CHAPTER 1
INTRODUCTION

The 21st century has been rightly termed the digital era. The Internet has brought considerable change in the lives of human beings. It has become extremely easy to connect via the internet from one part of the world to the other. Every aspect of human life is being ruled by digital technology, whether it is industrial, medical, sports, or education.

The Indian government is additionally in favor of integrating technology into education, encouraging most educational institutions to migrate from blackboards to digital boards. Technology is going to be the most important growth driver in improving the standard of education in India. "Digital India" is an active slogan propagated by Prime Minister Narendra Modi. In 2014, he created the E-Basta program to plug e-learning to provide more computer-based education and interactive learning. The scheme was aimed towards making children free from the burden of carrying books to high school. Teaching is now quite ahead of the blackboard, and technology has been an integral part of its development. It has transformed education, and therefore, students learn and retain information. Therefore, its role in the way forward for education may be a fundamental part in maintaining the expansion and progression of today's economy. Innovations in teaching and learning techniques have appeared, and higher education teachers are on their way to adopting using new educational technologies in their daily classroom rather than using old teaching methods. Urdan and Weggen (2000) found that online learning constitutes a neighborhood of e-learning and further defined it as learning processes that happen via the web and in blended classroom contexts. They stated that e-learning via e-content encompasses a wide range of applications and procedures, such as virtual classrooms and digital collaboration.

Educational technology changes have been reflected in the evolving role of teachers and students in the learning equation. Technological changes-particularly online e-learning through e-content and web-based technologies have resulted in the need to develop new curriculum designs and modern teaching strategies, develop in-house technological-friendly infrastructures, and make separate financial provisions for them.

Teaching through e-content has emerged as an important educational tool and has provided teachers with a new instrument to expand the teaching-learning opportunities and enhance the teaching outcomes. The explosive growth in information technology (IT) and new developments in learning science provide opportunities to create well-designed, learner-centered, meaningful, and facilitated e-learning environments (Khan, 2005). Higher educational institutions, to be relevant and competitive in a globalized networked world, need to invest heavily in ICT infrastructure and develop appropriate mechanisms to advance e-content usage readiness, besides developing a policy framework to promote it.

1.1 INDIA AND EDUCATION

Higher education is critical to the country's overall growth, which includes industrial, social, and economic development. India has the world's third-largest educational system. In today's world, the duty of Indian higher educational institutes, such as colleges and universities, is to provide quality-based education in the fields of education, research, and other fields to empower young people for self-sustainability. The National Council for Educational Research and Training (NCERT), which creates the National Curriculum Framework, is a national agency that plays a vital role in formulating policies and programs. The State Council for Education has a counterpart in each state. In India, though much importance has been given to primary education, in the past few decades, the government has brought higher education into the mainstream as well. The government has been working on improving the quality and content of higher education in India. Many schemes and programs have been initiated towards higher education.

1.2 ICT AND HIGHER EDUCATION

The world has entered into an information age and developments in communication, information and technology opened up new and cost-effective approaches for providing the reach of higher education to the youth also on those that need continuing education for meeting the stress of explosion of data, fast-changing nature of occupations and lifelong education. A few initiatives have been taken by the Ministry of Human Resource Development (MHRD) to promote digital education literacy in the country:

- With the utilization of data and information communication technology (ICT), SWAYAM is meant to supply one integrated platform and portal for online courses to hide all education subjects and skill sector courses.
- e-shodh Sindhu is a project of the government which, aims at providing access to quality electronic resources including full text, bibliographic and factual databases to academic institutions at a lower rate of subscription. FOSSEE is Designed by the MHRD, the Free and Open Source Software for Education (FOSSEE). The project aims at promoting the use of opensource software in educational institutions to improve the quality of education, reducing dependency on proprietary software. This project may be a component of the National Mission on Education through Information and Communication Technology (ICT) and MHRD.

1.3 USE OF TECHNOLOGY IN INDIAN EDUCATION

India has understood together with the world's top education destination within the global education industry. With several universities and colleges, India has been successful in attracting bright talents everywhere on the planet. The Indian education system is healthy and built on strong foundations. India may not be the early adopters of technology in the education sector but with access to highspeed broadband internet and low-cost computers and mobile devices, there has been growth in the use of technology for learning. Today India is one of the fastest-growing markets for e-learning, based products, and services like teaching through e-content. There are different ways technology can be used to bring improvement to the Indian education system. Even government aims to increase the digital literacy of the country by bringing out favorable policies to give a push to technology-based teaching-learning. Many entrepreneurs and start-ups have grabbed this opportunity to develop technology-based educational products for private and government based schools, colleges, and universities. The digital revolution in India’s education sector started with management colleges just like the Indian Institutes of Management. The university and colleges gradually began to adopt digital practices, from providing computer labs to totally electronic libraries. Laptops became common in institutes and among scholars studying business management courses. Gradually, at colleges and universities, it evolves into a new manner of teaching and learning. Exams were not limited to pen and paper because

it was replaced by computerized exams. PowerPoint presentations have evolved into a new way of submitting college assignments and projects. It was soon realized that learning does not revolve around the ability to only read and write. In the occurrence of the digital era, drivers of change like Artificial intelligence, robotics, nanotechnology, etc. have a powerful impact on the evolution of education. That is why it's important to include digitization within the learning process which can help students in critical thinking, innovation, collaboration, and problem-solving. Along with the primary syllabus, the curriculum should also specialize in technology, innovation, general skills, and business management.

1.4 CONCEPT OF E-CONTENT

Wide varieties of digital materials are available online. Some of the standard materials which are available freed from cost or with minimum restrictions are often used, reused, and modified by teachers and students for their teaching and learning. As printed textbooks are too expensive, the students are switching from printed textbooks to digital course materials. These products increase interactivity and social participation for both teachers and students. e-content is one of the materials that may be generated, developed, reused, and distributed. All sorts of material developed and provided through various electronic media are referred to as e-content. e-content is out there in many subjects and most levels of education. It is often employed by a big variety of learners with diverse needs, different backgrounds, and former experience and skill levels. According to oxford dictionary ‘e-content is that the digital text and pictures designed to display on web page.’ consistent with Saxena (2011) ‘e-content is essentially a package that satisfies the conditions like minimization of distance, cost, effectiveness, user-friendliness, and adaptability to local conditions. Well developed e-content are often delivered repeatedly to different learners. Individual course components i.e., units, lessons, and media elements like graphics and animations are often reused in several contexts. Unluckily, existing materials cannot be automatically transformed into e-content materials by just making them available from an online site. A systematic and scientific approach is required to develop quality e-content. The e-content should follow appropriate instructional design methodology to assure meeting of learning objectives and expected outcomes.

1.5 E-LEARNING THROUGH E-CONTENT: INDIAN PERSPECTIVE

India has evolved into an "information-heavy society" over a decade, and there is an increasing need to embrace the use of technology in the field of education. In this regard, the Policy notes that one of the central principles steering the education system is getting to be the ‘extensive use of technology in teaching and learning, removing language barriers, increasing access also as education planning and management. The use of e-content for e-learning is seen at all levels of the educational system. India has seen a fair amount of progress in the usage of e-content for e-learning for higher education. The only way to bridge the growing division in public and private education in India can be tackled by utilizing e-content usage for e-learning. A website named Coursera provides such online courses through collaborations with various well recognized National level Universities and Institutes across. One such open online course in India is MOOC which collaborates with National level Institutes like IITs and brings in these online courses. The courses are all free and provide free certificates of completion who are done and have completed all the quizzes and peer evaluation assignments in the respective courses. Moreover, even the state universities in India have started their wing of graduate and postgraduate programs within the sort of online education. e-content has become extremely popular for teaching online. The rise in Internet users and the revolutionary changes that have happened in education have created a fertile environment for teaching through the e-content method to grow. Once characterized by the normal classroom model, education today has become learning that's instant, online, self-driven, and on the go. The journey of higher education in India has been marked with innumerable milestones – most recently, e-learning. The Government of India (GOI) is a robust supporter of e-learning and therefore the Department of Electronics and knowledge Technology are actively developing tools and technologies to market it. These are e-content development, R&D technology initiatives, human resource development projects, and faculty training initiatives to improve through e-learning. The rapid increase within the Internet connectivity within the previous years has been a crucial catalyst for the expansion of e-learning in India which can help make further inroads. Fueling this growth is going to be India’s education system. Soon, universities will see more students accessing this coursework from outside the normal campus and classroom. The Digital India Policy involves investment in digital infrastructure, development of online teaching platforms and tools, creation of virtual labs and digital repositories, training teachers to become top quality online e-content creators, designing and implementing online assessments, establishing standards for content, technology, and pedagogy for online teaching-learning.

1.6 TEACHING THROUGH E-CONTENT IN INDIA: PRESENT STATUS

In this age of virtual education, one of the challenges before our universities and colleges is to develop skills in higher education teachers related to educational technologies, like skills related to develop and use e-content for a specific subject, solving problems which are occurring during teaching through e-content, timely up-gradation in e-content for making it more advance. In this direction, the initiative taken by UGC in collaboration with Consortium for Education Communication (CEC) to train the teachers and provide funds for multimedia & e-content development is gaining momentum. e-content is the packaging of data in electronic form which may be retrieved by the utilization of electronic devices. UGC has constituted a committee to work out the equivalence of e-content with research papers or textbook publication.

In India, face-to-face teaching is still the popular teaching method. A technology enabled teaching method can be face to face as well as virtual through various educational technology and the internet. The new approach should be to blend both so that more students can learn with existing infrastructure and human resources. The time is ripe to develop a new model of blended face-to-face as well as the virtual model of education. Some subjects require practical training which could be provided on university campuses, industry, hospitals, workshops, or in relevant situations. What is needed now is to coordinate and manage this blended mode of teaching effectively. India must make several steps e.g., expansion of education system, adoption of new techniques such as multimedia and use of e-content for teaching, etc. which will visualize the concept of the virtual classroom. Packaging of knowledge through e-content may enable teachers to contribute to the knowledge field. Each teacher has some strength in their subject area. Teachers desire to express and share it. This technology provides opportunities for them to contribute to their respective strength areas.

It is of great importance to empowering universities to operate efficiently in the digital age. Professors should get appropriate training that enhances their digital literacy and provides them with useful tools to design courses that reflect access to a rich range of knowledge sources and resources on the internet and in digital libraries. It is important to allocate funds for teacher and staff support services, and highlight good practices of blended learning and teaching, open and flexible education, and the effective use of MOOCs and Open Educational Resources (Alexander et al., 2017; Johnson et al., 2016).

The Education Ministry has released a new education policy with a vision of reshaping the education system in India. According to the new education policy 2020, highlighted that given the emergence of digital technologies and the emerging importance of leveraging technology for teaching-learning at all levels from school to higher education, this Policy recommends the following key initiatives:

- **Pilot studies for online education:** Appropriate agencies, such as the NETF, CIET NIOS, IGNOU, IITs, NITs, etc. Will be identified to conduct a series of pilot studies, in parallel, to evaluate the benefits of integrating education with online education while mitigating the downsides and also to study related areas, such as student device addiction, most preferred formats of e-content, etc. The results of these pilot studies will be publicly communicated and used for continuous improvement.
- **Digital infrastructure**: There is a need to invest in the creation of open, interoperable, evolvable; public digital infrastructure in the education sector that can be used by multiple platforms and point solutions, to solve for India's scale, diversity, complexity, and device penetration. This will ensure that the technology-based solutions do not become outdated with the rapid advances in technology.
- **Online teaching platform and tools:** Appropriate existing -learning platforms such as SWAYAM, DIKSHA, will be extended to provide teachers with a structured, user-friendly, rich set of assistive tools for monitoring the progress of learners. Tools, such as two-way video and two- way-audio interface for holding online classes are a real necessity as the present pandemic has shown.
- **Content creation, digital repository, and dissemination:** A digital repository of content including the creation of coursework, Learning Games & Simulations, Augmented Reality, and Virtual Reality will be developed, with a clear public system for ratings by users on effectiveness and quality. For fun-based learning student-appropriate tools like apps, gamification of Indian art and culture, in multiple languages, with clear operating instructions, will also be created. A reliable backup mechanism for disseminating -content to students will be provided.

- **Addressing the digital divide:** Given the fact that there persists a substantial section of the population whose digital access is highly limited, the existing mass media, such as television, radio, and community radio will be extensively used for telecasts and broadcasts. Such educational programmes will be made available 24/7 in different languages to cater to the varying needs of the student population. A special focus on content in all Indian languages will be emphasized and required; digital content will need to reach the teachers and students in their medium of instruction as far as possible.
- **Virtual Labs:** Existing e-learning platforms such as DIKSHA. SWAYAM and SWAYAMPRABHA will also be leveraged for creating virtual labs so that all students have equal access to quality practical and hands-on experiment-based learning experiences. The possibility of providing adequate access to SEDG students and teachers through suitable digital devices, such as tablets with pre-loaded content, will be considered and developed.
- **Training and incentives for Teachers:** Teachers will undergo rigorous training in learner-centric pedagogy and on how to become high-quality online content creators themselves using online teaching platforms and tools. There will be an emphasis on the teacher's role in facilitating active student engagement with the content and with each other.
- **Online assessment and examinations:** Appropriate bodies, such as the proposed National Assessment Centre or PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development), School Boards, NTA, and other identified bodies will design and implement assessment frameworks encompassing design of competencies, portfolio, rubrics, standardized assessments, and assessment analytics. Studies will be undertaken to pilot new ways of assessment using education technologies focusing on 21stcentury skills.
- **Blended models of learning:** While promoting digital learning and education, the importance of face-to-face in-person learning is fully recognized. Accordingly, different effective models of blended learning will be identified for appropriate replication for different subjects.

- **Laying down standards:** As research on online/digital education emerges, NETF and other appropriate bodies shall set up standards of content, technology, and pedagogy for online/digital teaching-learning. These standards will help to formulate guidelines for e-learning by States, Boards, schools and school complexes, Higher Education institutions, etc.

1.7 TEACHERS READINESS FOR TEACHING THROUGH E-CONTENT

As the usage of e-learning through e-content increases across the globe in higher educational institutions, the teachers', as well as students' readiness, will become critical. Aydın and Taşçı (2005) observed that it needs to address the issues related to environment readiness, technical readiness, content readiness, and financial readiness. Further, there are other factors such as the age of teachers and students, education of teachers, that may have an impact on the usage of e-content readiness, and thus are considered as important factors in usage of e-content readiness. For the present study, e-content readiness was conceptualized as the competency and skills of the teachers for using e-content for their classroom teaching. Many researchers have recommended different models and frameworks which can be used for assessing the e-content usage readiness of individual universities and institutions.

The attention should be on the readiness of teachers which will be critical to its success. They need to be skilled in the use of ICTs and trained in how to develop the course materials for e-content besides pedagogical approaches.

In the current 'pandemic circumstances', with virtual learning replacing in-person learning experiences, students and teachers are compelled to reimagine conventional learning and teaching techniques. The Policy's introduction at this key juncture is vital because it describes the vision of education for future generations and will be a critical tool in the construction of a "self-reliant" India. The Indian education system was never very efficient in the best of times. It has become immensely prejudiced and faulty as a result of the COVID-19 pandemic. Online teaching is the major focus of offering learning opportunities while schools are closed. For this goal, the government, the National Council of Educational Research and Training (NCERT), and hence the Central Board of Education (CBSE) have issued many sets of rules and programs. Learning schemes, teaching videos, sites, and portals for learning opportunities abound on the internet. The NCERT released an alternative Academic Calendar, video of instruction, digital editions of textbooks, and links to other such information are the primary contents of all government sites and programmers.

1.8 UNIVERSITY READINESS FOR THE USAGE OF E-CONTENT FOR CLASSROOM TEACHING

e-raeadiness of the universities means an electronic (e-learning through e-content) readiness assessment is the evaluation of a universities ability to accept and use ICTs and their applications for teaching. It also indicates its preparedness to participate in the information and knowledge society, which is reflected in the degree of integration of ICT. Therefore, an e-content usage readiness assessment identifying related issues, before and during an e-content usage initiative is critical to its implementation. The Centre for International Development at Harvard University produced 'Readiness for a Networked World: A Guide for Developing Countries.' (RNW) states: "Readiness is that the degree to which a country is prepared to participate in a networked world." to which a community is prepared to participate in the networked world." According to Machado (2007), in the higher education sector, e-Readiness is "the ability of Higher Educational Institutes and the capacity of institutional stakeholders, to benefit from educational technology (or e-learning through e-content)." Borotis and Poulymenakou (2004) defined e-learning readiness as "the mental or physical preparedness of an organization for some e-learning experience or action". The objective of the study was to assess some dimensions of the different faculties of the universities and colleges which will help them to evaluate themselves and make themselves more techno-friendly. Thus, the e-readiness assessment shows a difficult patchwork of changing levels of ICT access, usage of content, and applications in an institution. The evaluation of e-readiness involves a process of identifying the underlying factors that are likely to act as barriers to the deployment of e-content usage. Generally, in universities of higher education, the introduction of innovation or upgrading of existing learning procedures is likely to have struggled, as faculty members are sometimes used to established pedagogies and practices and also face different challenges related to infrastructure funds, in higher education institutions and lack of technical skills, motivation, and positive attitude.

1.9. CHALLENGES IN USAGE AND DEVELOPMENT OF E-CONTENT FOR CLASSROOM TEACHING

A few challenges are hindering the usage and development of e-content for classroom teaching in higher education.

1.9.1. *Inadequacy related to ICT and e-learning Infrastructure:*

To have optimum usage of e-content for classroom teaching, the availability of equipment and related infrastructure is a necessity. Proper facilities like computers, laboratories, availability of hardware and software, along with the accessibility of well-facilitated labs to the university lecturers can only promote the usage of e-content. However, if such facilities are scarcely available or accessible then it creates a barrier in the usage and development of e-content.

Tarus (2011) in their studies entitled "Challenges of Implementing E-Learning in Kenya: a case in Kenyan Public Universities" stated that inadequate ICT and e-learning infrastructure is one of the major challenges hindering the implementation of e-learning in Kenyan Public University. Thus, it is quite evident that infrastructure plays an evident role in implementing e-learning.

1.9.2. *Financial Challenges:*

Shortage of funds can be a big challenge in the usage and development of e-content for classroom teaching. Inadequate budget related to technology in universities creates a major barrier to the efficient usage of e-content. The university funds allocation for various e-learning activities like purchase of hardware and software, maintenance of the same, e-content development, training of the teachers for usage and development of e-content for classroom teaching if are insufficient then the teachers and the administrators have to depend upon the donor funding which may not be relied upon for constant up-gradation of technology. Thus, finance becomes the major hurdle in the way of having a proper environment for the usage and development of e-content for classroom teaching.

1.9.3. *Environmental Challenges:*

The environmental challenges like the teacher's inclination to use technology for the classroom teaching, the motivation amongst the various stakeholders of the education system like administrators, student's parents for the e-content if being used for classroom teaching and learning. The facilities which are available and accessible related to e-content usage and development. The environment if not appropriate, then it creates hindrance in the usage and development of e-content. The administrators of the universities are not interested in giving priority to technological up-gradation, then the teachers may feel the pinch of it and thus may face hurdles in the usage and

development of e-content. According to Awidi (2008), the university must have clearly defined strategic plans that spell out e-learning policies and implementation strategies. This firm groundwork done to establish certain policies related to e-content may help the teachers to use the e-content and develop it for classroom teaching.

1.9.4. *Technical skills of teachers:*

Lack of relevant technical and radical skills on e-content development and usage by the teachers may throw challenges, hindering its usage in classroom teaching. Teachers may have basic skills in computer usage, but such skills may not be adequate to use e-content for teaching. Thus, rigorous training is required in these directions. Many teachers willingly undergo training like in-service training programs, workshops capacity building programs to learn the skills required for the usage and development of e-content. However, there are other teachers who despite training are not ready to use or develop e-content for classroom teaching. According to Wanyembi (2002) found in a survey done in Kenya that most of the academicians in universities have low ICT and e-learning skills because most of them were trained in the absence of an ICT environment. Thus, the teaching through e-content skills of teachers is a critical component necessary for the successful implementation of e-content for classroom teaching. The teaching skills of teachers thus throw grave challenges in the usage and development of the e-content for classroom teaching.

1.9.5. *Attitude of teachers to use e-content for teaching:*

Lack of interest and commitment among the teachers to use e-content is another challenge hindering its use. The use and development of the e-content take extra time, effort, and rigor of teachers. University teachers are loaded with teaching, research, extension, and administrative responsibilities, so converting their courses to e-content is perceived as an additional load, without any perks. In support of this, Khan et. al. (2012) also found out that if teachers want to successfully use technology in their classes, they need to possess a positive attitude to the use of technology.

Thus, the positive attitude of teachers for usage and development of e-content in teaching may help in creating a pro-environment in implementing e-learning in university. Thus, if the above-mentioned challenges in usage and development of e-content for classroom teaching are addressed well, then successful implementation of e-learning can easily be achieved. Apart from expansion of ICT-related infrastructure,

budgetary allocation for a technical environment of the university, formulation of appropriate e-learning policies, the readiness of teachers to utilize optimally the above-mentioned factors is of utmost importance. Hence, it is imperative to access the teacher's readiness to use and develop the e-content for their classroom teaching. The present research proposed to dwell on the following questions, which needed to address:

1. Are the teachers of the Maharaja Sayajirao University of Baroda, Vadodara ready to use the e-content for their teaching?
2. What are the various factors which affect their readiness for the usage of e-content for their teaching?
3. What are the computer and internet-related technical competencies of the teachers?
4. Are university teachers interested in using e-content for teaching?
5. What is the knowledge level of the university teachers regarding e-content?
6. What are the challenges the teachers are expecting in the usage of e-content for their teaching?
7. What are the suggestions for increasing the readiness of the teachers to use the e-content for teaching?

1.10. STATEMENT OF THE PROBLEM

Keeping in mind the aim of discussion a study was planned, entitled "A study on readiness of the teachers of the Maharaja Sayajirao University of Baroda, Vadodara, regarding usage and development of e-content"

1.11. JUSTIFICATION OF THE STUDY

The rapid proliferation of technological advancement into the educational system witnessed the change in the face of higher education over the decades. Rosenberg (2001) expressed that since the 1990s it has become increasingly clear that we are living in the information age and our society are becoming knowledge-based. The biggest growth on the internet and the area that will prove to be one of the biggest agents of change will be learning. Instructional content or learning experiences given or enabled by electronic technology are referred to as e-learning. Cruthers (2008) said that in today's technologically driven age, e-learning has become an important tool enhancing the delivery, interactional facilitation of both teaching and learning processes. Tuparova et. al. (2006) expressed that e-learning is a combination, implementation, and relationship of the activities for learning and teaching via different

electronic media. These technologies have extensive potential to be used for many forms of education like formal and nonformal educational forms such as distance and open learning. Tuparova et. Al. (2006) "Teacher's attitude towards e learning courses in Bulgarian universities published in journal current developments in technology-assisted education." Main fold benefits, as well as a tremendous advancement in technological developments in this field, have forced higher education institutions to utilize its advantages for teaching, research, and community outreach. Powell (2000) highlighted those advantages such as asynchronous training, training at an individual pace, just-in-time training, and cost-effectiveness lure the institutions to e-learning. Wannemacher (2006), said that universities should be ready to adopt e-learning systems to improve learning as well as to gain a competitive advantage. Many researchers worldwide believe that technologies used will enhance the quality of education, as it offers tremendous opportunities for increasing the efficiency and effectiveness of education in the future Krishnakumar (2011) and Navani and Ansari (2016) elaborated that because of the rapid advancements in information and communication technology (ICT) coupled with the gradual and regulated expansion of the telecommunication sector, the increasing adoption of e-learning in higher educational institutions is gaining momentum in India also as globally. The introduction of ICTs in higher education has huge implications for the whole education process ranging from investment in ICT infrastructure to the use of technologies in dealing with Access, equity, administration, efficiency, pedagogy, and educational quality are all important challenges. In the 21st century, e-learning has emerged as the new paradigm of modern education combing the online segment with the conventional face-to-face component. It is now recommended as an alternative mode of teaching and learning in most of the higher educational institutes of our country. The evolution of the internet and advancement in information and communication technology has led to the emergence of the latest approaches in teaching, learning, and training. Thus, these situations possess a challenge to the teachers as students are exposed to enormous rich sources of information and vast expertise from various parts of the world. Therefore, teachers as important stakeholders of the educational system must gear up to accept and adopt the skills for adapting and implementing e-content for their teaching to provide worldwide exposure to the students of higher education. Teachers play a crucial role in integrating ICTs for teaching, bringing transformations in the curriculum, and bringing the e-learning system into the mainstream of educational programs. Thus, the need of the hour is that

all the higher educational institutes, be it colleges or universities gear up, to adapt this technology completely for its usage in the education sector. The reorganization process emphasizes the importance of embracing ICT integration to enable learners to thrive in a global world. Odunaike et.al. (2013) expressed that although the need to implement e-learning is critical, there is also a need to recognize the fact that the process of implementing e-learning in an institutional setting and inserting it into the tutorial context of a university may be a complicated endeavor. It requires not only a robust technical infrastructure to support the delivery of the e-learning courses but more importantly, the complete acceptance of it would-be users as well, for example, faculty members and students. Before implementing technology-enabled education, it is necessary to identify obstacles and issues so that solutions can be found. Such planning entails a complex process that ideally should be institution-specific. In line with this, the teacher's readiness to use e-content for their teaching is critical because it provides key information on the characteristics of the students to enable and to decide in areas that need to be improved to access the maximize the success of e-learning initiatives. Lowther, et. al. (2008) expressed the need for teachers' readiness to use e-content for teaching primarily apart from institution's readiness in terms of infrastructure, technological readiness, environment readiness, financial readiness, and content readiness. That readiness of teachers is defined as teachers' perception of their capabilities and skills required to integrate the technology into their classroom teaching. This is the important factor that has a direct impact on technology integration. Machado (2007), explained e-readiness in the context of higher education as the ability of higher educational institutions and the capacity of institutional stakeholders to generate learning opportunities by facilitating computer-based technologies. Thus, the institutions, as well as the teacher's readiness, are crucial for a technology-driven educational system. Thus, the assessment of the responsible variables influencing the e-readiness of the teachers and their environment, finance, technology, and content of the courses need to be reached well. Apart from these certain demographic variables like age, educational experience, gender, knowledge regarding e-content, technological competencies, interest in e-content are considered important in assessing one's readiness for using e-content for their teaching. Teachers need to utilize the internet, collaborate with peers, and interact with trainees for assistance, teacher's readiness should be assessed before they the institutions.

Therefore, the present investigation sought to establish the readiness of the teachers of the Maharaja Sayajirao University of Baroda, Vadodara in integrating e-content in their teaching. Thus, such kinds of studies can be primarily the starting point for any educational institution that aspires to implement this technology into their educational system.

An extensive review of literature of the readiness of the university teachers for the usage of e-content for their teaching was conducted. Many attempts have been made in systematic research investigations across the world to find out the e-readiness of teachers. Countries like Malaysia, Iran, Turkey, Afghanistan, Bulgaria. Nigeria, Kenya, Sudan, Vietnam, Ghana, Nairobi, China have conducted e-learning readiness surveys, assessment of e-learning readiness, analytical studies on technology integration in education by teachers, studying attitudes and perceptions of teachers in higher education towards e-learning, higher learning, adoption of learning among instructors.

However, a dearth of similar research was found in India. Very few attempts have been made in studying the readiness of teachers from Indian universities.

The review of literature in this field when persuaded did not highlight even single research. Study on the investigation over the readiness of the Maharaja Sayajirao University teachers towards usage of e-content for their teaching. Therefore, the present investigation entitled "A Study on Readiness of The Teachers of The Maharaja Sayajirao University of Baroda, Vadodara, Regarding Usage and Development of e-content for their classroom teaching", is planned. This study will be carried out to understand the various factors which may affect the teacher's readiness for the usage of e-content for their teaching. The personal factors like the age of the teacher, their areas of specializations, their computer and internet-related technical competency, their knowledge about the e-content, their interest in e-content will be studied concerning their overall readiness towards usage of the e-content for their teaching.

Further, it is also planned to study the readiness of teachers from various aspects like environment, technology, financial and content of the course. Many models have been identified to assess the e-readiness of the teachers like the Chapnick (2000) e-learning readiness model, Borotis and Poulymenakou (2004) e-learning readiness model, Psychaeis (2005) e-learning readiness model, Aydin and Tasci (2005) e-learning readiness model, etc.

All these models have highlighted the various criteria for assessing readiness. The common factors are environmental readiness financial readiness, technological readiness, and content readiness. Thus, these four aspects have been planned to incorporate in the present investigation. Thus, the findings of the study may give directions for setting implications in terms of robust actions which can be initiated at the Maharaja Sayajirao University of Baroda. The government of India, Ministry of HRD, and University Grants Commission have taken up initiatives to integrate technology into higher education. Several national and state-specific schemes have led ICT initiatives at Indian Universities. National Educational Alliance for Technology (NEAT) platform will provide extensive use of technology not only for teaching research extension but also for planning and administration of educational data at both school and higher education. The main forces of the technological interventions will be on improving the teaching-learning environment and making it efficient enough to compete with the world-clad education system.

For this, optimum utilization of technology, various pilot projects at the higher education level have been initiated to ensure the maximum advantage of ICT for quality education for all in India. Thus, the present investigation is planned in such a manner that the findings can highlight the factors responsible for the readiness of university teachers in using e-content for teaching concerning the institution's readiness, technological readiness, financial readiness, and content readiness. Thus, the results may highlight the areas in which integrated efforts have to be made to upscale the usage and development of e-content for teaching. Further, the present study will also bring to the surface the various expected challenges which teachers might face in the usage of e-content for their teaching. Also, the suggestions and recommendations will be sought by the university teachers in improving the usage and development of e-content by them for their teaching.

1.12. JUSTIFICATION FOR THE SAMPLE

Good teachers can interact with students and to facilitates their development. Technical skills of teaching are specific aspects of teaching behavior that are considered to be particularly effective in facilitating desired learning in students. Technology is a tool of a teacher's mere provision of sophisticated technical devices does not ensure effective teaching. It is possible only through active manipulation by the teachers that technology is put to the right use.

In the present investigation, the teachers are the respondents as they are the important element in the educational network and the success of usage and development of e-content would depend upon the teachers as they are the ones who select content for the teaching-learning process.

The formal education system, the world over is fast growing and is just not confined to the four walls of classrooms only. It is a global phenomenon that with the introduction of the technology-based education system, students, teachers, parents, administrators, experts, all are connected online and participate in the teaching-learning process. Thus, the educational system is establishing itself in the digital world order. In this context, the roles of teachers specifically are in transition. Transformation in their roles specifically regarding technology for fulfilling their responsibilities is witnessed. Apart from having the characteristics like passion for teaching, considerate, motivated, subject matter expertise, students' friendly attitude, teachers now are also expected to have passion for technology, knowledge related to the use of technology for its, usage is teaching profession, favorable perception for technology, relevant competency to use technology effectively along with a sense of commitment to perform efficiently as a teacher in their classes.

Thus, the teachers should be ready for the technology-based teaching-learning process. The e-content usage for classroom teaching is the recent technology observing process. The e-content used for classroom teaching is the recent technology-based advancement, which is considered extremely effective. The university grants communication has emphatically stressed the usage of e-content by teachers for teaching. Many training programs, workshops, conferences have been assured from time to time under the UGC for the university and college teachers. The New Educational Policy 2020, advocates the use of technology. The ministry of human resources development, emphasizes the use the technology in education planning, teaching, learning, and most essentially in assessment. NEP 2020 policy highlights that technology is expected to impact education in multiple ways with the support of technology-savvy teachers, technology integrated education curriculum at all levels, so as a develop professionals who can complete at the international landscape. Thus, by encouraging the teachers to become technology savvy, who can bridge the gap between the current state of learning outcomes and what is required by undertaking major reforms, the NEP to take the Indian education system at par with international standards.

Moreover, in the current pandemic situation, when virtual teaching replaced the conventional style of teaching-learning both students and teachers were forced to use technology. This will be the introduction of NEP 2020 and the pandemic; the teachers had to mandatorily learn and use technology for the teaching-learning process. NEP 2020 also envisages the establishment of the National Educational Technology Forum, which may prove to be instrumental in motivating teachers to integrate technology into education.

Keeping in mind the above points it was decided to take the university teachers as the respondents for investigating their readiness to use and develop e-content for their teaching.

1.13. JUSTIFICATION OF THE STUDY IN THE CONTEXT OF THE DEPARTMENT OF EXTENSION AND COMMUNICATION

The Department of Extension and Communication offers various courses under different programs of study including Graphic Aids, Group communication in Family & Community Sciences, IEC for development, Computer Application Designing, Media Production, Electronic Media, and New Technology in education, etcetera under the thrust area of Development Communication. Similarly, department students under the guidance of the teacher's research to find out the effectiveness of different teaching aids, to study the impact of various technologies in formal and non-formal education, and many more. The department also organizes various seminars, workshops to help the teachers to know about the various methods, strategies that can be used for effective teaching and learning process. Thus, the present study may help impart the suggestions of university teachers regarding the usage & development of e-content for classroom teaching.

Many studies had been conducted in the past, on teachers and their use of new technologies for classroom teaching at school and university levels.

The latest innovation in the field of technology specifically for education is the usage and development of e-content for classroom teaching. So, the present study with the main objective to study the readiness of the Maharaja Sayajirao University teachers regarding the usage and development of e-content for their teaching is in this direction only. This study may through light upon the readiness level of the teachers, the expected challenges which may come in their way of teaching through e-content, and also will highlight the suggestions by teachers for the effective usage of e-content for teaching.

Moreover, not a single study on teachers' readiness for e-content usage & development and its related problems has been conducted in the department. Therefore, the present student may help to throw light on the optimum usage of e-content at higher education level through studying teacher's readiness for it.

1.14. JUSTIFICATION OF VARIABLES

- **Age:**

It is important to consider the effect of the age factor. Young Teachers may demonstrate readiness in integrating e-content as a tool, in the process of teaching and learning, because of their exposure to technology in different spheres of life, in comparison to their older counterparts. Further, less responsibility of academic nature, on the young teacher may give freedom of time to them for the usage & development of the e-content, widely. However, older teachers may have more responsibility due to their academic experience and position, which may give less opportunity and time to explore and experiment with new educational technology for their classroom teaching. The older teacher may also have less motivation to learn the usage & development of e-content, because of their less flexible nature. They may not be ready to face the problems that occur during the use & development of e-content; hence the usage may be less. Teachers of older age may feel comfortable with print media in comparison to the use of e-content, which may lead to physical, and mental strain. Pressures of administrative work may diminish the scope for the use and development of e-content for teachers of old age. It is also important to have the availability of ICT infrastructure, accessibility to ICT facilities in the collages, their connectivity to the internet will lead to more usage of e-content in classroom teaching. This will lead teachers to use e-content for teaching, low cost of education, high quality of education, and increased educational output since many people would have easy access to education. Therefore, the age of the respondents has been taken as one of the variables of the study.

- **Status of Job:**

The status of the job for the present investigation refers to whether the selected university teachers are permanent or temporary faculty members. The teachers with a permanent job might be motivated to work hard and prove their efficiency in their profession. Thus, it is likely that permanent teachers might be inclined to use technology specifically the e-content for their teaching. At the same time, the teacher

who does not have permanent jobs might be thriving to prove their contribution in the profession and so may be ready to use e-content for their classroom teaching. Further, the permanent teachers have many-fold responsibilities. Apart from teaching, they are involved in loads of administrative responsibilities, thus it is likely that such teachers may not be ready to use e-content for their teaching in comparison to their counterparts.

Moreover, the use of technology specifically the use of e-content for teaching requires experience of teaching, commitment, and also good command over the subject matter. This is generally achieved after years of involvement with the educational system.

Thus, teachers with permanent jobs might have vast experiences related to the education system Like experiences related to infrastructure facilities, technical help, the flexibility of the subject content to be taught through the use of technology and hence they may be ready for the use of e-content for their teaching. Therefore, it was felt important to take the status of the job as an independent variable to study the readiness of university teachers in the usage of excellent for their teaching.

- **Area of Specialization:**

Area of Specialization plays a vital role in analyzing the extent of the usage & development of e-content in classroom teaching. Different fields of science, technology, medicine, a pharmacy may differ in comparison with the field of Social Science and Humanities**.** The extent of usage & development of e-content in pure science and Computer science may differ. Teachers from the field of Medicine and Technology may rely more on information communication technology to get the latest information regarding new inventions in their field. The scope of usage & development of e-content in different fields of social science may be restricted because of the nature of the field. Social science is a field where teachers share facts and live examples of human studies in the classroom with students, they have to do practical work at the grassroots level, whereas in the journalism field there is a scope of high usage of e-content because teachers need to share worldwide information with students for gaining more practical experience of the subject. In the journalism field, many subjects lead to maximum usage & development of e-content but they also have to do field visits for collecting facts. Internet and Computer usage in education is an effective, easiest, fastest even economical way of Communication.

Specific subjects in the fine arts and arts field may have better and easy availability of the variety of e-content because of the suitability of literature, where teachers can explore worldwide arts and related information with one click. On the other hand, teachers from the field of literature, commerce, management studies may rely more on print media due to the theoretical nature of the study. Occasionally teachers may face accessibility issues due to technological and technical barriers in the institution. It is also important to investigate the technological readiness of the teachers and institutions about the available technological systems that are provided and the way they are used.

Another aspect is Course content, if the specific subject allows teachers for using e-content then there may be a high level of usage and development of e-content but if the lack of technology and resources is still a serious limitation then it may reduce the scope of e-content usage & development. Human readiness refers to the knowledge and the skills of the teachers related to the usage and development of e-content. It is equally important that to what extent teachers of a different area of specialization will be ready to learn and use e-content technology for their classroom teaching.

Moreover, less availability of materials in e-content on above-mentioned fields in direct and concrete form may add to the infrequent less usage & development of e-content. It will be interesting to find from researches of different areas of specializations their different opinions and problems about usage and development of e-content for classroom teaching. Therefore, it was felt necessary to know whether the Area of Specialization brings variation in usage & development of e-content in the teachers for their teaching.

- **Teaching Experience:**

The extent of utilization of e-content by teachers may vary in proportion to their experience of teaching. Teachers with more experience in teaching have more confidence and command over their subject, which can motivate them to use & development various e-content for their classroom teaching. Teachers with more teaching experience may commit fewer mistakes while developing e-content for their courses because of subject expertise and may handle problems occurring while teaching through e-content. Teachers with more teaching experience may handle problems effectively. Experienced teachers may encourage the students for using e-content for their studies. They may be independent in using e-content because of more exposure.

Experienced teachers may create new inventions and may be able to develop reference materials on e-content. On the other side teachers with more teaching experience may not feel comfortable using and developing e-content because of less technical competency in computers and the internet. Teachers may feel more comfortable with traditional modes of teaching techniques Navani and Ansari (2016) concluded in the study entitled "A study of e-learning readiness of university faculty" that, those teachers who are senior (higher designation) and have high educational qualifications do not think positively that e-learning can make an impact on learning outcomes. This is also a reflection of the generation gap.

However, if teachers have less teaching experience, they may be less exposed to the subject matter as well as less experienced in using and developing e-content for classroom teaching. Their usage & development of e-content may be less for teaching purposes, but they may be more experienced in computer and internet-related competencies, through which they can use e-content more easily in comparison to more teaching experienced teachers. The less experienced teacher may have less confidence and may commit more mistakes and may not be able to handle the problems efficiently but less experienced teachers may be young and energetic to learn about new technologies for their classroom teaching. Thus, it may be interesting to study the usage & development of e-content by the teachers, concerning their teaching experiences.

- **Computer & Internet Usage:**

Computer and internet usage may differ with the type of User. It may be possible that high computer and internet user teachers, take more help of computer and internet for their work related to their subject or related to administrations work. Teachers having better exposure to various sources of e-content may use more computers and the Internet. As they are heavy users, they may have more command and expertise in their subject matter, they may be independent in using & developing e-content related to their subject and operate it with more confidence. Being heavy computer & internet users, they may face more problems and may be able to tackle the problems too. On the other hand, it may be possible that the low computer and internet users may not have more knowledge and exposure related to computer functions and the internet. Hence, it was decided to study the readiness of the teachers with regards to their computer and internet usage.

- **Computer and Internet-related Technical Competency:**

Technical competency may prove to be a great factor responsible for the usage of technology. More the computer and internet competency more may be the readiness to use it. The proficiency of using technology can contribute to the motivation of students, dynamic and interesting classroom environment. Thus, making the teaching-learning process more productive. A lot of information, ability, mentalities, and attributes are expected to play out a profession or a productive part in a viable manner. Similarly, Competence can be thought of as a personal characteristic. It can be linked to a specific accomplishment in the presenting of an assignment.

The computer and internet-related competency amongst the teachers of higher education is a necessary and important achievement for teachers. As the education system is witnessing a change in the teaching-learning environment because technology is playing a vital role as a strong agent in bringing a revolution in many educational practices like teaching, examinations, fee payments, assessments, etc.

Thus, the university teacher's readiness for using e-content for their teaching may differ based on their competency related to computers & the internet. Competent teachers may be ready for the usage of e-content for teaching in comparison to their counterparts. Thus, it felt important to take the computer & internet-related technical competency as an independent variable and check whether it creates any difference in the readiness levels of the teachers concerning usage of e-content for their teaching.

- **Perceptions towards Technology:**

With the proliferation of technology in the education system, the world has witnessed vast changes in the teaching-learning process. This rapid growth and effectiveness of the various have led to the diffusion of technology in the education system. Teachers, as well as students, are getting tuned to the usage of technology for giving and receiving knowledge. Teachers' readiness for adopting technology like e-content for their teaching, depends upon many factors like their knowledge regarding content, their interest in content development, their perception towards technology, etc. Many studies have highlighted the importance of teachers' beliefs, attitudes, and experiences for successful integrating of ICT in the classroom, expressed Zehra and Bilwani (2016) in an article entitled "Perception of teachers regarding technology integration in the classroom: A comparative Analysis of elite and mediocre schools.

Teachers are made to realize the potential of technology in enhancing the understanding of the course content. Teachers must accept the technology for their classroom teaching. It would be a futile exercise, if the schools, universities are well equipped with technology but teachers are not prepared to adopt it for classroom teaching. Many research studies across the world have proved that the teachers' use of technology is the key determining factor for improved students' performance in knowledge acquisition and skill development, quoted by Kumar, et. Al., (2008) in an article entitled "Teachers readiness to use technology in the classroom: an empirical study".

Thus, it was felt important to consider the favorable or unfavorable perception towards e-content, since even if teachers exhibit proficiency in the use of technology for classroom teaching, but do not believe in the technology favorably, then they may not be ready to use it. further, the compatibility of the technology i.e. e-content specifically among the teachers has an unswerving impact on a teacher's perception of technology.

- **Knowledge Regarding e-content:**

One's readiness to take up any task or do something depends quite a lot upon one's awareness, that is knowledge. If one possesses knowledge regarding anything then one would be ready to use it. Further one's attitude towards technology also depends upon how much is one's knowledge regarding it.

Teachers with more knowledge regarding e-content would be ready to use the technology for their teaching in comparison to their counterparts. Knowledge of e-content might create interest in the e-content and the teachers might be motivated to use it as well. However, at times it may also happen that teachers with high knowledge regarding e-content might not be to use e-content in their teaching due to other factors like technological facilities, not so proactive environment of the department to use e-content for teaching, lack of funds available in the department or due to of the course content, to convert into e-content, etc. Thus, it was felt important to study the readiness of the teachers for using e-content for teaching concerning the teacher's knowledge regarding content.

- **Interest in e-content for teaching:**

Interest is an individual's preference to engaging in a particular type of work or activity in preference to another type of work or activity. It is an aspect of behavior. Usage of the technology by the teachers for teaching may depend upon the interest they have in technology. Teachers with a higher interest in e-content may be ready for its usage in their teaching. Interest is directly proportional to motivation, which contributes to the usage. If a teacher is interested in e-content then one will be motivated and ready to use it for one's teaching. However, at the same time, a teacher with a high interest in the e-content may not feel ready to use it for teaching, probably due to the lack of technical facilities available in the institution.

On the other hand, the teachers with low interest in the e-content may not be ready for its use in the classroom Pressure from UGC to use the technology in the classrooms, may create difficulties for teachers with less interest in e-content, to shift from print culture to electronic culture. Thus, it was felt important to study the usage of e-content by the teachers concerning their interest level.

1.15. OBJECTIVES OF THE STUDY

1. To study the profile of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara.
2. To study the overall Readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, regarding the usage of e-content for their teaching.
3. To study the overall readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara regarding the usage of e-content for their teaching, in relation to the following variables:
    a. Age
    b. Status of Job
    c. Area of Specialization
    d. Teaching Experience
    e. Computer & Internet Usage
    f. Computer & Internet related Technical Competency

g. Perception towards Technology

h. Knowledge regarding e-content

i. Interest in e-content for Teaching

4. To study the significant differences in the overall readiness of the selected teachers from Maharaja Sayajirao University of Baroda, Vadodara, regarding the usage of e-content for their teaching in relation to the following variable:

   a. Age

   b. Status of Job

   c. Area of Specialization

   d. Teaching Experience

   e. Computer & Internet Usage

   f. Computer & Internet related Technical Competency

   g. Perception towards Technology

   h. Knowledge regarding e-content

   i. Interest in e-content for Teaching

5. To study the readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, regarding the usage of e-content for teaching in relation to the following aspects:

   a. Environment aspect

   b. Financial aspect

   c. Technological aspect

   d. Course Content aspect

6. To study the Readiness level of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Environment aspect in relation with self, regarding the usage of e-content for their teaching, in relation to the following variable:

   a. Age

   b. Status of Job

c. Area of Specialization

d. Teaching Experience

e. Computer & Internet Usage

f. Computer & Internet related Technical Competency

g. Perception towards Technology

h. Knowledge regarding e-content

i. Interest in e-content for Teaching

7. To study the significant differences in the readiness of the selected teachers from Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Environment aspect in relation with self, regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

    d. Teaching Experience

    e. Computer & Internet Usage

    f. Computer & Internet related Technical Competency

    g. Perception towards Technology

    h. Knowledge regarding e-content

    i. Interest in e-content for Teaching

8. To study the Readiness level of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Environment aspect in relation with the department, regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

d. Teaching Experience

e. Computer & Internet Usage

f. Computer & Internet related Technical Competency

g. Perception towards Technology

h. Knowledge regarding e-content

i. Interest in e-content for Teaching

9. To study the significant differences in the readiness of the selected teachers from Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Environment aspect in relation with the department, regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

    d. Teaching Experience

    e. Computer & Internet Usage

    f. Computer & Internet related Technical Competency

    g. Perception towards Technology

    h. Knowledge regarding e-content

    i. Interest in e-content for Teaching

10. To study the Readiness level of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Financial aspect regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

    d. Teaching Experience

e. Computer & Internet Usage

f. Computer & Internet related Technical Competency

g. Perception towards Technology

h. Knowledge regarding e-content

i. Interest in e-content for Teaching

11. To study the significant differences in the readiness of the selected teachers from Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Financial aspect, regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

    d. Teaching Experience

    e. Computer & Internet Usage

    f. Computer & Internet related Technical Competency

    g. Perception towards Technology

    h. Knowledge regarding e-content

    i. Interest in e-content for Teaching

12. To study the readiness level of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Technology aspect in relation with self, regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

    d. Teaching Experience

    e. Computer & Internet Usage

f. Computer & Internet related Technical Competency

g. Perception towards Technology

h. Knowledge regarding e-content

i. Interest in e-content for Teaching

13. To study the significant differences in the readiness of the selected teachers from Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Technology aspect in relation with self, regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

    d. Teaching Experience

    e. Computer & Internet Usage

    f. Computer & Internet related Technical Competency

    g. Perception towards Technology

    h. Knowledge regarding e-content

    i. Interest in e-content for Teaching

14. To study the readiness level of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Technology aspect in relation with the department, regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

    d. Teaching Experience

    e. Computer & Internet Usage

    f. Computer & Internet related Technical Competency

g. Perception towards Technology

h. Knowledge regarding e-content

i. Interest in e-content for Teaching

15. To study the significant differences in the readiness of the selected teachers from Maharaja Sayajirao University of Baroda, Vadodara, with respect to the technology aspect in relation with the department, regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

    d. Teaching Experience

    e. Computer & Internet Usage

    f. Computer & Internet related Technical Competency

    g. Perception towards Technology

    h. Knowledge regarding e-content

    i. Interest in e-content for Teaching

16. To study the readiness level of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Course Content aspect regarding the usage of e-content for their teaching, in relation to the following variable:

    a. Age

    b. Status of Job

    c. Area of Specialization

    d. Teaching Experience

    e. Computer & Internet Usage

    f. Computer & Internet related Technical Competency

    g. Perception towards Technology

    h. Knowledge regarding e-content

    i. Interest in e-content for Teaching

17. To study the significant differences in the readiness of the selected teachers from Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Course Content aspect, regarding the usage of e-content for their teaching, in relation to the following variable:
    a. Age
    b. Status of Job
    c. Area of Specialization
    d. Teaching Experience
    e. Computer & Internet Usage
    f. Computer & Internet related Technical Competency
    g. Perception towards Technology
    h. Knowledge regarding e-content
    i. Interest in e-content for Teaching
18. To study the Expected Challenges for using e-content for teaching by the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara.
19. To seek Suggestions from the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, for the usage of e-content for their teaching.
20. To study the Readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara regarding the development of the e-content for teaching.

1.16. NULL HYPOTHESES OF THE STUDY

1. There will be no significant differences in the overall readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, regarding the usage of e-content for their teaching.
2. There will be no variable-wise significant differences in the readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Environment aspect in relation with self, regarding the usage of e-content for their teaching.

3. There will be no variable-wise significant differences in the readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Environment aspect in relation with the department, regarding the usage of e-content for their teaching.
4. There will be no variable-wise significant differences in the readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Financial aspect, regarding the usage of e-content for their teaching.
5. There will be no variable-wise significant differences in the readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the technology aspect in relation to self, regarding the usage of e-content for their teaching.
6. There will be no variable-wise significant differences in the readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the technology aspect in relation to the department, regarding the usage of e-content for their teaching.
7. There will be no variable-wise significant differences in the readiness of the selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara, with respect to the Course content aspect, regarding the usage of e-content for their teaching.

1.17. ASSUMPTIONS OF THE STUDY

1. The selected teachers from The Maharaja Sayajirao University of Baroda, Vadodara, will Opine on their readiness regarding the Usage of e-content for their teaching.
2. The readiness regarding the usage of e-content for their teaching by the selected teachers from The Maharaja Sayajirao University of Baroda, Vadodara will vary, according to the following variables:
    - Age
    - Status of Job
    - Area of Specialization
    - Teaching Experience

- Computer & Internet Usage
- Computer & internet related technical competency
- Perception towards Technology
- Knowledge regarding e-content
- interest in e-content for teaching

1.18. DELIMITATION OF THE STUDY

1. The study will be delimited to selected Teachers from the Maharaja Sayajirao University of Baroda, Vadodara.
2. The study will be delimited to find out the Readiness of teachers, selected from the Maharaja Sayajirao University of Baroda, Vadodara will be in terms of Usage and development of e-content for teaching.
3. The study will be delimited to the following aspects in terms of studying their readiness regarding the usage of e-content for teaching.
    - Environment aspect
    - Financial aspect
    - Technological aspect
    - Course Content aspect

1.19. OPERATIONAL DEFINITIONS

1. **e-content:** In the present study, 'e-content' refers to the content or information available over network-based electronic devices. It can be in any form like digital textbook/e-book, e-articles, e-videos, e-lectures, e-journals, e-slides. 'e-content' is interactive, customized, and allows social collaboration.
2. **Teachers' Readiness for e-content usage and development:** it refers to the mentally and physically state of teachers' readiness in which they are prepared to receive the benefits of electronic contents usage and development for classroom teaching.

3. **Environmental readiness related to self:** refers to teachers' self-motivation, willingness, interest in e-content, technology-oriented capabilities and skills, experiences of using technology, readiness to devote personal time, progressive nature to use new technology.
4. **Environmental readiness related to the department:** Having the department environment in terms of supportive, motivating culture, and productive approach of the department to adopt and use e-content, appreciation by the head for showing interest in the educational technology, preparing teachers for the usage of e-content.
5. **Financial Aspect:** Refers to the budget allocation for user-friendly and developing e-content friendly environment at both the level, i.e., Department and University.
6. **Technology readiness related to self:** refers to availability and accessibility of software, proper technological infrastructure, stable internet connection, etc.
7. **Technology readiness related to the department:** refers to Software; Hardware, upgraded hardware labs, internet connectivity, electricity, Flexibility of the system; Technical Skills, and Support staff availability in the department.
8. **Course Content Aspect:** Refers to the flexibility of content, suitability of the subject area for e-content, digital reference resources for developing and using e-content for classroom teaching.