation. There are no fees or entry requirements and no formal academic credit is available. While completion rates are low due to varying motivations to enrolling in a MOOC, absolute numbers of participants who complete are usually high. While access to the course's material is free, MOOC platform providers often offered certificate of completion at a cost. MOOC platform provider's individual with cloud hosting environments for delivering courses, offering scale and functionally while institution provides the course material and reputational value.

The major English-medium MOOC platform providers are Coursera, edX, Canvas and FutureLearn and there is a multitude of smaller platforms. Each platform has its technical infrastructure and business model: for example, some platforms align themselves with institutions whereas others allow individual educators more freedom.

MOOCs are a set of online training that proportion numerous key features. The maximum apparent is that each one content material is brought online, both through video, slideshows, dialogue boards, or any aggregate thereof. Courses are commonly advanced with the aid of using famous figures within side the subject from huge studies establishment, however in fact all of us can create a MOOC. Participants pay no enrollment costs and there are not end regulations on who might also additionally register, even though there can be recommended prerequisites. As McAuley positioned it, "MOOC integrates the connectivity of social networking, the facilitation of an stated professional in a subject of study and a group of freely reachable online resources"

Students also participate in online discussion forums where they can get clarification, share their thoughts, and build a sense of community like that found in a traditional classroom.

Although course-work is completed asynchronously, students are grouped together into cohorts, and classes begin and end at certain dates so that one group of students is learning the material together at the same time.

3.3 History of MOOCs

The term MOOC was coined to refer to a course developed by Stephen Downes and George Siemens entitled connectivism and connectivity knowledge in 2008. Their intention was to exploit the possibility for interactions between a wide variety of participants and made possible by online tools so as to provide a richer learning environment than traditional tools would allow. 25 students attended the courses on the campus of the University of Manitoba, and further 2300 from around the world participated online. MOOCs with an emphasis on interactions and connectivity are called MOOCs.

In the fall of 2011, Stanford offered three courses for free online. Peter Norvig and Sebastien Tharun offered their introduction to Artificial intelligence to initial enrolment of 160000 students from around the world over 20,000 students completed the courses. These xMOOCs focused less on interactions between students and more on exploiting the possibilities of reaching a massive audience.

Tharun founded a company called Udacity in February 2012 which began to develop and offer MOOC for free. In April 2012 Andrew Ng and Daphne Koller, two other Stanford CS professors, started a company called Coursera which partnered with universities in preparing and offering MOOCs.

MIT developed the MIT x platform for offering MOOCs, which was renamed edX when a partnership with Harvard was formed. The non-profit edX consortium which develops and offers including MIT. The consortium has made available an open-source version of the platform can be used and developed by other institutions and individuals. The consortium also carries out research into learning using new technologies by analyzing data it obtains from students in the courses. Indeed, the consortium is an outgrowth of an earlier MIT project engaged in such research.

More than 4 billion students have enrolled for Coursera MOOCs both Udacity and edX have enrolled over a million students in their MOOCs. Udacity partnered with San Jose State to offer for credit courses which were not free but were very low cost and blended MOOCs material with support from on-campus professors and teaching assistants. Such success had Sebastien Tharun suggesting that 50 years there might only be 10 institutions offering higher

education. However, the San Jose state experiments was less than successful, with pass rates in some courses significantly lower in the blended courses than under the traditional model. Furthermore, there is a high dropout rate of over 90% in most MOOCs. In November 2013, tharun stated that udacity had a “lousy product” and that they would refocus on vocational education. In contrast the president of the edx consortium insists that students and universities are benefiting from the provision of MOOCs.

3.4 Need for MOOCs

I. Improving access to higher education

MOOCs are regarded by many as an important as an important tool for wide access to higher education (HE) for millions of people including those in the developing world, and ultimately enhance their quality of life. MOOCs may be regarded as contributing to the democratization of HE, not only locally or regionally as well. MOOCs can help democratize content and make knowledge reachable for everyone, students are able to access complete courses offered by universities all over the world, something previously unattained with the availability of affordable technologies, and MOOCs increase access to an extraordinary number of courses offered by world renowned institution and teachers.

II. Providing an affordable alternative to formal education.

The costs of tertiary education continue to increase because institutional tend to bundle too many services. With MOOCs, some of these services can be transferred to another suitable player in the public or private sector. MOOCs are for large number of participants can be accessed by anyone without entry qualification and offer a full/complete course experience online for free.

III. Sustainable development goals

MOOCs can be seen as a form of open education offered for free through online platforms. The philosophy of MOOCs is to open up quality higher education to a wider audience. As such, MOOCs are an important tool to achieve goal 4 of the 2030 agenda for sustainable Development.

IV. Offers flexible learning

Contain lectures, videos and tests through MOOCs can be accessed at any time compared to scheduled class times. By allowing learners based on their own personal scheduled.

V. Online Collaboration

The learning environments of MOOCs make it easier for learners across the globe to work together on common goals. Instead of having to physically meet one another, online collaboration creates partnership among learners. While time zones may have an effect on the hours that learners communicate, projects, assignment and more can be completed to incorporate the skills and resources that different learners offer no matter where they are located.

VI. Distance and collaboration can benefits learners who may have struggled with traditionally more individual learning how to write.

3.5 Different kinds of MOOCs

bMOOCs: If MOOCs are imbedded into traditional classroom activities in a blended learning mode, the respective MOOCs are labeled as bMOOCs.

CMOOCs: The connectivist MOOCs (cMOOCs), which are based on connectivism and connectivist theory of the learning with the network developed formally. CMOOCs emphasis connected, collaborative learning and the courses are built around a group of like-minded individuals, who are relatively free from institutional constraints.

XMOOCs: xMOOCs is content based MOOCs which fellow a more behaviorist approach. This is based on traditional model of learning. XMOOCs use recorded lectures, self-assessment quizzes and requires completion of small tasks. Courses of xMOOCs are basically based on interactions media, such as lectures, videos and text. XMOOCs are being very popular due to its characteristics various companies and government launched their programs to run xMOOCs such as Udacity, Edx Swayam etc.

3.6 MOOCs and librarians

Library users and library staff including the librarians can benefit from MOOC because of their shared common goals. Librarians should accept all learning as a legitimate for professional's development. Academic librarians now need to reach out to MOOC

developers and offers their support in developing and delivering learning opportunities. This needs to be done after careful study of what would cost the library in terms of time, human resources, budget, etc. At present, many libraries are thinly stretched in terms of resources. Under such situations librarians should not get involved in MOOCs development support as it may negatively affect the libraries ability to serve its primary users. Atleast, they should take care that their involvement in MOOC related processes does not affect their traditional users and services, which is currently their main focus area. Librarians will have to play multiple roles for MOOCs point of view. They will have to balance their functions keeping in mind the primary users who are still interested in visiting the library, and the MOOCs users who expect the resources to reach their devices. Some of the roles identified can be mentioned as under.

- a) Guide – Librarians gives learners what they want and need, with as arsenal of technological tools.
- b) Access Provider – building, curating, and sharing resources to help learners whatever they may be, without any barriers or boundaries. These librarians work with authors, scholars and other content providers to make resources available as openly possible.
- c) Creator – Librarians create large-scale, small-scale, or just right formalized courses for their users across a wide spectrum of topics and varying degree of focus. These creations can be merged with or aligned with information literacy modules for a much wider reach.
- d) Instructor – New platform and methods of offering learning can extend how librarians instruct those they serve. These new environments will encourage librarians to capture and more knowledge and package it for anywhere, anytime learning.

Librarians can be seen as matchmakers, since they hook up the open access alternatives and materials with faculty and students. Steven J. Bell, Associate University Librarians at Temple University, advised librarians to design situation for patrons to collide with collections. He said that the more librarians can do to boring people and things into close proximity, the more likely patrons will be motivated to interact with them. Rick Anderson, Associate Dean for scholarly Utah,

noted that access to digital library products and services normally is restricted to enrolled students and faculty according to vendor license changes in those practices, and also predict that MOOCs will put increasing pressure on Open Access polices to enhance their role with mandates.

3.6.1 Libraries and MOOCs

Libraries can be said a social institution due to services providing by it. Libraries are serving human by providing information in both physical as well as electronic form using Electronic services libraries providing faster reliable and best access to the users than before, moving towards new Era, MOOCs is being very popular among librarian these services are increasing their user rapidly. Academic libraries provide all the data related to their courses running in host institution. The participation of libraries in MOOCs are fallen into the following three categories: copyright, clearance and locating alternative such as creative common materials and other free sources; course production; and development of polices. Some other possible areas include archiving class materials, curating user-generated content such as forum discussion and student projects providing the leadership and teaching of information literacy to the users. Copyright clearance includes the permission, licensing, negotiation and the fair use of determination. Some libraries of the world are engaged very much in order to production of courses and the institutional efforts.

3.7 Areas of Application of MOOCs in LIS Profession

The LIS profession will be required to reorient itself in that setting to meet the emerging new demands of students, faculty and researchers. In this context, LIS Professionals need to be skilful at enabling and fostering change. MOOCs may help in improving the quality of LIS Education. Some of the areas of application of MOOCs in LIS

Profession are as follows.

- I. Theory of Library and Information Science: The practical application of library and information science is based upon 75 years of critical theory and thought. MOOCs give an opportunity for LIS schools to collaborate in

developing latest theories in LIS profession. So that gives an opportunity for students to learn new critical theories from best teachers irrespective of geographical location. Also gives insights into how such theory can be incorporated into actual LIS research and practice.

- II. ICT Applications for Libraries: New user demands will impose LIS professionals to adopt a higher degree of ICT tools. In this context, LIS Professionals need to be skilful at enabling and fostering change. Adopting and harnessing ICT become essential. Maintaining relevance and monitoring trends in technology will play the major role in this context. It is imperative for LIS professionals to keep themselves updated and prepared to face the challenges posed by advances in ICTs and opportunities offered by online learning.
- III. Practices in LIS: opportunities librarians have for gaining hands-on experience with particular technologies that can help improve their reference and instructional services delivery. There is a broad range of course offerings in areas of computer science for librarians with an interest in developing technological expertise. There are also several business and management courses that may satiate the need for librarians in managerial positions who desire a more theoretical approach to human resources management, organizational behavior, or strategic thinking.
- IV. Continuing of Education: MOOCs provide great opportunities for LIS students and teachers to supplement their educations. For students, MLIS provides a strong basis for a career in libraries, but there is a limit to how much professors can teach in a two-year program and will get a chance to learn additional tech skills before graduation for current student. MOOCs apart from helping students would also help in the continuing education of working teachers and librarians. It supports the professionals to continue education for their promotion and enhancing the knowledge and get a hold on the areas in weak.
- V. English Communication/General Learning: MOOCs provide a good platform for working teachers and librarians to learn English

communication and general things of the society. To survey in the working organization English communication and general things are inevitable. Because learning of English communication and general things of the society leads to understand others views and expressing your own views in a clear and concise manner is a crucial skill that needs to be developed.

- VI. Students Centric Learning: Teachers can also assign students to join different Massive Open Online Courses (MOOCs) and that they are to complete those courses together in a specific amount of time. The objective of this is to later on share their different knowledge with each other and gain from each other. They can also share their final projects with one another and create a discussion out of the activity. This will not only create independent learners, but it will also create students with high creative and critical thinking skills.
- VII. Helps in Training and Motivation: Education and training are two sides of the coin of professional development in any field. In fact, in order to train the working library professionals, various training programme were initially developed and then expanded and converted into degree courses. The growth of formal education in LIS is an outcome of the need of training for working librarians.
- VIII. Best Tool for Board of Studies: MOOCs are the source kit of knowledge. LIS professional experts go through various MOOCs scattered in the globe and read the content structure of them. This has become a good tool for the BOS members of the face to face education institutes to incorporate those contents and formulate the syllabuses.
- IX. Communication Skills: MOOCs provide a good platform for working teachers and librarians to learn English communication and general things of the society. To survey in the working organization English communication and general things are inevitable. Because learning of English communication and general things of the society leads to understand others' views and expressing your own views in a clear and concise manner is a crucial skill that needs to be developed.

3.8 Some of the courses provided by the MOOCs to LIS professionals.

Sr.no	Course title	level	Duration	credits	Offered by	Course type
1	Libraries: An introduction	Diploma	12 weeks	4	IGNOU	Core
2	Library Information and Society	Postgraduate	12 weeks	4	IGNOU	Core
3	Communication skills (Library and Information science)	Postgraduate	12 weeks	4	IGNOU	Core
4	Management of Library and Information Center	Postgraduate	12 weeks	4	IGNOU	Core
5	ICT in libraries	Postgraduate	12 weeks	4	IGNOU	Core
6	ICT in libraries	Diploma	8 weeks	4	IGNOU	Core
7	Information Sources and Library Services	Diploma	12 weeks	4	IGNOU	core
8	Digital Library	Postgraduate	15 weeks	5	CEC	Elective
9	KOHA Library Management System	Undergraduate/postgraduate	12 weeks	2	AICTE	Elective

10	Library Automation and Digitization	Diploma	12 weeks	4	IGNOU	Core
11	Sr. Secondary: Library and Information Science	School	24 weeks	10		Core

Chapter IV

National and International Level MOOCs Programs

4.1 MOOCs in India at a Glance

Education plays a vital role in the development of any country. In this era of digitization when India is transforming into digital nation. The digital way of learning through MOOCs is becoming very popular and playing a key role in spreading education. In India over 2 million learners are taking advantage of MOOCs and have enrolled for the various courses. Ministry of human resources development of Government of India has started various initiatives and programs for e-learning like Swayam. Swayam is a big mile stone in the path of MOOCs. Swayam is an e-campus to learners. Swayam is a program initiative by government of India and designed to achieve the three cardinal principles of education policy viz, access quality and equity. Swayam offered various under graduate, post graduate, school education, out of school education, free of cost to learners. At the end of each course, there will be assessment of the student through proctored examination and the marks/grades secured in this exam could be transferred to the academic records of the students. UGC (University Grant Commission) has already issued the UGC regulation 2016 the advising universities to identify courses which can be transferred on the academic records of the students on Swayam. Swayam provide pretty good learning environment for the learner they have their own app which runs an android and IOS. Through television learners can also get knowledge of their subject of interest. Apart from Swayam various other prestigious institutions like Indian School of Business, Jawaharlal Nehru University, Indian Institute of Technologies and many others are providing MOOCs facility to facilitate the learners of every subject field. Many institutions have their own websites as well as mlearning (Mobile-Learning) apps on which they are providing services.

The University Grants Commission (UGC) along with the HRD (Human Resource Development) Ministry has launched the MOOC program in India for higher secondary, bachelors and masters degrees. This will cover a wide range of subjects that may or may not be taught in regular campus studies.

A new portal for MOOCs named ‘Study Webs of Active-Learning for Young Aspiring Minds’, in short, SWAYAM, is said to present students with an opportunity to study anything from a list of 2000 courses out of which 200 are currently available for registration. Audio-visual medium, illustrations, research and case studies with self-assessment are few of the mediums chosen to approach the study of these courses.

4.1.1 MOOCs National Coordinators

S. No	National MOOCs Coordinator	Sectors
1	University Grants Commission (UGC)	Non-Technology Post Graduate Degree Programmes
2	NPTEL	Technical / Engineering UG & PG degree programmes
3	Consortium for Educational Communication	Non Technology Under Graduate Degree programmes
4	IGNOU	Diplomas and Certificates Programmes
5	NCERT	School Educational Programmes from Class 9th to 12 th
6	NIOS	Out of school children Educational Programmes from Class 9th to 12 th
7	IIM Bangalore	Management programmes
8	NITTR, Chennai	Teacher Training programme.

4.2 MOOC PLATFORMS IN INDIA

Many initiatives have been taken by the Indian government to provide and support concept of open education. Initially, the objective was to provide open resources in terms of repositories, libraries, educational media files, e-books, etc. These were made accessible for everybody. Some of the efforts in this direction started as National Digital

Repository of IGNOU, Sakshat providing e-content, Shishya for XI-XII Standards by CBSE Board, and Vidya Vahini integrating IT into the curriculum of rural schools by providing interactive training and developmental communication. Most of these initiatives started with establishing dedicated department to make education reachable to many learners as much as possible. Some of the common names in this path are, Education and Research Network (ERNET) connecting various colleges and schools by providing network connectivity; EDUSAT, a satellite launched for education in India, Consortium for Educational Communication (CEC), use the power of television to act as means of educational knowledge dissemination; Information and Library Network Centre (INFLIBNET) autonomous Inter-University Centre for connecting university libraries, also it has started several other programs. These all are the initiatives towards open education and education with Information technology still MOOC was out of their reach. Moreover, the idea of online courses came into play and India started to work for this. In 2013, government launched e-PG Pathshala run especially for postgraduate course and it is managed by INFLIBNET of UGC. It is more of a repository of e-content and assessment than a MOOC. Also, two more course providers are Apna Course and myBskool.com, both are run in India. But both of these are being run for profit and clearly, providing open education is not among their motives. Therefore, government set off to offer online courses on developing their own platforms. Currently, in India only a handful of universities and institutes have the facilities to start or support such initiative. Some of these organization and their efforts are as follows-

A. NPTEL stands for National Programme on Technology Enhanced Learning. It is a project funded by MHRD, initiated in 2003. It is a joint initiative of seven Indian Institute of Technology (IITs) and Indian Institute of Science (IISC) for offering courses on engineering and science, initially. Now, NPTEL has started online course in computer science; electrical, mechanical, and ocean engineering; management; humanities, music etc. It offers free course with nominal fees for certification. Anybody from anywhere can join their course. NPTEL uses the open-source technology for offering courses. The courses are powered by Google's open-source platform Course Builder that runs on App Engine and Compute Engine. Also, it offers course content mainly in video lectures prepared in a conventional classroom environment, while some may also use slides to share

the content. Already, NPTEL is the largest single repository of technical courses in the world in the streaming video format and with text meta data for videos, text transcription and subtitling, and possible conversions to all Indian languages. Initially, its courses were having a minimal interactivity and uneven quality, even then the courses ceased to attract a large number of learners. Currently, it is offering more than 1200 courses and is planning to launch 600 more courses on various topics for the period 2016-2020. With the new course, they are looking to

B. mooKIT MooKIT is a lightweight MOOC management system built entirely using open-source technologies by Indian Institute of Kanpur (IITK), in 2014. It is a powerful system that can be used to offer online courses at any scale, from micro to massive. It is designed to offer cMOOC (connectivist MOOC). It has been used in 15 courses with about 100,000 registered learners. It is specially designed to solve the problem of dealing with low-bandwidth and low-computing power situations using existing MOOC platform. To solve the problem, mooKIT provides an indicator that shows current bandwidth of the connection, similar to the bars on a mobile phone. It gives a visual indication of bad connection to the learner and they can use other content delivery options that mooKIT provides – for example, stream only audio and play it in sync with the slides, which is often very close to the video experience. If the bandwidth is still low for that even, learner can receive a call on the phone and listen to the audio from there using the calling control provided on the interface. This feature is very helpful for learners belong to rural areas not having smart phone, laptop, internet connectivity, high bandwidth. They just need a dumb or basic phone. One more special feature of mooKIT is the support of a very powerful analytics interface. Along with the instructor, it also allows the learner to view their course activities, which is not commonly provided in any other platform. It is built entirely using open-source technologies, and the core engine runs on the MEAN stack that uses java script based technology, making it extremely scalable. It offers four types of solutions based on the requirement- mooKIT Standard: It is used to run a single course. It does not require local streaming of video, but YouTube videos can be used. Example, mooconmooc.org. MooKIT Enterprise: It is suitable to run a large number of online courses. Users are a part of a portal and will be able to enroll in the courses they're interested in. Example, mooc4dev.org, and agmoocs.in. MooKIT Replicated: It is suitable for low bandwidth

areas, by allowing the content to be cached on local servers. The servers will sync periodically for updates. MooKIT Personal or Mobi-mooKIT: It can run on the devices with low computation and low storage capability as of mobile devices. It does not provide forum or social networking due to the device constraint

C. IITBombayX IITBombayX is a non-profit MOOC platform developed by IIT Bombay using the open-source platform Open edX, in 2014. It was created with funding from National Mission on Education through Information and Communication Technology (NME-ICT), Ministry of Human Resource Development (MHRD), Government of India. Currently, it is offering 63 courses on different subjects from multiple disciplines. Some of the courses provided aombayX is implemented as the basic version of the blended learning MOOC with the help of edX organization. Blended learning is a combination of both face-to-face class room learning and online education methods. This approach is adopted to combine the direct supervision in face-to-face learning and academic freedom with the self-paced learning using the online courses. Moreover course completion is not optional but compulsory. This model is named as “Blended Learning - MOOC Model of IIT Bombay (BLMM)”. In this system prime universities from India are offering MOOC courses to Indian local college learners.

D. SWAYAM stands for “Study Webs of Active Learning for Young Aspiring Minds”. It is a MOOC platform MOOC launched by the Ministry of Human Resource Development (MHRD), government of India, to bind online and offline education together. It is started with an expectation of launching 2,000 courses, to make it largest course catalogue, among all provided so far. For SWAYAM an independent platform is developed. Learners across the country can get credit for MOOC courses offered on SWAYAM, and they can get their credits transferred and recognized at the parent institution, that was not possible in conventional MOOC platforms. In a talk, Dr. Pathak (IITK) mentioned that the mostly the learner drop out from the course as they find the courses either advance or not suitable to help them in scoring good grades in their university exam. Therefore SWAYAM is a right effort of credits using the course that will definitely encourage the learners to complete the course and get their certificate. For SWAYAM, a credit framework has

been finalized that would allow the transfer of credits between institutions. An academic institution in India can offer up to 20% of its catalogue in a particular program via SWAYAM. Currently, SWAYAM offers the courses for school, certificate, diploma, undergraduate, and post graduate. The responsibility of delivering courses is assigned to six institutes based on their type, such as NCERT and NIOS for offering school education, IGNOU for out of school learners, CEC for under-graduate education, UGC for post-graduation education, NPTEL for engineering, and IIMB for management studies. Though much of the course content for SWAYAM is the same content that has already been created for NPTEL, which is to be re-purposed for SWAYAM. Also, the content or videos created for this platform will be available on a platform called e-Acharya that already hosts educational video content created by MHRD. So, SWAYAM is promoting the best use of the resources, which is already a very costly affair.

4.3 MOOCs in the World

MOOCs are being very popular as a global phenomenon. More than 200 universities are offering the over 2000 courses via MOOCs and more than 20 million students are enrolled in them. Various universities and institutions are active members of MOOCs even they established their own platform for providing MOOCs. EdX (<http://www.edx.com>) edx is a non- profit MOOCs platform founded by joint cooperation of two prestigious institutions MIT (Massachusetts Institute of technology) and Harvard University with an initial investment of \$16 million. Currently, edx is providing courses in various subject fields like chemistry, public

Health, computer science etc. Coursera (<https://www.coursera.org>) this is a profit taking company. This company is started with an initial investment of \$22 million. There are four universities are participating in courser namely Stanford University, Princeton

University and Universities of Michigan and Pennsylvania. Currently there are more than 200

Courses are running on them. UDACITY (<https://www.udacity.com/>) is another for-profit start-up founded by Sebastian Thrun, David Stavens and Mike Sokolsky with \$21.1 million investment from venture capitalist firms, including Charles River Ventures and Andreessen Horowitz. Udacity currently offers 18 online courses in computer science, mathematics, general sciences, programming and entrepreneurship.

4.4 Some International platforms of MOOCs

Canvas Network

Canvas Network specializes in professional development classes for teachers, school administrators, and other education leaders. Topics include leading and applying assessment in student affairs, supporting women in STEM fields, and research data management for librarians. Students can access MOOCs in English, Chinese, Portuguese, and Spanish.

Like other platforms, Canvas Network provides predominantly free and self-paced online classes. Educators benefit from open licensing options that allow them to freely share and reuse content as well as integrate third-party tools for their own purposes. This perk enables teachers to design and run their own MOOC to bolster traditional classroom instruction.

Cognitive Class

Formerly known as Big Data University, Cognitive Class is an initiative by IBM to spread data literacy through free classes for students and experienced IT professionals alike. Users can pursue coursework at their own pace with no time restrictions for completion. These MOOCs cover individual topics like Python for data science, reactive architecture, and digital analytics and regression.

Alternatively, learners can enroll in more general learning paths, taking a series of classes on broad subjects like deep learning and Scala programming. Cognitive Class goes beyond pre-recorded lectures, enabling students to practice what they learn through a virtual lab environment. In lieu of a certificate, candidates can earn verified digital badges, which reflect shareable and industry-wide forms of recognition.

Coursera

Coursera was founded in 2012 by two Stanford professors and is one of the largest massive open access course providers in the world. The platform partners with 190 companies and universities to provide fully remote and self-paced learning opportunities leading to digital certificates at the undergraduate, graduate, and postgraduate levels. Coursera boasts a high satisfaction rate, with 87% of users reporting career benefits.

The catalog contains over 3,900 courses and specializations that span areas like business, computer science, physical science and engineering, arts and humanities, and language learning. Coursera also offers affordable online degrees through its partner schools. Students can earn a master of science in accountancy from the University of Illinois or a global master of public health from Imperial College London.

edX

Created as a joint venture between Harvard and MIT, edX is another leading MOOC platform. Students can access more than 2,500 courses from 140 higher education institutions covering popular subjects like data science and the humanities. The platform also offers computer science classes in Python, front-end and full-stack development, and cybersecurity.

edX uses an open-source learning system that allows technologists and educators to augment their MOOCs freely, adding tools that support the specific needs of their students. In addition to professional certificates, learners can earn college credits through the MicroBachelors and MicroMasters programs. edX also delivers full online graduate degrees, including master's credentials for supply chain management, nutritional sciences, and marketing.

FutureLearn

FutureLearn is a massive open online course provider founded in the United Kingdom in 2012 by 12 university partners, including King's College London and the University of Leeds. Students can complete one of 418 short courses to learn new skills in areas like digital product management, ecology and wildlife science, and the future of globalization. They may also obtain microcredentials from leading universities and major companies.

Additionally, FutureLearn provides low-cost online academic programs that enable candidates to earn a bachelor of arts in international business or a master of science in cybersecurity. Unlike other platforms, FutureLearn structures its courses through narrative, with weekly to-do lists that help students stay on top of coursework. Learners can also access one-on-one support from a network of tutors.

iversity

Based in Berlin, iversity partners with a variety of companies, nongovernmental organizations, and universities across Europe to deliver more than 60 courses in English, German, and French. The platform maintains industry standards with the help of web

designers and UX developers, ensuring the highest levels of usability and student engagement. The organization also offers corporate training services through its "iversity for Business" initiative.

Students can access traditional MOOCs or fast-paced "Espresso" classes in areas like data-driven marketing, international labor standards, and climate change and health. Iversity also offers intensive "Pro" courses that require candidates to pay a tuition price. Students can save money by bundling "Pro" classes.

Kadenze

Kadenze was launched in 2015 as a for-profit company with the support of 18 institutional partners, including Princeton University and the Rhode Island School of Design. This MOOC provider focuses on music, visual arts, creative technology, and other fields of study that lagged behind due to the prominence of STEM education. Students enjoy self-paced, mobile-friendly content that lets them showcase their skills with professional portfolio tools.

Users can access individual classes that cover topics in cinematic storytelling, project management for designers, and sound production in Ableton. Although Kadenze offers most of its MOOCs for free, students can pay to access in-depth feedback and other premium content. Kadenze also offers curated programs that enable learners to specialize in a subject.

Khan Academy

Khan Academy bases its organizational mission on the belief that education is a human right. To this end, the platform offers entirely free online courses that integrate instructional videos, practice exercises, and a personalized learning dashboard. Unlike many other MOOC providers, Khan Academy largely supports K-12 students, with content for pre-algebra, English language education, AP chemistry, and U.S government and civics.

Learners may also access preparation materials for standardized tests, including the SAT, ACT, GRE, NCLEX-RN, and even the Praxis exams. Furthermore, Khan Academy offers resources for teachers and parents, who can assign standards-aligned course materials and

track student progress. Through networking tools, users may connect with students and teachers across the globe.

Udacity

Udacity is a for-profit MOOC platform that focuses on career development through technical and vocational online courses. Topics span six areas of study, which include data science, cloud computing, autonomous systems, and artificial intelligence. Students can also take programming and development classes in C++, Blockchain, and Android developer.

Additionally, working professionals may complete MOOCs that help them gain product management and marketing analytics skills. Beyond diverse course offerings, Udacity delivers comprehensive career services, including personalized job coaching, resume writing guidance, and LinkedIn best practices. The Udacity Talent Program lets users create detailed profiles and connect with major employers like Google and Mercedes-Benz.

Udemy

As the largest online learning provider, Udemy offers over 150,000 courses in 65 languages. While students can take a variety of free courses, many MOOCs require a fee. By paying for premium content, users also gain access to features like direct messaging, Q&A, and certificates of completion.

Topics cover 11 broad categories, including office productivity, health and fitness, and photography. Students can also complete finance and accounting classes, learning the key elements of Bitcoin and blockchain or developing global market analysis skills. Additionally, Udemy provides personal development content that enables users to manage stress, improve their self-esteem, and cultivate meaningful relationships.

The sheer variety of MOOCs allow you to use these courses to supplement a college education or gain entirely new skills and knowledge. MOOCs also benefit working professionals who want to learn specialized and technical competencies to advance their careers. Lastly, these online classes are a great tool to network with other learners and industry experts worldwide.

Chapter V

Data analysis and interpretation

Questionnaires were sent to librarians of various academic institutes of Goa in physical form as well as through Google forms. Out of which 16 responses were received by the researcher. Based on the responses of the respondents the following data analysis has been done.

5.1 Total number of respondents

Table 1: Gender wise distribution of respondents

Category	Male	Percentage	Female	Percentage	Total	Percentage
Librarians	12	75%	4	25%	16	100%

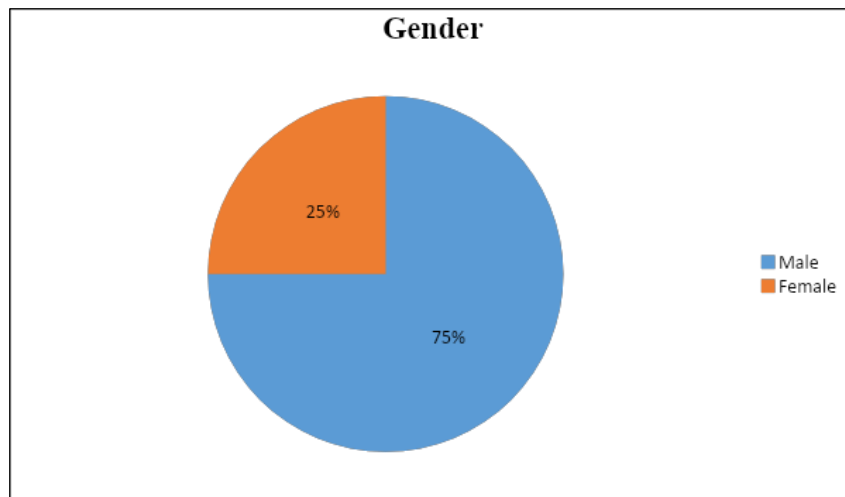


Figure 1: Graphical Representation of data in table 1

Table 1 shows the gender wise distribution of respondents from different college libraries of Goa. As the above figure reveals that majority of the respondents are male i.e., 12(75%) and the female respondents were 4(25%).

5.2 Average age of the respondents

Table 2: Age of the respondents

Sr. no	Age	Frequency	Percentage
1	25-30	4	25%
2	30-35	3	18.75%
3	35-40	0	-
4	40-45	1	6.3%
5	45-50	3	18.75%
6	50-55	4	25%
7	55-60	1	6.25%
	Total	16	100%

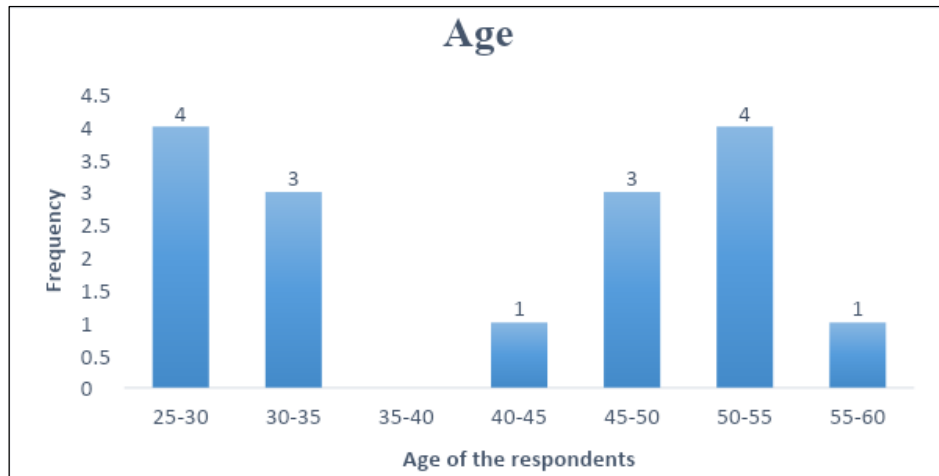


Figure 2: Graphical representation of data in table 2

Age group of 25-30 and 50-55 has the highest response of 4(50%) Similarly age group of 30-35 and 45-50 the response of 3(18.75%) and in the age between 40-45 and 55-60 age there were 1 respondent each. With this we can ascertain that the average age of the librarians in academic collages of Goa is between 40 to 45.

5.3 Participation in MOOCs

Table 3: Librarians participation in MOOCs

Yes	Percentage	No	Percentage	Total	Percentage
13	81%	3	19%	16	100%

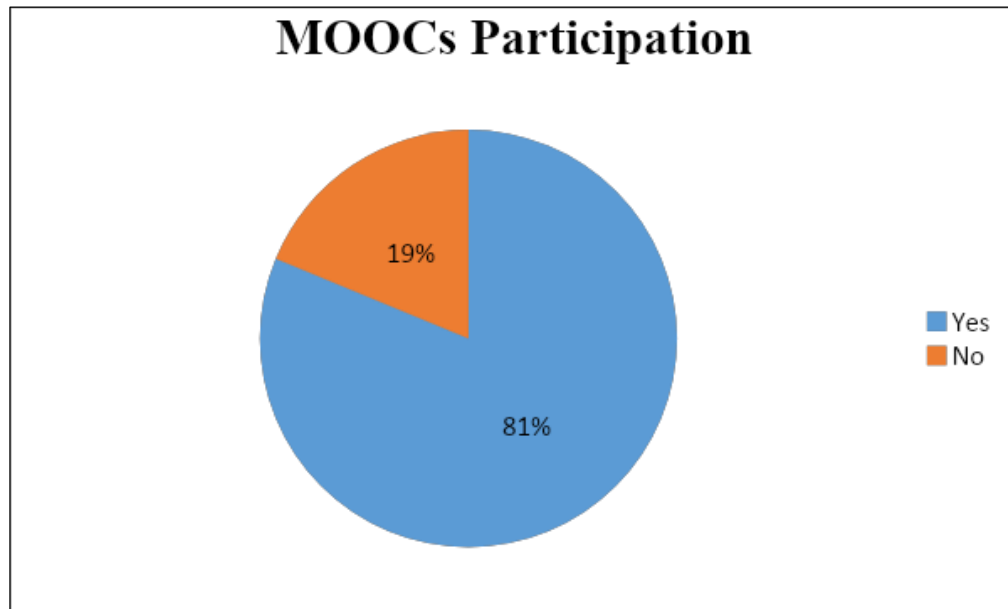


Figure 3: Graphical representation of data in table 3

A question was asked to the respondents whether if they have participated in any MOOCs courses and majority of 13 (81%) said yes while only 3(19%) respondents had a negative response.

5.4 Benefits of MOOCs to LIS Professionals

Table 4: Benefit of MOOCs Courses

Sr. No.	Options	Frequency	Percentage
1	Helps in learning from experts in field	12	75%
2	Efficiency of online learning	12	75%
3	Multiple options to choose from	9	56.25%
4	Simultaneous from different courses	9	56.25%

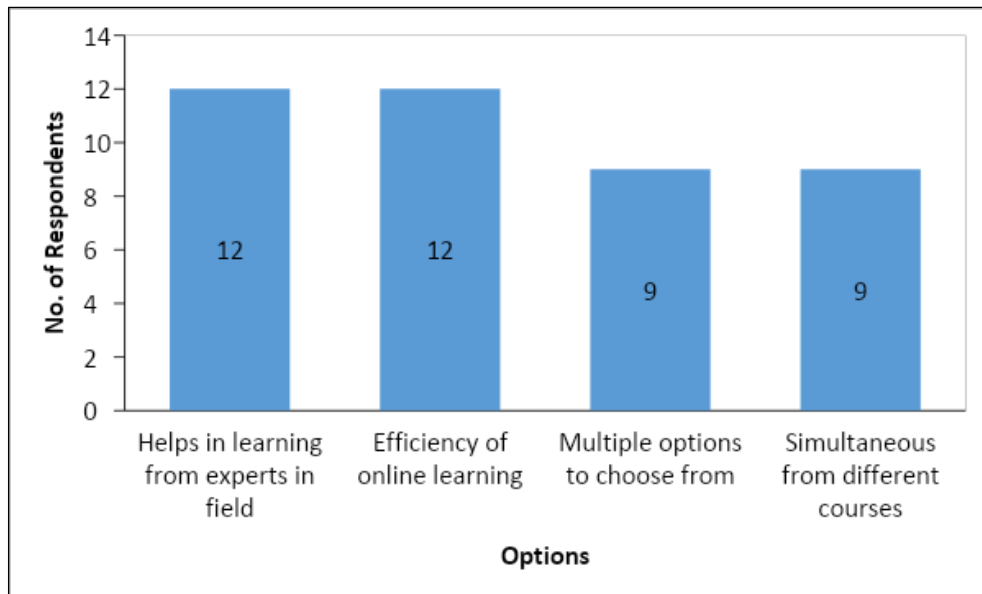


Figure 4: Graphical representation of data in table 4

The respondents were given the option to choose more than one indicator. The above figure indicates the benefit of MOOCs in LIS professionals. Majority of 12(75%) the respondents said that MOOCs help in learning from experts in field along with Efficiency of learning. On the other hand, with the same number 9(56.25%) librarians that they find multiple option of courses to choose from and simultaneous enrollment for various courses beneficial to LIS professionals.

5.5 Skill development of MOOCs Courses

Table 5: Skill development among LIS Professionals

Types of Skills	Frequency	Percentage
Communication skills	5	31.25%
Computer skills	8	50%
Management skills	9	56.25%
Soft skills	9	56.25%
Any other skills	3	18.75%

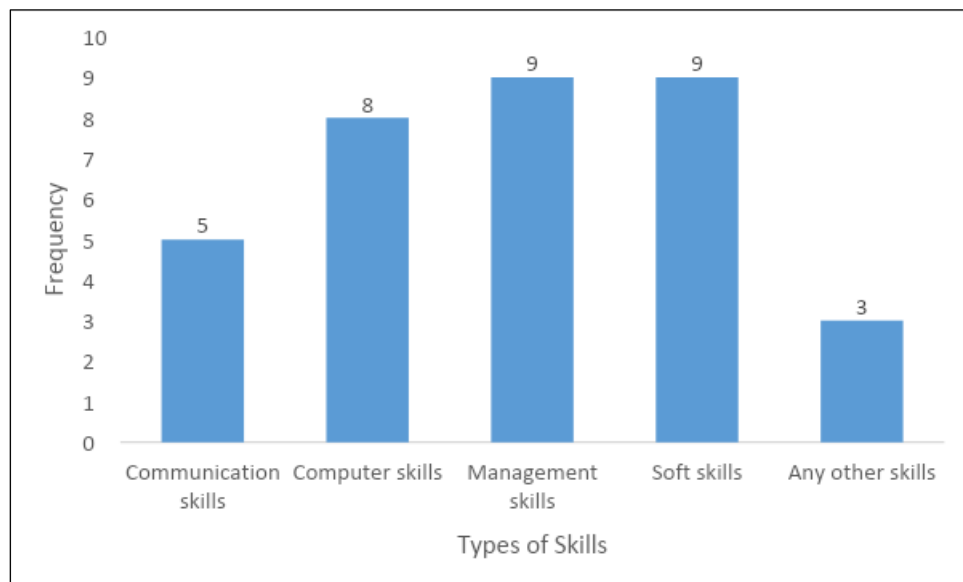


Figure 5: Graphical representation of data in table 5

The respondents were given the option to choose more than one indicator. As it can be seen in the above figure majority of the respondents 9(56.3%) have acquired management skills and soft skills through MOOCs. Followed by respondents who opted for computer skills 8 (50%). A total of 5 respondents acquired communication skills through MOOCs and the remaining 3 respondents choose the other skills option.

5.6 Respondents awareness about MOOCs

Table 6: MOOCs Awareness

Options	Frequency	Percentage
Yes	11	68.75
No	5	31.25
Total	16	100

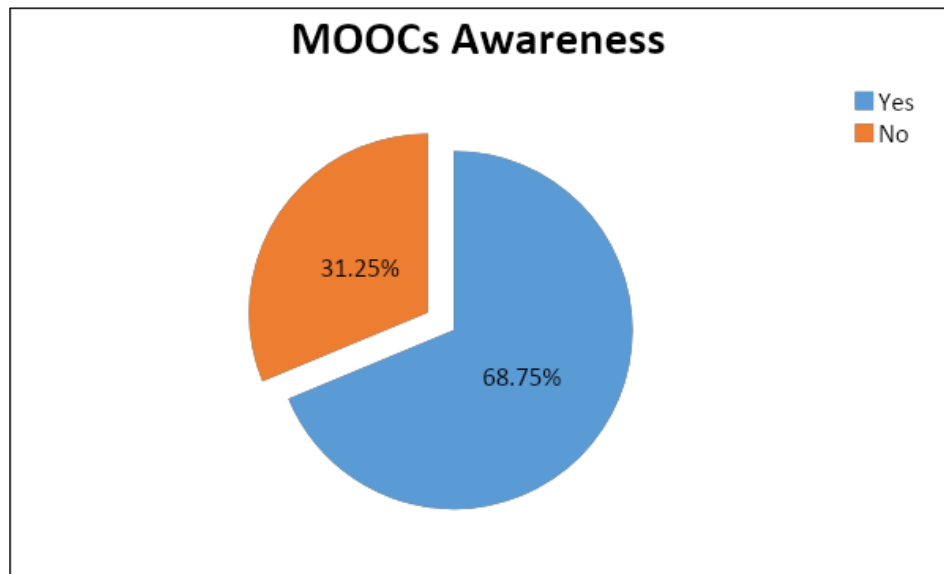


Figure 6: Graphical representation of data in table 6

It is clear from the above figure that majority of the respondents are aware of MOOCs. This figure reveals whether the librarians are creating awareness about MOOCs courses among students. Majority of the librarians said that they are making students aware about the MOOCs courses. Whereas few of them said that they are not making any awareness about the MOOCs courses among the students.

5.7 Means of creating awareness in academic institutions.

Table 7: Means of awareness creation by librarians about MOOCs

Sr. No	Awareness Platforms	Frequency	Percentage
1	Seminars	1	6.3%
2	Conferences	0	0
3	Workshops	1	6.3%
4	Orientation programs	11	68.6%
5	Advertising	3	18.8%
Total		16	100

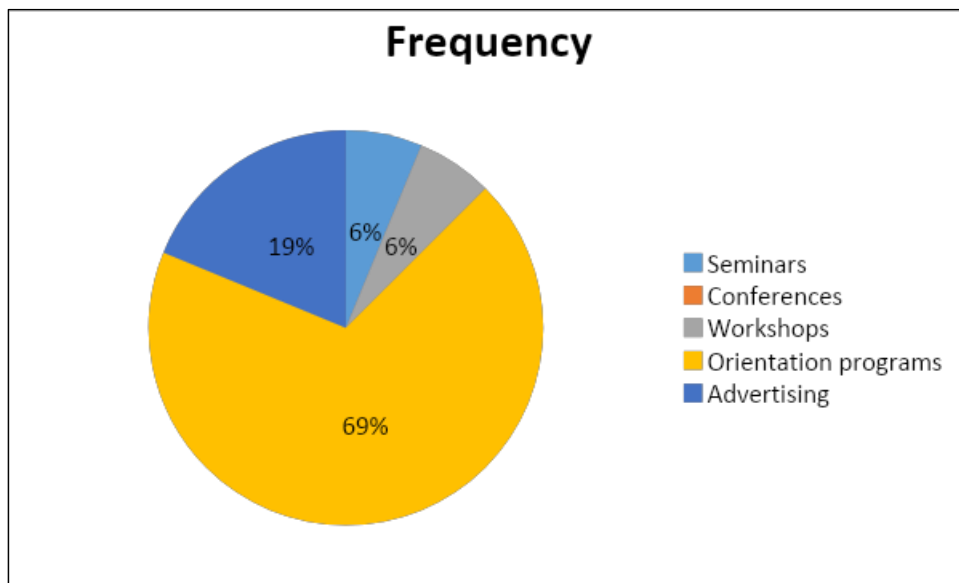


Figure 7: Graphical representation of data in table 7

In the above figure indicates how librarians can create awareness about MOOCs in academic institution. As per the respondents view most of them with 11(68.8%) said that they create awareness through Orientation programs in the institution. Followed respondents who preferred advertising to create awareness and about equal number of respondents (i.e.) 1(6.3%) opted for workshops and seminars.

5.8 Likely factors for undertaking any MOOCs?

Table 8: Factors for taking up MOOCs

Sr. No.	Factors	Frequency	Percentage
1	Advancement and personal development	13	81.25%
2	Requirement for promotion	7	43.8%
3	Research	7	43.8%
4	Curiosity	9	56.25%
5	Any other	1	6.3%

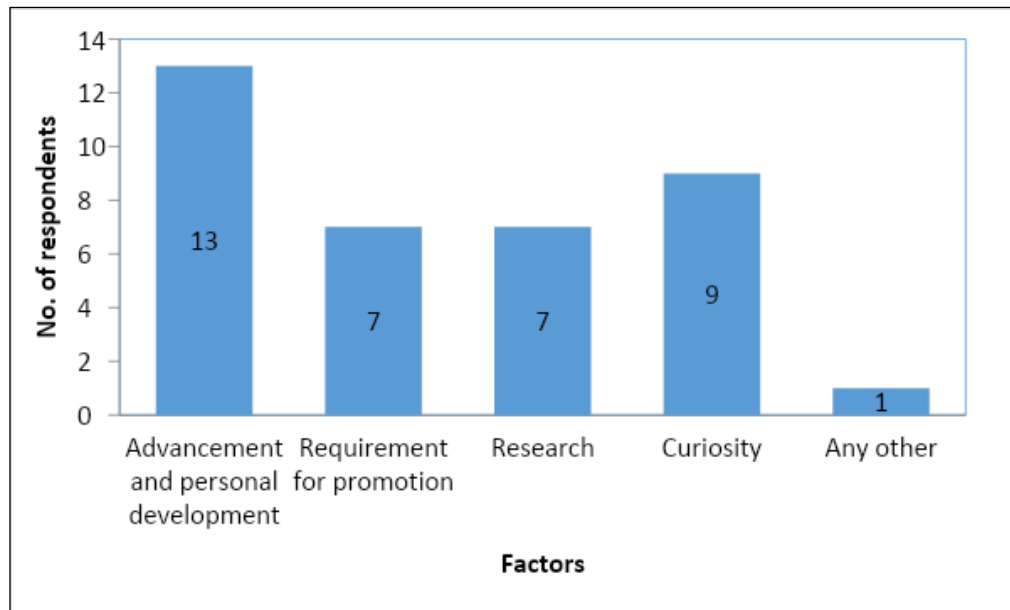


Figure 8: Graphical representation of data in table 8

The respondents were given the option to choose more than one factor.

In this figure the respondents were asked what was the most likely factors that made them enroll in the MOOCs Courses. Majority of 13 (81.25%) them said that advancement and personal development was the reason to enroll in MOOCs courses. Followed by 9 (56.25%) respondents opting for curiosity of learning via MOOCs and equal number of respondents choose MOOCs courses for Research and as requirement for promotion 7 (43.8%). While only 1 (6.3%) respondent choose any other factor.

5.9 Benefits for working professionals in taking up MOOCs

Table 9: Major Benefits

Sr. No.	Parameters	Frequency	Percentage
1	Helps in increasing professional knowledge and increase general competence	16	100%
2	Knowledge generation	6	37.5%
3	Broadens collaboration and networking	7	43.8%
4	Prepares for changing roles and responsibility	7	43.8%
5	Others	1	6.3%

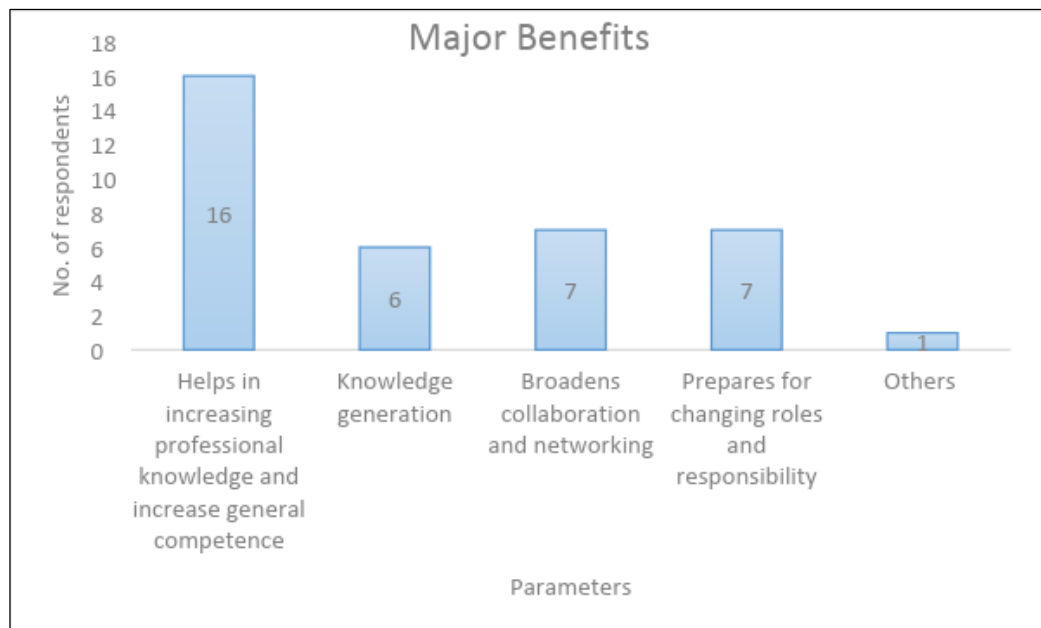


Figure 9: Graphical representation of data in table 9

The respondents were given the option to choose more than one factor.

As the figure reveals majority of the respondents were of the opinion that MOOCs helps in in increase professional knowledge and increase general competence. At the second spot came broadens collaboration and networking and preparations for changing roles and responsibility. 6 respondents said knowledge generation was their preferred option and only one respondent opted for other option.

5.10 Fields in MOOCs for Skill development

Table 10: MOOCs for personal development

Sr. No	Parameters	Frequency	Percentage
1	Advancement of web application such as web 3.O, semantics etc.	9	56.25%
2	Classification	4	25%
3	Library automation	11	68.8%
4	Library administration and management	8	50%
5	Research methodology	9	56.25%

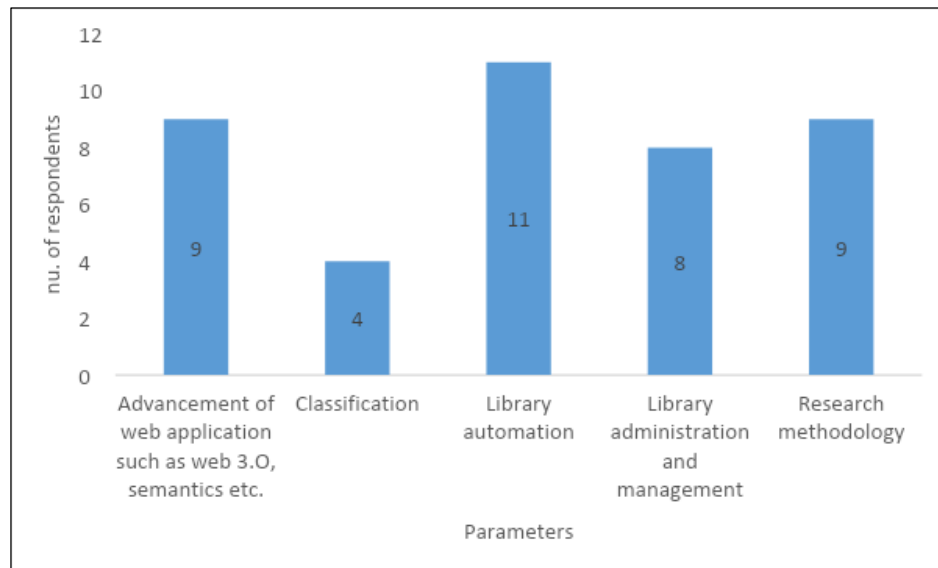


Figure 10: Graphical representation of data in table 10

The above figure shows the different components of libraries in which the respondents are interested in pursuing MOOCs courses. Majority of the respondents 11(68.8%) are in favour of taking Library automation course for their professional development. Followed by Advancement of web application and research methodology in equal numbers 9(56.25%). 8(50%) respondents opted for library administration and management and remaining 4(25%) choose classification.

5.11 MOOCs courses that can lead to skill development of LIS professionals

Table 11: Courses that develops the skills of Librarians.

Sr. No	Areas of MOOCs courses	Frequency	Percentage
1	ICT	8	50%
2	New content creation	1	6.2%
3	Library automation	4	25%
4	Research writing	3	18.8%
5	Consultancy services	0	0
	Total	16	100%

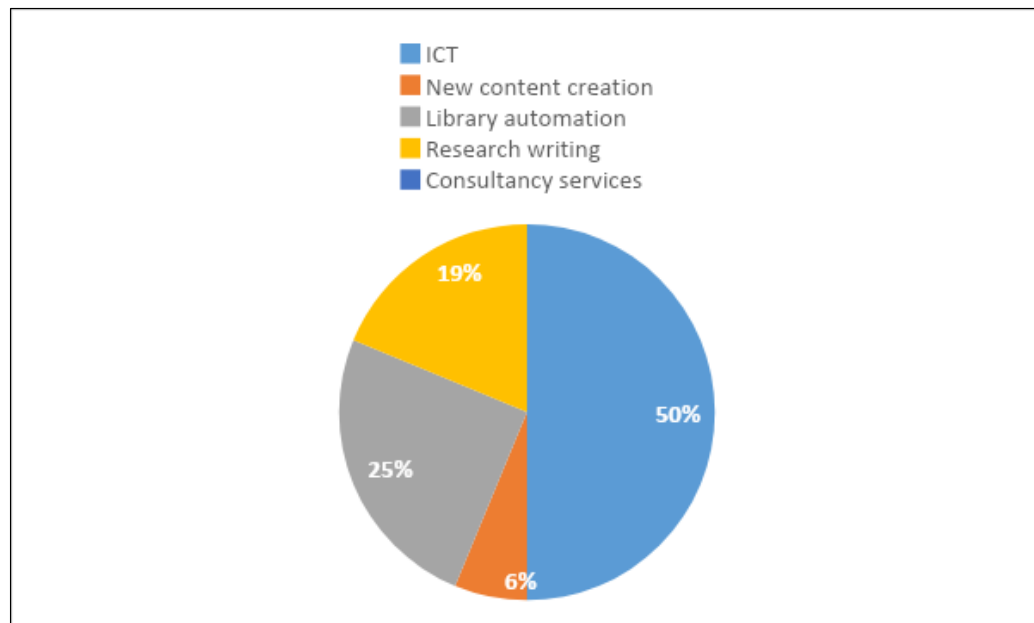


Figure 11: Graphical representation of data in table 11

In the above figure it can be seen that 50% of the respondents choose ICT, followed by Library automation with 25%, next was research writing at 19 % and the last being consultancy services at 6%.

5.12 Preferred mode of teaching in MOOCs

Table 12: Mode of learning from MOOCs

Sr. No	Parameters	Frequency	Percentage
1	Videos	3	18.75%
2	Self-assessment	0	0
3	Online group discussion	1	6.3%
4	Readily available reading material	0	0
5	All of the above	12	75%
	Total	16	100%

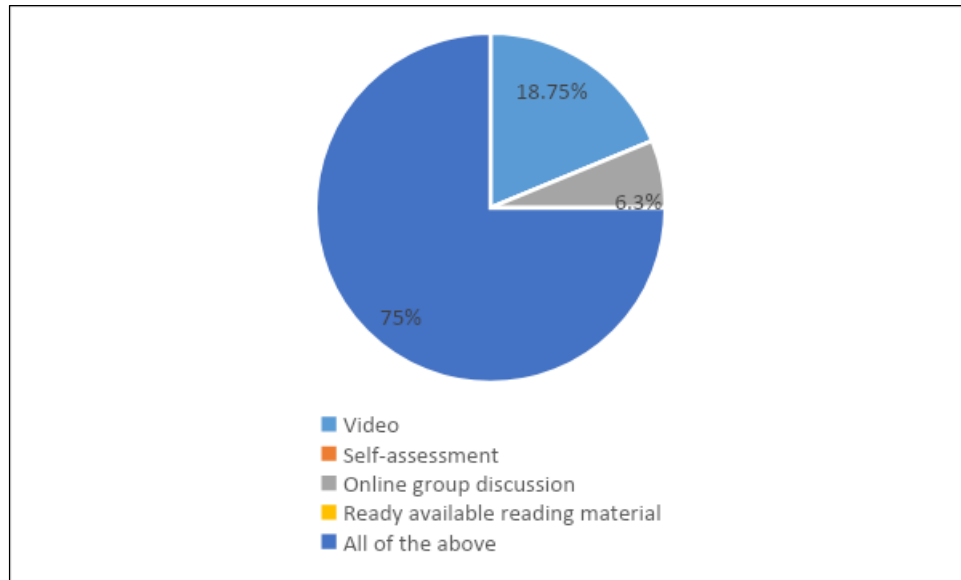


Figure 12: Graphical representation of data in table 12

In the above figure we can see that the majority of 12(75%) librarians preferred all the choices that were given to them eg. Video, self-assessment, online group discussion, readily available reading materials. Only 3(18.75%) said they were comfortable with videos and 1(6.3%) said online group discussion.

5.13 Satisfied with the manner of teaching

Table 13: How satisfied the librarians are with manner of teaching in MOOCs

Sr. No	Satisfaction Levels	Frequency	Percentage
1	Poor	0	0
2	Average	0	0
3	Good	4	25%
4	Very good	8	50%
5	excellent	3	18.75%
	Total	16	100%

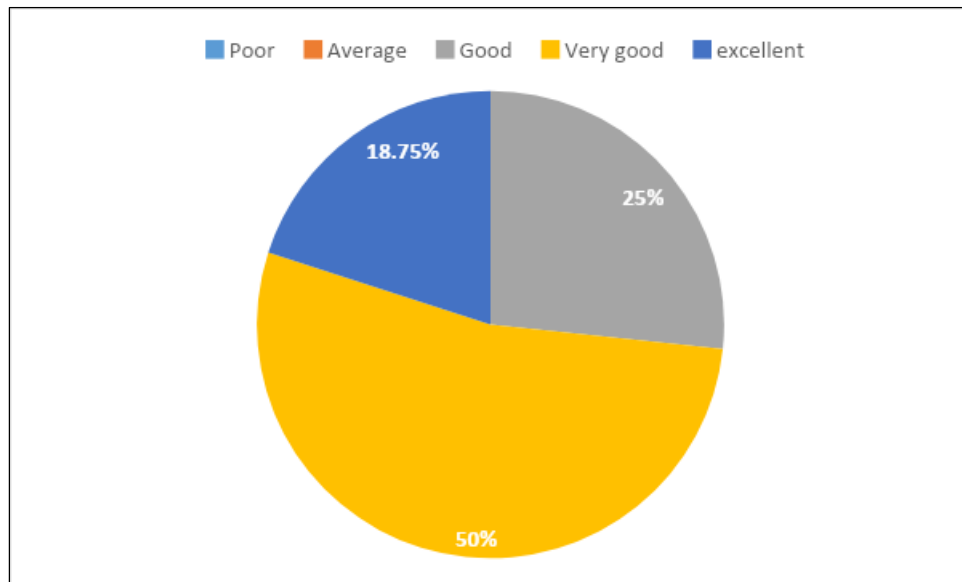


Figure 13: Graphical representation of data in table 13

Here the respondent had to rate from 1-5 where 1 was poor and 5 was Excellent. And in between was the average, good, very good options. As per the responses respondents they were satisfied with way of teaching. Half 8(50%) of them find the teaching very good, while 4(25%) found it good and only 3(18.75%) found it as good enough to understand what is being thought.

Hypothesis Testing

1. Library professionals in Goa are not aware about MOOCs courses
2. MOOCs courses are not beneficial for LIS professionals.

Both the hypothesis are rejected.

Chapter VI

Findings, Suggestions and Conclusion

6.1 Findings

1. Majority of the librarians who responded to this questionnaire were male with 12(75%) females with only 4(25%). This shows that more male librarians in academic colleges of Goa.
2. As far as the age of librarians is concerned there are librarians of all age groups in colleges of Goa. The average age of the librarians in academic colleges of Goa is between 40 to 45.
3. Among the librarians who responded to the questionnaire were aware about MOOCs courses. Out of 16(100%) librarians 13(81.25%) have participated in MOOCs other 3(18.75%) have not participated in any courses.
4. There are different benefits of MOOCs to LIS professionals that the respondents found useful learning from the experts in fields and efficiency of online learning being the most sorted ones.
5. Librarians have developed different skills by using MOOCs. Among the respondent's majority had done course on Management Skills and soft skills.
6. 11(68.75%) librarians revealed that the students of their respective colleges were aware about the MOOCs courses. Rest 5(31.25%) librarians stated that their college students were unaware about MOOCs.
7. College librarians have used different ways to create awareness about MOOCs among students. Majority used orientation program for making students aware followed by Advertising with 3(18.75%) and only 1(6.3%) used workshops and seminars.
8. Likely factors that encouraged the librarians for taking up MOOCs. Majority of respondents mentioned that advancement and personal development was the factor they found useful.

9. 16(100%) librarians found that MOOCs are beneficial for increasing personal development and increase general competences.
10. Areas of MOOCs that helped librarians for their personal development were 11(68.75%) librarians said that library automation was useful for their personal development of web application such as web 3.0, semantic etc. followed by Research Methodology.
11. These were the courses that lead the librarians towards skill development were ICT courses with 8(50%), Library automation with 4(25%), 3(18.75%) said Research Writing and only 1(6.3%) said new content generation and the options consultancy services were not chosen by any librarians.
12. Modes the librarians preferred to learn via MOOCs with the majority of 12(75%) librarians agreed with all of the above options from the given all options (ie) ICT, New content creation, Library automation, Research writing and Consultancy services.
13. The respondents asked to rate from 1 to 5. Out of 16 librarians who responded to the questionnaire 8(50%) of them said that the manner of teaching is very good for MOOCs Courses, 4(25%) said it was good and 3(18.75%) said that the manner of teaching was excellent..

6.2 Suggestions

The following suggestions were made on the basis of findings of this study:

- It is suggested that LIS professionals whatever designation they are working on in LIS domain, they must try to participate in the survey which is conducted from time to time in order to provide their experience, feedback, perceptions, etc.
- It is highly suggested that every LIS professional should be well aware of emerging trends, technologies, and learning platform, such as MOOC and so on, in order to keep themselves abreast of recent happenings and emerging trends in LIS domain as well as other domains.
- It is suggested that every LIS professional should get familiar with cutting-edge technologies from time to time in order to use them in the most effective way in LIS domain.
- It is highly suggested that every professional should participate in some MOOC courses in order to get familiar with MOOCs or any other online courses on similar lines for self-upliftment or develop the profession.
- It is highly suggested to LIS professionals that they must get familiar with online learning environments and courses as online learning is the most demanding platform in this digital era and every user is interested to learn through emerging environments in order to keep abreast in his interested field and fulfil the information needs.
- LIS professionals should look for possible factors which are helpful for using MOOCs for different reasons in LIS domain.
- It is highly recommended that every LIS professional should identify potential area in which they can make in-depth contribution in MOOCs activities and can accelerate MOOCs movement at a larger level.
- Each library professional should try and develop at least one MOOCs course so that there is more diversification the option to choose from for aspiring library and information science professionals.

6.3 Conclusion

The present Internet era expects librarians to have multiple skills of which ICT is the most prominent one. In developing countries like India, Library schools face problems like shortage of teachers, funds, infrastructure and availability of resources etc. It may be noted that MOOC is not only offering great opportunities, but also proving its significance in LIS domain. It was found from this study that MOOCs are offering various facets in which libraries, LIS professionals and school of LIS can explore possibilities and work together in order to assist, resolve problems and in developing MOOCs in different topics including LIS-related topics and build libraries image and prove their significance in this digital era. It is also suggested to those library professionals who are yet not familiar or engaged with MOOC concept, structure and other aspects of MOOC, can get a taste of the MOOC and develop their skills towards understanding of MOOC as a whole, so that such Library professionals can play significant roles and be a part of MOOCs creation and development and able to support MOOC movement at a much larger level.