



DIGITAL PRESENCE AND E-CONTENT DEVELOPMENT IN GOVERNMENT DEGREE COLLEGES OF JAMMU REGION: A CONTENT ANALYSIS

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ABSTRACT

The present study was undertaken to examine the availability of college websites and e-content resources across Higher Education Institutions (HEIs) in the Jammu region of the Union Territory of Jammu and Kashmir. It further aimed to analyse the subject-wise availability of e-content within these institutions. The study covered a sample of 72 Government Degree Colleges in the Jammu region. Content analysis was employed as the primary method to derive the study's findings. The results revealed that 08 out of 72 colleges did not have an official college website. Among the 64 colleges with functional websites, 23 colleges lacked a dedicated webpage for e-content. Furthermore, among the 23 colleges that had an e-content section, 13 colleges had no actual e-material uploaded on those pages. The subject-wise analysis of e-content availability showed that 07 colleges had developed e-content in English, while 05 colleges had e-content for Botany and Zoology. Similarly, 04 colleges had created e-content for Chemistry, Computer Science, Geography, Physics, Hindi, Environmental Science (EVS), Economics, Education, and Sociology. Additionally, 03 colleges had developed e-content for Mathematics, Punjabi, Political Science, Urdu, and Sanskrit. Overall, the findings indicate that while digital presence through websites has improved across Government Degree Colleges in Jammu, the development and dissemination of e-content remain limited and uneven across subjects.

KEYWORDS: Information and Communication Technology, National Education Policy 2020, E-learning, E-Content, World Wide Web, Higher Education

1.1 INTRODUCTION

In terms of students, India's higher education system is considered as the third-largest education system next to China and the US. Being the world's largest education system, higher education faces various issues despite making significant progress (Vijaya Lakshmi, et al., 2020). Since Independence, India's Higher Education sector has seen massive growth in University level Institutions & Colleges. In the recently released World University Rankings 2020, it was seen that only three Indian Universities which are "IIT-Bombay, IIT-Delhi and IISc (Bangalore)" have figured in the top 200 institutes. The higher education in India is facing various challenges and issues like Enrolment, Equity, Quality, Infrastructure and Outdated curriculum, socioeconomic and linguistics etc. (Bhattacharya & Sharma, 2007). To overcome these issues, technology is considered as the best medium. The change in global standards of education and the modern practices of providing online education through online teaching and E-learning have made the role of Information and Communication Technology (ICT) very relevant and imperative. The COVID19 pandemic has taught us the importance of technology-driven classrooms. The current situation has made it clear that the growth of educational institutions will depend upon skilful professionals. ICT refers to a vast collection of technological resources which help users in communicating, generating, distributing, and collecting information (Sarkar, 2012). It also helps in creating, disseminating, storing and managing the information (Toro & Joshi, 2012; Karanja, 2018; Agboola & Shaibu, 2019; Thamarana, 2015; Teimoornia et al., 2010). ICT use in learning has empowered students to learn without the constraint of time and place which is the need of today's

students (Talebian et al., 2014). The use of technological platforms in teaching and learning not only brings out positive learning outcomes but also brings improvement in the performance of students (Kouser & Majid, 2021). ICT empowers access to information and enables a new form of communication. Today it is considered the mainstream in higher education where it is being used to develop course material, share and deliver content, and establish communication between students and faculties and the rest of the world (Mandal & Mete, 2012). ICT has reshaped our education system, but it is believed that the issue of quality of Higher education persists. To address the issue of quality education, E-learning is believed to be the best medium. The quality of higher education can be improved by improving the motivation, engagement and interest among students. It can also facilitate the acquisition of skills and enhance teacher training to improve the exchange and communication of information (Pavel et al., 2015).

1.2 E-LEARNING

The use of technology particularly E-learning is continuously increasing in higher education and its use possesses a lot of opportunities, promises and benefits for the education system of a country. E-learning is considered as the process of acquiring and applying knowledge which is distributed and facilitated by electronic means (Pingle, 2011). It refers to a form of learning where the instructor and the learner are separated by time and space, but the gap is bridged through the use of technology (Encyclopaedia of Distance Education). It is also considered as an "innovative approach to deliver well-designed, learner-centric, interactive and facilitated learning environment



to anyone, anyplace, anytime by utilizing the attributes and resources of various digital technologies along with other forms of learning materials suited for open and distributed learning environment” (Khan, 2005). E-learning was often assumed to be synonymous with distance education, in which students learn entirely through the use of a web-based medium; however, its scope has expanded. It is a term that encompasses all forms of electronically mediated instruction (Obi et al., 2019). For future generations to create a digital teaching-learning environment, it becomes important to master the ICT skills and utilization of these skills is of utmost importance in the profession of every teacher educator (Lee, 2005). The E-Content development serves the purpose of utilization of these ICT skills. E-Content is the combination of text, audio, video, images, and animation that are delivered to the users via the internet and satellite broadcast or any other technology (Mishra et al., 2017).

1.3 E-CONTENT

E-Content also known as digital content refers to the information or the content that is made available to the users by using a computer network such as the internet. E-content is considered as a storable and workable education source which is used in both formal and personal education and is created with the help of digital technology (Kollias, 2007). It is basically a package which fulfils the conditions like minimizing the distance, cost-effectiveness, user-friendliness and adaptability to local conditions (Saxena, 2011). E-Content development usually follows 06 phases. These 06 phases are The Analysis Phase, The Design Phase, The Development Phase, The Testing Phase, The Implementation Phase, and The Evaluation Phase (Nachimuthu, 2012). The E-content development combines Content Management System (CMS) and Learning Management System (LMS) (Khot, 2019; Jani, 2017). The existing material or content cannot be automatically transformed into E-Content by keeping it available on the website of a University or College. The E-Content development follows a scientific and systematic approach to ensure that the content meets the expected outcomes and learning objectives. The E-Content should focus on various aspects like Cognitive, Emotional, Behavioural and Contextual perspectives (Mishra et al., 2017). The E-Content focuses on the individual needs of the learners as they use self-learning techniques to learn the concepts. The concept or the content can be read repeatedly until the learner is able to understand it. The delivery of E-Content is possible by following different communication channels like email, forums, chat, blogs etc. (Balachandran & Saravanakumar, 2019). It provides flexibility in learning by allowing the learners to learn at their own pace of learning and at any time and place. In today’s times, textbooks are becoming expensive, and learners feel the need to switch over to digital material or E-Content. This allows the educational institutions to move towards digital content and also helps the instructors or faculties to develop their ICT skills among them. There are variety of software’s that are available for developing E-Content. These software’s include Open Source Software

(OSS), Proprietary Software and Public Domain Software. For editing the E-Content, there are a variety of technological tools like Wevideo, Magisto, DrawPad, WavePad, VideoPad, and Authoring Tools (Jani, 2017). In short, the aim and objective of E-Content is to eliminate inequality among learners through effective education.

1.4 AIM AND OBJECTIVES OF THE STUDY

- To examine the availability of official websites for Higher Education Institutions in the Jammu region.
- To analyse the availability of e-content on the official websites of these institutions.
- To study the subject-wise distribution and availability of e-content across the websites of Higher Education Institutions in Jammu.

1.5 METHODOLOGY OF THE STUDY

The researcher visited the website of the Jammu and Kashmir Higher Education Department (<http://www.jkhighereducation.nic.in>) and found a list of 72 Govt Degree Colleges in Jammu. The Higher Education Department has maintained the list of all the colleges along with their email id, Mobile number, Landline number and the website link of the college. The website link of some colleges was missing on the website. To overcome this problem, the researchers searched the name of colleges on popular search engine Google and tried to find the website of the colleges.

1.6 POPULATION AND SAMPLE OF THE STUDY

The Jammu and Kashmir Higher Education Department consist of 142 Govt Degree Colleges, 02 Govt. College of Engineering & Technology, 04 Private Grant-in-Aid Colleges, 19 Colleges imparting Post Graduate Education, 02 College imparting Teacher Education, 16 College offering Job Oriental Courses, 09 colleges offering BCA course, 05 colleges offering BBA Courses, 01 Mass Communication & Multimedia Production college, 17 College offering Add-on Courses, 02 Nursing, Heritage and Architecture colleges. As far as the spread of Govt Degree Colleges is concerned, there are 18 colleges in Jammu, Kathua (09), Udhampur (09), Rajouri (09), Poonch (04), Reasi (04), Kishtwar (04), Doda (05), Ramban (05) and Samba (05) in Jammu region of J&K UT. As far as the Kashmir region is concerned, there are 11 colleges in Srinagar, Anantnag (11), Baramulla (12), Kupwara (08), Budgam (07), Pulwama (06), Bandipora (06), Kulgam (05), Shopian (02) and Ganderbal (02). The sample of the present study consists of 72 Govt Degree Colleges of the Jammu region of Jammu and Kashmir.

1.7 RESULT AND DISCUSSION

1.7.1 Availability of Website for College

Out of the 72 Government Degree Colleges included in the study from the Jammu region, it was found that 08 colleges do not possess an official website (Fig 01). This indicates that despite the growing emphasis on digital infrastructure and online accessibility in higher education, a section of institutions still lacks a basic online presence.

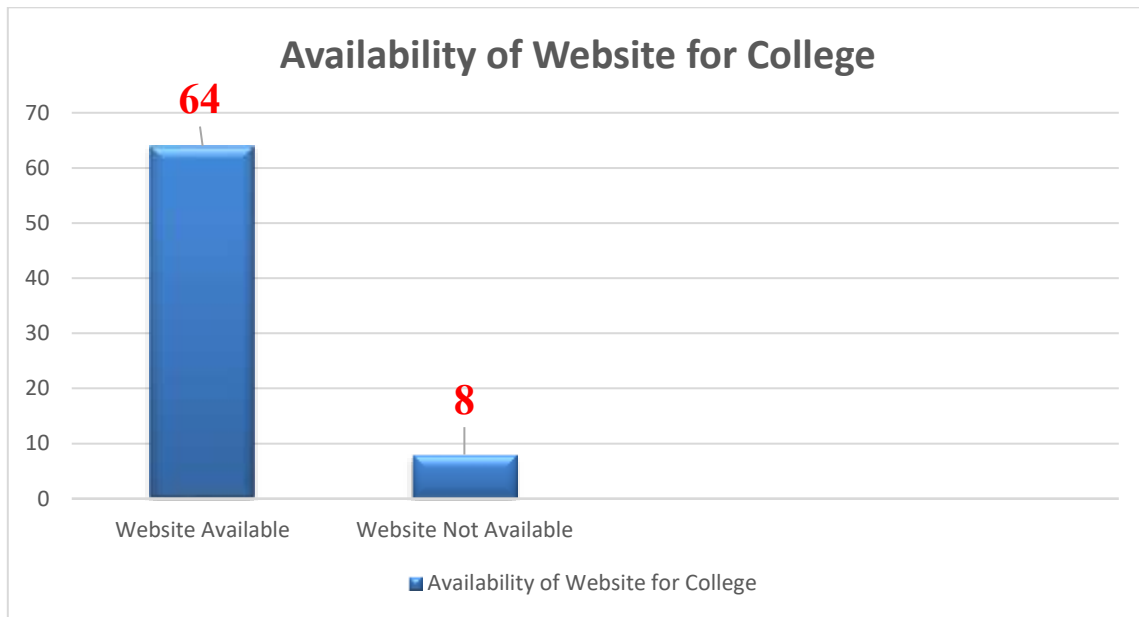


Figure 1.1: Availability of Website for College

1.7.2 Dedicated Web Page for E-Content

To assess the availability of digital learning resources, the researcher conducted a detailed analysis of the official websites of all 64 colleges included in the study. The primary focus was to determine whether each college had a dedicated webpage specifically for E-Content. The analysis revealed that a majority of the colleges, 41 out of 64, had established a dedicated section on their websites for E-Content, indicating an effort to provide students with accessible digital learning materials. In contrast, 23 colleges did not have any dedicated webpage for E-Content, suggesting a gap in the online dissemination of educational resources. This finding highlights a significant variation among colleges in terms of their digital infrastructure and commitment to supporting E-Learning initiatives. The unavailability of the E-Content webpage means that the college authorities have not developed the E-Content for the subjects that they teach.

1.7.3 Availability of E-Content Within Dedicated Webpages

The researchers also analyzed the Availability of E-Content Within Dedicated Webpages. It was revealed that among the 41 Government Degree Colleges that have a dedicated webpage for E-Content, it was observed that 13 colleges do not contain any actual E-Content within their E-Content webpages. This indicates that while the infrastructure for hosting digital

learning materials exists, a significant number of colleges have yet to populate these pages with relevant educational content.

1.7.4 Subject Wise Availability of E-Content in Govt Degree Colleges

The researchers further examined the availability of subject-specific E-Content across the Government Degree Colleges. The findings, summarized in Table 1.3, reveal considerable variation in the presence of E-Content across different disciplines. Among the 64 colleges analyzed, certain subjects such as English (7 colleges), Botany and Zoology (5 colleges each), and Chemistry, Computers, Physics, Hindi, History, Economics, and Environmental Sciences (ranging from 4 to 4 colleges) show relatively higher representation in terms of E-Content availability. In contrast, several subjects, including Food Science & Technology, Food Science & QC, Psychology, Home Science, and various other specialized disciplines, are represented in only one or two colleges. This disparity indicates that while some core and popular subjects have been prioritized for digital content development, many specialized or less common subjects still lack sufficient E-Content resources, reflecting an uneven distribution of digital learning materials across the academic spectrum.

Table 1.1: Subject Wise Availability of E-Content in Govt Degree Colleges

S. No.	Subject	No. of Colleges	S. No.	Subject	No. of Colleges
1	Bio-Technology	2	20	Food Science & Technology	1
2	Botany	5	21	Food Science & QC	1
3	Chemistry	4	22	Psychology	1
4	Computers	4	23	Home Science	1
5	Electronics		24	Education	4
6	English	7	25	Commerce	1
7	Environmental Sciences	1	26	Punjabi Literature	1
8	Geography	4	27	Philosophy	1
9	Geology		28	Economics	1



10	Math	3	29	Urdu	3
11	Physics	4	30	Textile and Apparel Science	1
12	Zoology	5	31	Functional English	1
13	Hindi	4	32	Sociology	4
14	EVS	4	33	Music	1
15	Punjabi	3	34	Statistics	1
16	Political Science	3	35	Dogri	2
17	History	4	36	Sanskrit	3
18	Economics	4	37	Physical Education	1
19	Library Science	2	38	Persian	1

Fig 1.2: Subject Wise Availability of E-Content in Govt Degree Colleges

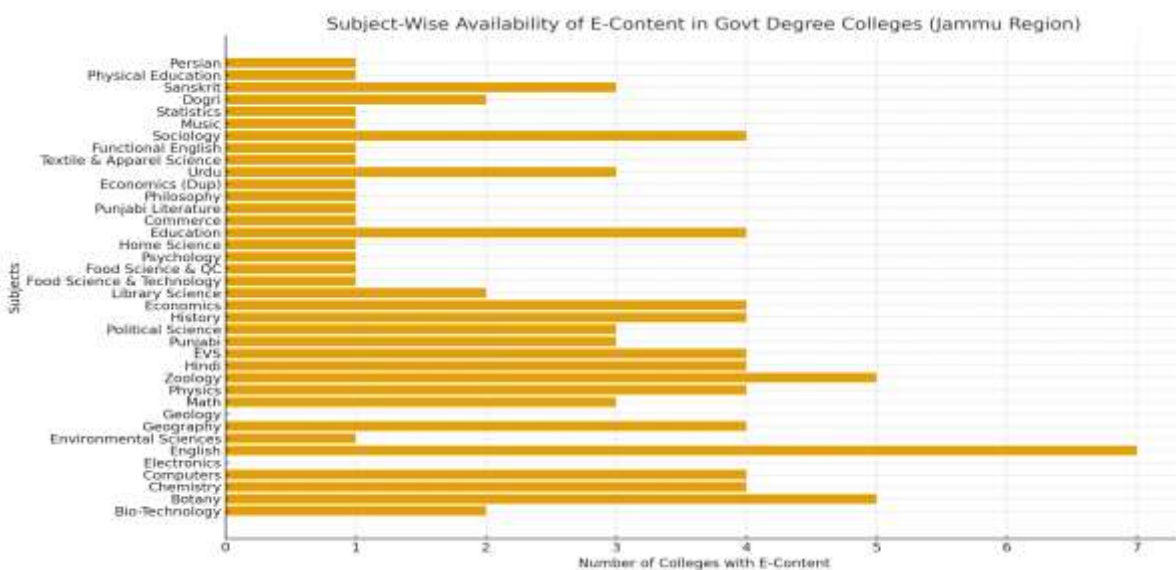


Table 1.1 & Fig 1.1 reveals the Subject Wise Availability of E-Content in Govt Degree Colleges. Among all subjects, English stands out with 7 colleges having developed e-content, indicating a comparatively stronger emphasis on digital resource creation in this discipline. It is followed by Botany and Zoology, each represented in 5 colleges, reflecting moderate digital activity in the life sciences. Subjects such as Chemistry, Computer Science, Geography, Physics, Hindi, Environmental Studies (EVS), Economics, Education, History, and Sociology show the presence of e-content in 4 colleges each, signifying consistent but limited progress in e-content generation. Subjects like Mathematics, Punjabi, Political Science, Urdu, and Sanskrit have e-content available in 3 colleges, while Bio-Technology, Library Science, and Dogri appear in 2 colleges. A large number of disciplines namely Food Science & Technology, Food Science & Quality Control, Psychology, Home Science, Commerce, Punjabi Literature, Philosophy, Textile & Apparel Science, Functional English, Music, Statistics, Physical Education, Persian, and Economics have e-content developed in only one college each, suggesting minimal digital engagement in these areas.

1.8 MAJOR FINDINGS OF THE STUDY

- There are 72 Govt Degrees Colleges in the Jammu region of Jammu and Kashmir. Out of these 72 Govt Colleges, it was found that 08 colleges don't possess any website

and only 64 colleges are possessing a full-fledged website. In today's educational environment where technology plays a crucial role in teaching, learning, and administration, the lack of a website can significantly hinder communication between the institution and its stakeholders, including students, teachers, and the general public. Hence, the finding highlights an urgent need to strengthen the digital infrastructure of these colleges to ensure that all institutions in the Jammu region are equipped with a functional, updated, and accessible website that can serve as a gateway for e-learning and institutional development.

- The E-Content analysis carried out on 64 Govt Degree Colleges reveals that out of 64 mentioned colleges, 23 colleges don't have a dedicated webpage for E-Content on the college website.
- Out of 23 Govt Degree Colleges where a dedicated webpage for E-Content is available, 13 colleges don't contain any E-content inside the E-Content webpage.
- The subject-wise E-content analysis reveals that that 07 colleges have developed E-Content for English Subject, 05 colleges have developed E-Content for Botany, Zoology. 04 colleges have developed E-Content for Chemistry, Computer Science, Geography, Physics, Hindi, EVS, Economics, Education and Sociology. 03



colleges have developed the E-Content for Math, Punjabi, Political Science, Urdu and Sanskrit.

colleges of the Jammu region at par with the emerging digital standards in higher education.

1.9 DISCUSSION

The analysis revealed that out of 72 Government Degree Colleges in the Jammu region of Jammu and Kashmir, 08 colleges do not have an official website, while only 64 colleges possess a fully functional online presence. This finding underscores a significant digital gap within the higher education landscape of the region. In the present era, where technology has become an indispensable component of teaching, learning, administration, and communication, the absence of a college website reflects a major shortcoming in institutional connectivity and outreach. A website serves as the digital face of an institution facilitating access to academic information, notices, faculty details, learning resources, and e-content. Without it, the colleges remain digitally isolated, limiting opportunities for both students and faculty to engage with online academic and administrative processes. This situation calls for immediate attention toward strengthening digital infrastructure in these institutions. Establishing functional, updated, and user-friendly websites is essential not only for transparency and efficiency but also for aligning with national initiatives such as Digital India and NEP 2020, which emphasize technology-enabled education. Ensuring that every Government Degree College in the Jammu region is digitally equipped would foster greater access to e-learning, enhance institutional visibility, and contribute to the overall modernization of higher education in the Union Territory.

The study further revealed that out of 64 Government Degree Colleges in the Jammu region that possess functional websites reveals that 23 colleges lack a dedicated webpage for e-content. This finding reflects a considerable gap in the digital academic infrastructure of many higher education institutions in the region. A dedicated e-content webpage is a vital component of a modern educational website, serving as a repository for digital learning materials such as lecture notes, video lessons, study modules, and interactive resources. The absence of such a section indicates that a significant proportion of colleges have not yet integrated e-learning as a formal part of their academic system. Consequently, students in these institutions may have limited access to structured online learning resources that can complement classroom teaching. In the context of the National Education Policy (NEP) 2020 and initiatives like SWAYAM, DIKSHA, and e-PG Pathshala, which emphasize digital and blended learning, this lack of e-content webpages highlights a misalignment with the national vision for technology-enabled education. The absence also suggests that while some colleges may have websites for basic information dissemination, the pedagogical use of digital platforms remains underdeveloped. Therefore, it becomes imperative for these institutions to develop and maintain dedicated e-content sections on their websites. Doing so would not only promote accessibility and inclusivity in higher education but also ensure that students and faculty can effectively participate in the evolving digital learning ecosystem. This step is crucial for enhancing the quality of teaching-learning processes and for bringing the

The study further revealed that among the 23 Government Degree Colleges that have a dedicated webpage for e-content, 13 colleges do not host any actual e-content on those pages. This finding highlights a concerning gap between the creation of digital infrastructure and its effective utilization. While the establishment of an e-content webpage indicates an initial effort toward digital readiness, the absence of actual learning materials suggests that these initiatives have not been meaningfully implemented. In such cases, the e-content sections exist only as placeholders rather than as active repositories of educational resources. This undermines the core objective of integrating digital tools into the teaching-learning process and fails to provide tangible academic benefits to students. In alignment with the goals of NEP 2020, which emphasizes digital empowerment and the creation of open educational resources, it is essential that these colleges move beyond symbolic digital presence. Regular updating and maintenance of e-content webpages with quality, curriculum-aligned materials will significantly enhance accessibility, flexibility, and learner engagement in higher education across the Jammu region.

The subject-wise analysis of e-content availability across Government Degree Colleges (GDCs) in the Jammu region offers a clear understanding of the extent to which different disciplines have embraced digital learning resources. The data reveals that e-content development remains unevenly distributed, with certain subjects showing commendable progress while others lag significantly behind. Among all subjects, English stands out with 7 colleges having developed e-content, indicating a comparatively stronger emphasis on digital resource creation in this discipline. It is followed by Botany and Zoology, each represented in 5 colleges, reflecting moderate digital activity in the life sciences. Subjects such as Chemistry, Computer Science, Geography, Physics, Hindi, Environmental Studies (EVS), Economics, Education, History, and Sociology show the presence of e-content in 4 colleges each, signifying consistent but limited progress in e-content generation. Subjects like Mathematics, Punjabi, Political Science, Urdu, and Sanskrit have e-content available in 3 colleges, while Bio-Technology, Library Science, and Dogri appear in 2 colleges. A large number of disciplines namely Food Science & Technology, Food Science & Quality Control, Psychology, Home Science, Commerce, Punjabi Literature, Philosophy, Textile & Apparel Science, Functional English, Music, Statistics, Physical Education, Persian, and Economics have e-content developed in only one college each, suggesting minimal digital engagement in these areas. This pattern of distribution highlights a clear imbalance while some mainstream subjects like English and core sciences have received attention in digital content development, regional languages, vocational, and specialized subjects remain largely neglected. The disparity suggests that colleges may be prioritizing traditional subjects over emerging or applied disciplines when integrating technology into teaching and learning. To address this issue, there is an urgent need for a



comprehensive digital content strategy that encourages all departments, irrespective of discipline, to participate actively in e-content creation. Capacity-building programs for teachers, technical training, and institutional support from the Higher Education Department of Jammu and Kashmir could play a pivotal role in bridging this gap. Furthermore, integrating institutional e-content efforts with national digital learning platforms such as SWAYAM, DIKSHA, and e-PG Pathshala can help ensure wider accessibility and consistency in quality. In conclusion, while some progress has been made in the digitalization of higher education in the Jammu region, the current analysis makes it evident that a more inclusive, well-coordinated, and discipline-balanced approach is essential to achieve equitable digital growth across all academic subjects in Government Degree Colleges.

1.10 CONCLUSION AND DIRECTIONS FOR FUTURE STUDY

The area of E-Content Analysis is not new. There are various studies which have taken place. The current study was delimited to Jammu and Kashmir. A same kind of study can be carried out on Govt and Private colleges of Kashmir as well as Jammu. The study provides first-hand information of the initiatives taken by the college authorities for developing E-Content. It provides a road map for the Govt to frame guidelines for making it mandatory for the development of E-Content in every college. The development of this will help students in understanding the content in a much better way. The faculties need to increase and enhance their ICT skills which help them to take maximum benefits of E-learning. The findings of the study will help the Higher Education Department of Jammu & Kashmir to take the necessary steps for proper availability of E-Content and a full-fledged website for the educational institutions of Jammu.

1.11 DELIMITATIONS OF THE STUDY

- The study was delimited to higher education institutions of J&K.
- The study was further delimited to Govt Higher Education institutions of the Jammu region of J&K
- Further, the study was delimited to 72 Govt Degree Colleges of Jammu.

REFERENCES

1. Agboola, B. & Shaibu, R. (2019). *Impact of ICT on Information Retrieval System in Academic Libraries: The Experience of Federal University Gashua Library, Yobe State, Nigeria. Library Philosophy and Practice(e-journal)*, 1-15.
2. Balachandran, P. & Saravanakumar, A. R. (2019). *The Importance of Applying E-Content in Teaching Learning Process. Paper presented in Global Challenges in Distance Education at Department of Education, Bharathidasan University, Tiruchirappalli.*
3. Bhattacharya, I. & Sharma, K. (2007). *India in the knowledge economy – an electronic paradigm. International Journal of Educational Management*, 21(6), 543- 568.
4. Jani, G. N. (2017). *Fundamental of E-Content. International Journal of Advance Research and Innovative Ideas in Education*, 2(1), 12-16.
5. Karanja, M. (2018). *Role of ICT in Dissemination of Information in Secondary Schools in Kenya: A Literature Based Review. Journal of Information and Technology*, 2(1), 28-38.
6. Khan, B. H. (2005). *Managing E-learning: Design, Delivery, Implementation and Evaluation. IGI Global, Information Science Publishing.*
7. Khot, N. (2019). *E-Content Development and Management: Initiatives of INFLIBNET. Journal of Advancements in Library Science*, 6(1), 284-289.
8. Kollias, A. (2007). *Framework for e-learning contents evaluation position paper, grant agreement number: 2005 - 3872 /001 - 001 ELE-ELEB14.*
9. Kouser, S., & Majid, I. (2021). *Technological Tools for Enhancing Teaching and Learning Process. Towards Excellence*, 13(1), 366-373.
10. Vijaya Lakshmi Y., Das, J., & Majid, I. (2020). *Assessment of e-Learning Readiness of Academic Staff & Students of Higher Education Institutions in Gujarat, India. Indian Journal of Educational Technology*, 2(1), 31-45.
11. Lee, M. (2005). *UNESCO implemented project on Training and Professional development of Teachers/ Facilitators in effective use of ICTs for improved teaching and learning. Thailand press.*
12. Mandal, A., & Mete, J. (2012). *ICT in higher education: opportunities and challenges. Bhatler College Journal of Multidisciplinary Studies*, II, 2-11.
13. Mishra, U., Patel, S. & Doshi, K. (2017). *E-Content: An Effective Tool for Teaching and Learning in a Contemporary Education System. International Journal of Advance Research and Innovative Ideas in Education*, 2(1), 79-83.
14. Nachimuthu, K. (2012). *Need of E-Content Development in Education. Education Today, An International Journal of Education & Humanities*, 03(02),72-80.
15. Obi, I., Charles-Okoli, A., Agunwa, C., Omotowo, B., Ndu, A., & Agwu-Umahi, O. (2018). *E-learning readiness from perspectives of medical students: A survey in Nigeria. Nigerian Journal of Clinical Practice*, 21(3), 293-293.
16. Pavel, A. P., Fruth, A. & Neacsu, M. N. (2015). *ICT and E-Learning – Catalysts for Innovation and Quality in Higher Education. Procedia Economics and Finance*, 23, 704-711.
17. Pingle, S. S. (2011). *Higher Education Students Readiness for E-Learning. TechnoLEARN*, 1(1), 155-165.
18. Sarkar, S. (2012). *The Role of Information and Communication Technology (ICT) in Higher Education for the 21st Century. The Science Probe*, 1(1), 30-40.
19. Saxena, A. (2011). *Pedagogical Designs for Generation of Contents for the Community, Access, and Success: Global Development Perspectives to Learning for Development, Indira Gandhi National Open University publications, New Delhi. 1-3.*
20. Talebian, S., Mohammadi, H. M. & Rezvanfar, A. (2014). *Information and communication technology (ICT) in higher education: advantages, disadvantages, conveniences and limitations of applying e-learning to agricultural students in Iran. Procedia - Social and Behavioral Sciences*, 300-305.
21. Teimoornia, M., Hamidi, F., Jomeh, S. M. R. I. & Foroozesh, S. (2010). *The implementation of Information and Communication Technology (ICT) in Extracurricular activities of Education system in Iran. Procedia Computer Science*, 617-622.
<http://dx.doi.org/10.1016/j.procs.2010.12.103>
22. Thamarana, S. (2015). *he Role of Information and Communication Technologies in Achieving Standards in*



- English Language Teaching. The Criterion: An International Journal in English*, 6(4), 227-232.
23. Toro, U. & Joshi, M. (2011). *ICT in Higher Education: Review of Literature from the Period 2004-2011. International Journal of Innovation, Management and Technology*, 3(1), 20-23.