



Enhancing access and Efficiency: The Digital Transformation of Private University Libraries in Bangalore

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Abstract: Introduction: Libraries worldwide are experiencing significant upheaval, mostly as a result of developments in the field of information and communication technologies. Many older libraries are making the switch to digital resources, and the majority of new libraries are also becoming digital. Aim of the study: the main aim of the study is to Enhancing Access and Efficiency: The Digital Transformation of Private University Libraries in Bangalore Material and method: A study was conducted to evaluate the condition of the libraries at private institutions to facilitate the implementation of MOOCs. Conclusion: The purpose of this study was to determine whether or not libraries and library staff at certain private institutions in the Bangalore area were ready to provide massive open online courses (MOOCs) to faculty and students.

Keywords: Digital Transformation, Private, Libraries, Professional

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INTRODUCTION

Because of the proliferation of new forms of electronic communication and information, libraries throughout the globe are undergoing a period of profound change. Many older libraries are making the switch to digital resources, and the majority of new libraries are also becoming digital. Consequently, there is a significant global interest in this field, leading to extensive research and development initiatives worldwide. In India, many institutions are now establishing digital libraries, while several researchers and practitioners are engaged in research pertaining to digital libraries. In recent years, there has been a meteoric rise in the number of conferences in India devoted to digital libraries and all the many facets of them. A number of international conferences on digital libraries have taken place, including ICADL in 2001, ICDL in 2004 and 2006, and others, played a crucial role in promoting digital library awareness and advancements in India, alongside several national conferences. The attendance of both ICADL 2001 and ICDL 2004 was said to be extensive, as documented by Kar and Seadle (2004) and Urs and Raghavan (2002). While conference proceedings serve as an important main source of information, it is common for subpar papers to be published in these proceedings due to the absence of a rigorous peer-review procedure. In contrast, scholarly journals employ a rigorous peer-review process, resulting in higher quality papers. Moreover, unlike conference proceedings, articles published in these journals are more likely to be seen and read since they are part of abstracting and indexing databases.

The words digital library and electronic library have often been used interchangeably, although the latter is

more recent. On the other hand, "digital library" has just entered the vernacular as a means of describing electronic library concepts and services. The Indian Institute of Technology, Kharagpur offers a range of electronic library services, such as video library services, database services, selective dissemination of information (SDI) services, online journal access service, and retroactive database search services. Mohapatra (2007) has addressed future schemes that include proposals for extensive digitization. The electronic library served as a stepping stone to digital libraries, according to an essay by Deb and Kar (2005). This article focuses on the launch of TERN's (The Energy and Resources Institute) digital library. Established in 1999 and catering only to the needs of its researchers, the TERI electronic library provides a range of services. Topics covered include real and virtual electronic libraries, with an emphasis on the TERI electronic library and its numerous benefits. Giri (2006) discusses the obstacle to communication caused by the concealed information in conventional library arrangements, and explores the possibilities of digitization as a solution to this issue.

LITERATURE REVIEW

Picciano, G & Graham, Charles & Ganbat, Danaa (2023) The 2019 worldwide pandemic has increased the recognition among higher education institutions of the need to undergo a digital transformation that goes beyond the administrative aspects of universities and extends to the teaching methods used in classrooms. This article presents a case study examining the digital pedagogical transformation of three institutions in Colombia, Brazil, and Mongolia, each at distinct phases of development. This article provides a comprehensive account of the local motivations for digital transformation, the primary obstacles and difficulties encountered in achieving this transformation, and the specific initiatives undertaken to facilitate the progress of each university towards embracing and implementing change. Finally, the text delves into three main points that came up in the case studies: (1) how local policy can steer digital transformation, (2) why it's important to make humans more tech-savvy, and (3) how digital transformation can make people feel hopeful.

Vu Khanh, Quy & Bui, Trung & Chehri, Abdellah (2023) The advent of the Fourth Industrial Revolution is presenting novel prospects and complexities across all sectors, occupations, and domains, with the objective of providing mankind with more efficient tools and services. Problems with digital transformation have grown in importance throughout the Fourth Industrial Revolution. Two technologies with the potential to greatly impact education are the Internet of Things (IoT) and Artificial Intelligence (AI). The last several years have seen widespread adoption of digital transformation strategies across many industries, including healthcare, transportation, education, agriculture, and more. Within these many domains, the field of education, particularly higher education, presents significant difficulties owing to the wide range of training programs, varying durations, and diverse themes. The Internet of Things enables the creation of intelligent and pervasive learning environments, while artificial intelligence has the potential to revolutionize the methods of learning and teaching. The digital revolution of higher education in Vietnam and throughout the world is the focus of this research, while also analyzing specific attributes of Vietnamese higher education within this change. Furthermore, we provide an overview of the vision, methodology, and obstacles encountered throughout the process of digital transformation at institutions located in low- and middle-income countries. This perspective is grounded on the findings of Vietnam's Hung Yen University of Technology and Education.

Fernández, Antonio & Gómez, Beatriz (2023) Higher Education Institutions (HEIs) are transitioning towards a new form of university known as a digital university. This paradigm entails not only the adoption of novel technology but also the implementation of a comprehensive organizational strategic transformation including information, processes, human factors, and other elements. The purpose of this study is to catalog the new procedures and technologies that HEIs have implemented as part of their digital transformation efforts (DTI). The objective is to find out what the relationship is between a company's digital maturity and its digital transformation activities. The primary incentive is to get a genuine and lucid understanding of how universities are undergoing transformation, identifying the most significant digital technology initiatives they have implemented, and determining if they are doing so via a cohesive plan that is in line with a digital strategy, as advised by experts. For this thorough investigation, we consulted a Multivocal Literature Review that included both scholarly and grey literature. The primary results show that the DTI that was put into place (Digital Transformation Initiatives) largely prioritize the provision of high-quality and competitive education. This was seen in 24% of the 184 DTI evaluated, which were sourced from 39 different institutions. The most often used emerging technologies were advanced analytics (23%), cloud computing (20%), and artificial intelligence (16% of the overall Digital Transformation Index). Our analysis indicates that higher education institutions (HEIs) are now in the early stages of achieving digital maturity. Specifically, only 25% of HEIs have developed a comprehensive digital strategy, However, 56 percent have launched isolated digital transformation initiatives (DTI) without a broader strategy and without yielding substantial strategic advantages for the company.

Ikenwe, Iguchi & Udem, Obiora (2022) In order to provide dynamic information services, modern libraries have undergone a digital revolution that is both significant and imaginative. Because of this, there has been an assessment of state-of-the-art digital transformation to ensure the sustainability of information services in Nigerian university libraries. This research set out to answer many questions about digital transformation, including what it is, how it affects universities, how university libraries have embraced digital transformation, how they have created modern, dynamic information services, and what factors are crucial to the long-term viability of these services. Global libraries must adapt to the digital era if they are to survive, especially in developing nations, need to adapt to technological advancements and provide essential information services to the public. In addition, libraries must lead the digital revolution if they are to continue providing cutting-edge information services and increase the efficiency with which they use that information, all while fulfilling their obligation to make use of digital technology. According to the findings, academic libraries should implement cutting-edge technological systems. University libraries in underdeveloped nations such as Nigeria need more financial resources to effectively capitalize on the potential offered by digital technology. Therefore, it is essential for university administration to collaborate closely with libraries in order to facilitate their complete integration into the possibilities offered by the digital age. Continuous human resource development is essential for universities to acquire the requisite digital competences required in the digital environment.

Christopher, Ogar & Yusuf Ph.D, Dushu (2018) Library and information services delivery are now undergoing a transformation from traditional manual operations to innovative technological methods. The research revealed that the change in libraries and information services is a direct result of the use of innovative technology. The fundamental principles of the investigation are examined. The internet is used

to provide services to customers by using modern technology and communication tools, allowing access to information via various channels. The introduction of IT has completely altered the way libraries function. Libraries must have the ability to access, assess, and quantify the influence of information technology on their operations. Such endeavor will provide them with the expertise to use IT as a catalyst for enhancing their services. The transition from a manual method to digitalization in libraries has had a favorable influence on library and information services. The subsequent issues arising from this development are emphasized, and corresponding advice are provided.

METHODOLOGY

A study was conducted to evaluate the condition of the libraries at private institutions to facilitate the implementation of MOOCs. The questionnaire, which used a Likert scale ranging from 1 to 5, was examined from two different viewpoints. Digital course material, copyright services, technical assistance for massive open online courses (MOOCs), a library network, a digital platform for MOOCs, open educational resources (OERs), and mobility are all important from the library's point of view, promotion of MOOC instruction, organization of MOOCs, embedded content, and MOOC management software for providing MOOC services.

RESULTS

Based on the mean calculations shown in Table 1, it is evident that the most significant element needed for MOOC services is MOOC administration software, with a mean score of 4.25. The second criterion is the copyright services (4.18), and the third crucial aspect is the publicity and marketing of MOOC teaching (4.10). These considerations will be given the highest priority when initiating these services in the present library configuration, relative to other factors.

Table 1: Means of factors for library setup

	N	Mean	Std. Deviation	Std. Error Mean
Copyright Services	157	4.18	.712	.057
Technological Infrastructure Facilities	157	4.04	.861	.069
Provide Knowledge Services instead of Information Services	157	4.03	.869	.069
Mobility	157	3.93	.928	.074
Support services	157	4.01	.747	.060
Digital Resources	157	3.89	.862	.069
Library Network	157	3.99	.927	.074
Technical Team to Support	157	3.87	.961	.077
Digital Platform for MOOCs learning	157	3.97	.923	.074
Use of Open Educational Resources (OERs)	157	4.06	.837	.067
Digital Course Content	157	3.97	.884	.071
Publicity and promotion of MOOC instruction	157	4.10	.741	.059
Organizing MOOCs	157	3.99	.859	.069
Embedded content	157	4.08	.824	.066
MOOC Management Software	157	4.25	.896	.072

All of the library setup test items had very significant t-values at the .000 significance level, according to the findings of the One-sample T-test. You can see the results of the T-test for the library organization hypothesis in Table 2.

Table 2: T-test results for library setup

One-Sample Test						
Copyright Services	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Copyright Services	20.747	156	.000	1.178	1.07	1.29
Technological Infrastructure Facilities	15.101	156	.000	1.038	.90	1.17
Provide Knowledge Services instead of Information Services	14.780	156	.000	1.025	.89	1.16
Mobility	12.562	156	.000	.930	.78	1.08
Support services	16.886	156	.000	1.006	.89	1.12
Digital Resources	12.868	156	.000	.885	.75	1.02
Library Network	13.349	156	.000	.987	.84	1.13
Technical Team to Support	11.290	156	.000	.866	.71	1.02
Digital Platform for MOOCs learning	13.146	156	.000	.968	.82	1.11
Use of Open Educational Resources (OERs)	15.918	156	.000	1.064	.93	1.20
Digital Course Content	13.814	156	.000	.975	.84	1.11
Publicity and promotion of MOOC instruction	18.535	156	.000	1.096	.98	1.21
Organizing MOOCs	14.501	156	.000	.994	.86	1.13
Embedded content	16.465	156	.000	1.083	.95	1.21
MOOC Management Software	17.453	156	.000	1.248	1.11	1.39

Education for library staff to better facilitate massive open online course (MOOC) engagement

Table 3 displays the average results, which suggest that library staff do not have the necessary training to provide MOOC services to library patrons. For the majority of the test items, the average values are noticeably higher. The two most important abilities for library workers to have are fluency in English (4.25) and the ability to assess massive open online courses (MOOCs) for curriculum fit (4.25). Next on the list are advanced information services (4.24), active participation in massive open online course (MOOC) teaching (4.24), and archiving massive open online courses (4.24). In the current library structure, these problems will be prioritized while training staff to provide MOOC services.

Table 3: Means of factors for library professionals'

	N	Mean	Std. Deviation	Std. Error Mean
Collection of Open Educational Resources (OERs)	157	4.13	.885	.071
High quality technical support for MOOC users.	157	4.13	.785	.063
Proctored examination and evaluation	157	4.20	.766	.061
Strong knowledge of digital technology	157	4.10	.846	.067
Understanding of MOOC pedagogy	157	4.16	.703	.056
Evaluation of MOOCs for suitability as per requirements	157	4.25	.598	.048
Proficiency in English language	157	4.25	.713	.057
Advance information services	157	4.24	.683	.055
Regularly do MOOC courses	157	4.18	.775	.062
Preservation of MOOCs as archives	157	4.24	.674	.054
Actively involve in MOOC instruction	157	4.24	.708	.057
Coordinate between different departments	157	4.22	.701	.056

According to the findings of the One-sample T-test, all of the library setup test items have t-values that are statistically significant at the .000 level. In Table 4 you can see the results of the T-test that the library professional used to evaluate their hypothesis.

Table 4: T-test results for library professional's One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Collection of Open Educational Resources (OERs)	16.051	156	.000	1.134	.99	1.27
High quality technical support for MOOC users.	18.091	156	.000	1.134	1.01	1.26
Proctored examination and evaluation	19.698	156	.000	1.204	1.08	1.32
Strong knowledge of digital technology	16.232	156	.000	1.096	.96	1.23
Understanding of MOOC pedagogy	20.672	156	.000	1.159	1.05	1.27
Evaluation of MOOCs for suitability as per requirements	26.286	156	.000	1.255	1.16	1.35
Proficiency in English language	21.938	156	.000	1.248	1.14	1.36
Advance information services	22.781	156	.000	1.242	1.13	1.35
Regularly do MOOC courses	19.160	156	.000	1.185	1.06	1.31
Preservation of MOOCs as archives	23.101	156	.000	1.242	1.14	1.35
Actively involved in MOOC instruction	21.857	156	.000	1.236	1.12	1.35
Coordinate between different departments	21.748	156	.000	1.217	1.11	1.33

The results of this study's survey confirm both hypotheses on the private university library's existing situation in offering MOOC services to its patrons. At the .000 level of significance, positive t-values provide more evidence of this. In order to provide the MOOC services efficiently, the library does not have the resources, infrastructure, or personnel with the right kind of knowledge. In order to identify the necessary library services and infrastructure features, this research reviews the existing literature on library services offered via massive open online courses (MOOCs). Furthermore, it seeks to ascertain the expectations of library professionals in order to design a survey that may be used to assess the study hypotheses. Copyright services for reading resources, a MOOC management system that works for both instructors and students, getting university students interested in MOOC-based instruction, including relevant links to digital resources for students, and making use of open educational resources (OERs) are the most important things, according to the library setup hypothesis (H1). Surprisingly, there is very little fluctuation in the mean scores of any of the survey questions. Consequently, it is safe to say that private university libraries in India should prioritize all fifteen areas highlighted in this study if they want to provide their patrons useful massive open online course (MOOC) services.

CONCLUSION

The purpose of this poll was to determine if library staff and advisory committee members at certain private institutions in the Bangalore area were ready to provide massive open online courses (MOOCs) to faculty and students. According to the results of the study, certain major issues with the library system are preventing private institutions in India from effectively implementing MOOC-based curricula and MOOC education. Existing research on massive open online courses (MOOCs) has highlighted several crucial areas for adoption in library settings, areas in which private institutions in India are now lacking the necessary resources to address. In order to make digital materials used in massive open online courses (MOOCs) more accessible to students, copyright services work with content providers, publishers, and databases. Sufficient technological infrastructure facilities for massive open online course (MOOC) participants, including, but not limited to, computer terminals, cloud storage, an interactive library website, and fast internet access. We provide knowledge services including curated reading materials, one-on-one problem-solving sessions with teachers, help choosing the right classes, and resources for answering your own questions to meet the demands of massive open online course (MOOC) participants. Enabling people to access resources on their mobile devices. Massive open online courses (MOOCs) provide technical support in the form of encrypted access to course materials via personal devices, remote access, and cloud storage. Enabling the accessibility of digital resources to MOOC users, which entails using library networks and inter-library access to information. Utilize a digital platform to host all MOOCs, course material, discussion platforms, and proctored assessment that have been authorized by the institution. To optimize the use of Open Educational materials (OERs) in Massive Open Online Courses (MOOCs) in order to circumvent copyright and legal complications that may arise from the utilization of private materials. Dissemination and advertising of MOOCs among college students. Collaborating with educators and content producers to provide integrated material for users.

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