

# Designing online course for Students of Family and Community Sciences/ Home Sciences – An Experiment in Social Sciences

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**Abstract:** India higher education system is expanding to reach out to the demands of students. The characteristics of e-learning anyone, anytime and anywhere helps to cater the needs of today's Indian higher education demand. To make an effort in the same direction an experimental study was conducted of designing an online course for undergraduate students of family and community sciences discipline. An experimental study was conducted using pre-post experimental design. Blended learning method was used to teach 95 first year students of faculty of family and community sciences, the Maharaja Sayajirao University of Baroda, Vadodara. The major finding of the study revealed that there was significant difference in gain in knowledge of the students studied through the designed online course. Not many studies are conducted in the area of e-learning and social sciences, this would be a contributory study to take up future researches in the same area.

**Keywords:** Higher Education, Online Course.

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## 1. INTRODUCTION

Higher education has major three focus areas teaching, research and extension. It is the source in all walks of life and therefore supplies the much-needed human capital in management, planning, design, teaching and research. Scientific and technological advancement and economic growth of a country are as dependent on the higher education system as they are on the working class. It also provides opportunities for learning at every phase of life, allowing people to upgrade their knowledge and skills from time to time based on the societal needs (NAAC, 2006). The report of the UNESCO International Commission on Education in the 21st Century titled "Learning: The Treasure Within" (popularly known as Delors Commission) emphasized four pillars of education: learning to know, learning to do, learning to live together and learning to be. While, higher education intends to imbibe all these four in individuals and the society, the report highlighted the following specific functions of higher education too:

- To prepare students for research and teaching;
- To provide highly specialized training courses adapted to the needs of economic and social life;
- To be open to all, so as to cater to the many aspects of lifelong education in the widest sense; and
- To promote international cooperation through internationalization of research, technology, networking, and free movement of persons and scientific ideas (UNESCO, 1996).

After China and United States of America Indian Higher Education system is the third largest in the world. It has expanded at a fast pace by adding nearly 20,000 colleges and more than 8 million students in a decade from 2001 to 2011.

The focus on the tertiary level of education lies on science and technology. The Distance Education Council looks after Distance learning and open education - a feature of the Indian higher education system. Indian higher education comprises of both public and private universities, university level institutions and colleges. Most types of educational institutions are financially supported by the Central and the State Governments.

## 2. HISTORY OF E-LEARNING

The higher education system is undergoing fundamental changes over the past few years, with the advent of technology, the teaching and learning processes have evolved from being content specific, to being more student specific. This appropriate delivery trend has accentuated since the turn of the century with the emergence of new forms of distance delivery that draw upon advances in the various information and communication technologies (ICTs). Internet based delivery of education and no longer be regarded as a fad or the realm of the nerd. It is a vital tool in the quest of universities to face their new learner demographic.

In 1960, the University of Illinois initiated a classroom system based in linked computer terminals where students could access informational resources on a particular course while listening to the lectures that were recorded via some form of remotely linked device like television or audio device (Woolley, 2013).

Computer-based learning made up many early e-learning courses such as those developed by Murray Turoff and Starr Roxanne Hiltz in the 1970s and 80s at the New Jersey Institute of Technology, and the ones developed at the University of Guelph in Canada (Hiltz, S., 1990).

In 1976, Bernard Luskin launched Coastline Community College as a "college without walls" using television station KOCE-TV as a vehicle. By the mid-1980s, accessing course content becomes possible at many college libraries.

It is observed that since past two decades the use of ICT has fundamentally changed the practices and procedures of nearly all forms of endeavour within business, governance and mostly in education. A new paradigm of education has emerged which incorporates the normalisation of education as an important factor in the process of development while at the same time focussing on the pace of the learner.

Globalisation plays major role in the factorisation of online learning. The integration of e-learning into the education system is viewed as one of the responses to meet growing need for high quality education.

### **Need for Online Teaching and Learning:**

Over the years, many reasons have come up that has led to a greater demand for e-learning as an alternative method of teaching and learning. Some of them are outlined as below:

- a. **Teachers' shortage:** the quality and quantity of good teachers is a problem that plagues the education system today. Teaching as a profession is not an option for many individuals today.
- b. **A3 (any time, any place, any pace) learning:** (Huang, 2010) This enables the learners to take to studying when he/she feels it is convenient to study. This reduces the pressure to come together at a fixed place at a fixed time period.
- c. **Enhanced learning experience:** e-learning enables a high degree of personalization and a wide range of instructional methods. Powerful simulation environments, multimedia capability and high-end visualization support enables a learner to relate to the subject much more deeply and hence understands well.
- d. **Content creation:** India, despite her IT prowess, is still a poor contributor of content in the Web. Adopting e-learning enables and encourages one to do this naturally, some once work is already online, perhaps with a limited reach and once are comfortable with this, it is a small step to reach out to the world.
- e. **Enhancing quality of teaching:** it goes without saying that e-learning can help in strong networking with other teaching and learning professionals widening the area of subject knowledge. (Kumaresen, 2002)
- f. **More systematic feedback and evaluation:** Bringing assessment and other activities under e-learning enables to gather much more detailed feedback on various aspects of the course.

### **Benefits of Online Learning:**

Increasingly, organizations are adopting online course as the main delivery method to train employees. At the same time, internet is used by higher education institutions for delivering educational needs to the students on campus and students

joining for distance education. A teacher can teach at anytime and from anywhere. Online materials is easy to update and learners are able to learn the changes at once and have access to updated content. When learners are able to access materials on the internet, it is easier for instructors to direct them to appropriate information based on their needs.

**Multi-access:** Despite teacher, student or tutor, the accessibility of information is made available 24 x 7 days on websites. The challenge part is access of information by users for which project implementers have to update the websites continuously. Adoption of technology in eLearning not only helps the individual but also benefit multiple users at the same time.

- **Speed:** Using electronic resources, Search feature has become quicker and faster to extract the page. Integration of information from one to many, cross-search reference between different publications has become little easy.
- **Functionality:** Starting with content page to Index page with prominent links will ease user navigation skills. e-Resource will also allow user to identify the publication with a single on-mouse click.
- **e-Content:** e-Resources can contain a vast amount of information, but more importantly the material can consist of mixed media i.e. images, video, audio and animation which could not be replicated in print.
- **Storage:** With the increasing storage capacities and multi-variant devices, the ability to store and retrieve large amounts of information has become simple and transparent. Various storage devices like Servers, CD-ROMs, Pen Drives, Hard Disks and Internet Bandwidth are improving their capacities to handle substantial amount of content over the web.

#### **Challenges and Issues of Online Learning for Higher Education:**

The recent statistics reveal that there is a dearth of quality teachers for various education programs in the country. It became a major hurdle in providing quality education to students and achieving socio-economic development of the country. Hence, a set of quality experts contribute to build such content that can be made available on websites of the institutes, accessible to all groups of users. To meet this goal, Government of India has recently issued guidelines for online course development (UGC, 2012). Another hassle in manual content is search feature which is of course, dynamic in online resources. Retrieval of vast content is so quick with online search feature in online course resources. But the challenge lies in the internet penetration which is little slow in India, though we have occupied third position beating Japan recently. Only 14% e-literacy is observed against 74% of literacy rate among the country population. E-Learning and online course both are proportionately related to each other in library domain. Particularly, in distance learning institutions the skills up gradation is becoming compulsory. Essentially, the receiver must also possess thorough knowledge in using these technology based literature and online services. Having insufficient internet bandwidth and power constraints are big challenges in the Indian context. Since the technology depends on expensive tools like server, personal computer, scanner, photocopier etc thus, selection of automation tools will remove economic inequality among the users. A standard tool that can support all the activities of library in a University by providing not only English content but also content that supports other languages going to play a key role (Sharma et al, 2013).

- Inadequate and uncoordinated Information and Communication technology characterized by low access and utilization.
- Lack of formal training in teaching and poor teaching aids/laboratory equipment.
- Sound knowledge of practical examples of use of Open Educational Resources to illustrate key points and up-to-date Knowledge of the arguments for and against use of Open Educational Resources.
- Expertise in technical skills to develop and maintain web platforms to host Open Educational Resources online, as well as to share the content and meta-data with other web platforms.

#### **Importance of Online Content Development:**

Ministry of HRD, Government of India has introduced several online course development programs viz., National Programme on Technology Education Learning (NPTEL) by offering free online video lectures in engineering, science and humanity courses. NPTEL is an open courseware initiative collaboratively started by seven Indian Institutes of Technology (IITs) and Indian Institute of Science (IISc). The objective of this programme is to enhance the quality of

engineering education in the country by developing more than 200 curricula-based video and web courses. EnhanceEdu of IIT Hyderabad is offering teacher training program for engineering college faculty giving importance of electronic content for the Indian society. A Certificate program in Information Technology for engineering college students is also being offered to make them industry-ready in the form of using Learning-By-Doing (LBD) methods. National Mission on Education through ICT, another MHRD initiative that concentrates on developing hands-on workshop and remote learning on electronic stream called 'Virtual Labs'. The objective is to cater both post-graduate and under-graduate students who do not have sufficient infrastructure and lab facilities in the colleges. Through this platform students can participate in this online hands-on workshops. Considering another example of IGNOU, online courses for distance learners was another high quality experiment inspired many other education institutions to deliver online courses in electronic form for students. The advantage of keeping content on Internet is that it helps user to access the information whenever and wherever he want.

### **Evolution of Online Learning Standards:**

Almost every technology has its own standards evolved by different organizations. The Dublin Core was started in 1994 to develop a meta-data framework for web resources. The Dublin Core is a metadata element set intended to facilitate discovery of electronic resources used in museums, libraries, government agencies. In 1997, the EDUCOM consortium (now EDUCAUSE) of US institutions of higher education and their vendor partners established an effort to develop standards for online learning, specifications for metadata. Also in 1997, NIST (National Institute for Standards and Technology) and the IEEE study group began similar efforts. Learning Object Design Learning Management Systems (LMSs) are web-based application platforms used to plan, implement, and assess learning processes related to online and offline training, administration and performance management. LMS are defined as systems to manage learners, keeping track of their progress and performance across all types of learning activities. LMSs provide an instructor a way in which to create and deliver content, monitor learners' participation, and assess learners' performance. In fact many institutions, the Learning Management System may have one or two content-authoring tools. The content-authoring tool is software used to create multimedia content for delivery on the World Wide Web. Instructional design Instructional design is a systematic, repetitive process of activities aimed at creating a solution for an instructional problem. The steps involved in instructional design are; setting an instructional goal; goal analysis; learning domains; learning outcomes; prepare criterion referenced test questions and a clear instructional strategy.(Dasari. S, 2001). The leaning domains are verbal information, intellectual skills, psychomotor skills and attitudes. The instructional strategies may be drill and practice, tutorials, simulations and educational games.

### **Characteristics of Online Course Development:**

According to Anurag Saxena (2011) explained the possible methods of educational online courses conversions are viz.,

- (i) learning by doing and learning by investigation;
- (ii) learning by using themes;
- (iii) learning by testing / evaluation;
- (iv) learning by simulation and
- (v) learning by role-playing.

As per the UGC (University Grants Commission, India) guidelines of online course development needs the following categories viz.,

- (i) home;
- (ii) objectives;
- (iii) subject mapping;
- (iv) summary;
- (v) text with pictures & animations;
- (vi) video and audio;

- (vii) assignments, quiz & tutorial;
- (viii) references, glossary & links;
- (ix) case studies;
- (x) FAQ's;
- (xi) download;
- (xii) blog and
- (xiii) contact.

These categories are arranged sequentially by subject experts along with technical supporters and to develop the online course materials. e-learning is a process and Online course is a product. Online course is generally designed to guide students through lot of information in a specific task. An online course package can be used as a teacher in the virtual classroom situations. The quality of learning depends not only on the form of how the process is carried out but also on what content is taught and how the content is presented. This approach of teaching has become an answer to the complicated problems and un-identified areas. In a class room, technology stimulates the learner and gets the learner involved in the learning. Books are an extension of brain; video is an extension of eye; audio is the extension of an ear; audio conferencing is the extension of mind & vocal chord; computer is an extension of fusion on mind, hands & eyes; satellite technology is an extension of human reach and computer network is an extension of human co-operation. So what we would expect from online courses that it should be able to stimulate the learner in such a way that we utilizes the maximum of its potential in learning (Vijayakumari, 2011) online course is valuable to the pupil and also helpful to teachers for all individual instruction systems; online course is the latest method of instruction that has attracted more attention to gather with different concepts.

The ultimate aim of the online course is abolish the disparity among the learners through effective education. Online course is facilitating to the teacher to effective manner. It is enhancing the learner knowledge level which leads to creative thinking and it gives the future ideas on the basis of given links, and references.

e-learning comprises all forms of electronically supported learning and teaching. The Information and communication systems whether networked learning or not, serve as specific media to implement the learning process. It may be classified as Online and Offline. The online learning occurred through, e-forum, SMS / MMS, Search engines, Meta search engines, e-dictionaries, e-books and e-journals. Whereas the off-line learning occurred through MS Office applications, power-point presentations, downloaded documents and CD ROMs.

We need innovative work in the area online course material as a form of digital literacy in educational settings particularly to investigate the implications of new forms of social networking, knowledge sharing and knowledge building. And finally, because of the pervasive nature of online course as a digital technology, the commercial interest that is invested in it and the largely unregulated content of Internet based sources; we also need to begin to sketch out what a critical digital literacy might look like. There is, in short, plenty to be done if we are to prepare children and young people to play an active and critical part in the digital future. Looking at the above view the research had few questions:

#### **Research Questions:**

- Can e-learning be a solution to issues in Higher Education?
- Can students with minimum exposure to ICT learn through online courses ?
- Can an online course be designed with the use of available software/ open access software?
- Can an online course be implemented/ executed with minimum infrastructure in class?
- Can we develop an online course for undergraduate students?
- Can online learning be implemented effectively with students with heterogeneous background?
- Can students gain higher knowledge by learning through online course than tradition ways?

### **Need of an Online Course for the students of Family and Community Sciences/ Home Science:**

- Majority of the students admitted in the Home Science/ Family and Community Sciences are from Gujarati or vernacular medium schools. Against this phenomena the courses offered at the University are through instruction in English language only. This makes it difficult for the students to grasp.
- It was observed and learnt that the students who college attended college form a heterogeneous group with diverse, languages, past experiences and abilities of perception. They also bring with them different educational backgrounds. Hence they may find the subjects on the curriculum to be as an alien to their knowledge and understanding.
- The semester system, which allows just 90 days to complete the study, poses additional problems to students to a new setup of educational programme. They feel everything is being compressed beyond limits and they feel their pressure badly.
- With all this, absenteeism remains a wide spread temptation amongst girl students' tendency on multiple grounds like responsibility at home, health problems, natural calamities and unrest on the University campus.
- In the recent times, the Family and Community Sciences students have increasingly started taking up part time jobs to shoulder the economic burden of the family and to satisfy other materialistic needs. This may divert their attention from academics.
- Whether out of compelling condition or tendency formation, if students keep away from regular training programmes it will have a seasonal effect on the quality of student graduates that the system churns out. Hence, a need may be felt in the present context to provide an optional way to study at ones own pace. The e-course facilitates a kind of self-study on the part of students in which teachers may view their role as counselors or facilitators.
- For higher education, the needs are diverse as compared to education at schools. More of conceptual information need to be given to students and much of self-learning has to take place. The online course may provide an opportunity to impart conceptual information in detail with facts and figures.
- The students who join Home Science / Family and Community Sciences course, majority of them are Low and average achievers. Their IQ and level of grasping is low. Maximum of high achievers tend to join professional course. Whereas it is assumed that online course may help average and low achievers to learn better and at their own pace to perform better.
- Some of the course which we have are really dry and theory based courses which makes learning quite monotonous and demotivates students to learn those courses, online learning can make such heavy theatrical and dry subject most interesting and easy to comprehend. The gaming and visual may lead to better comprehension of subject and can lead to longer retention of knowledge.

### **Need to Develop Online course on Introduction to Extension and Communication:**

The researcher decided of designing an online course on a foundation course for the students of Faculty of Family and Community Sciences. It was thus, decided to develop a course on "Introduction to Extension and Communication" which is offered to undergraduate students at introductory level. It was decided to develop an online course on this subject as the research has her specialisation in the same discipline and the researcher has taught this subject at undergraduate level for four years. The course is offered to undergraduate students in first year in first semester. The course has both theory and practical aspects. It was decided to develop online course on this subject as students do not have prior knowledge or exposure about the subject during their schooling. The students come from varied background that includes their medium of instruction, their stream of study and their socio-economic status. Thus it was decided to design an online course on subject "Introduction to Extension and Communication".

It was also found that most of the Home Science colleges offer this course at undergraduate level. The base of the course was taken from the outline laid by Department of Extension and Communication, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara. It is an approved course structure from university board of studies. The course offered is (2+1) = 3Credit course. That includes 2 credits theory and 1 credit practical. Looking at the existing course outline learning objectives and learning experiences for the learners were drawn. The language of the course, the reference material and level of difficulty in the course was discussed with the course teachers



of the Department to make it more learner centric. A clear guideline with leaning objectives and outcomes were formatted with the help of course outline and course teachers teaching the same course. The outputs were laid down as guideline and inputs for the design phase.

The first year students are generally the fresh pass out from 12<sup>th</sup> standard from school. They are usually habituated with the formal classroom learning system, where they learn from a teacher. Physical presence of teacher is very essential for students at that phase. They are not at the age and phase of life where they remain responsible for their learning and regulate their study time. Whereas, absence of teacher makes students insecure and inattentive towards learning as they are fresh passed out from school. They are young and excited towards new learning environment. The first year students who are 18 years old are competitive demanding. They are more comfortable and used to the use of new age media. By keeping the above possibilities in mind it was thought of teaching online course in blended mode. Teacher as a complementary aspect of teaching learning process.

### Objectives of the Study:

- ▶ To design an Online course on “Introduction to Extension and Communication” offered to the first year students of Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara
- ▶ To validate the designed Online course on “Introduction to Extension and Communication” offered to the first year students of Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara
- ▶ To study the effectiveness of the designed Online course on “Introduction to Extension and Communication” in terms of gain in knowledge amongst the first year students of Faculty of Family and Community Sciences
- ▶ To study the significant differences in the effectiveness of the designed online course on “Introduction to Extension & Communication” in terms of gain in knowledge within the First year students in relation with the following variables:
  - Medium of instruction at school
  - Stream of Study in Higher Secondary Examination/ Equivalent
  - Level of Education of Parents
  - Family Income
  - Usage of Computer and internet user
  - Exposure to ICT
  - Budget for Internet Usage
- ▶ To study the reactions and feedback of the first year students regarding designed Online course in reference to:
  - Features
  - Aspects
  - Problems Faced while leaning
  - Suggestions

### 3. METHODOLOGY

The present study is aimed at **Designing an Online Course for Undergraduate Students of Family and Community Sciences / Home Science** for students of F.Y.B.Sc. (F.C.Sc), Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara. The study was conducted using experimental design in the academic year 2017-18. Pre-post experimental research design was used to conduct the research. It was decided to take only one experimental group to reduce the error in the experiment and control external variables. The students of first year were selected as an experimental group. There were 103 students enrolled for the experiment but 95 students sustained till the end of experimental period. The procedure followed for the study was as follows:

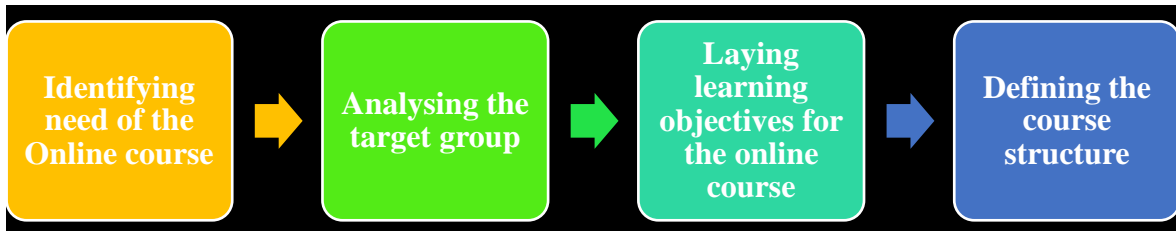
#### SAMPLE OF THE STUDY:

The sample of the study consisted of 95 First year B.Sc.(F.C. Sc) students of Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, of the academic year 2017-18.

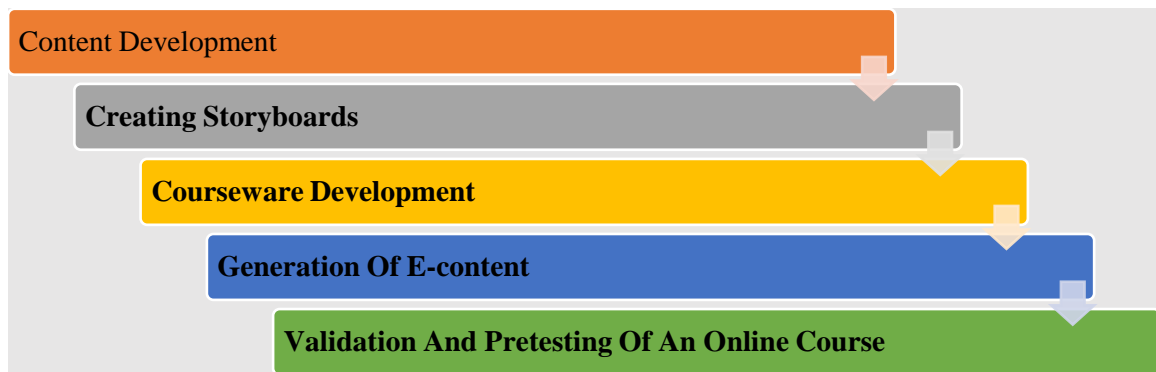
**DESIGNING AN ONLINE COURSE:**

The components developed online course and each stage of designing an online course on “Introduction to Extension and Communication” is explained in detail. **It was decided to have an instructor-led and facilitated online course.** In this model, a linear curriculum was developed that integrated several content elements and activities into a chronological course or syllabus. The course was scheduled and led by an instructor and/ or facilitator through an online learning platform. E-learning content for individual study was integrated with instructor’s lectures, individual assignments and collaborative activities among students.

**STAGE: 1 IDENTIFYING AND ORGANISING ONLINE COURSE:**



**Stage: II DEFINING INSTRUCTIONAL, EVALUATION AND DELIVERY STRATEGIES**

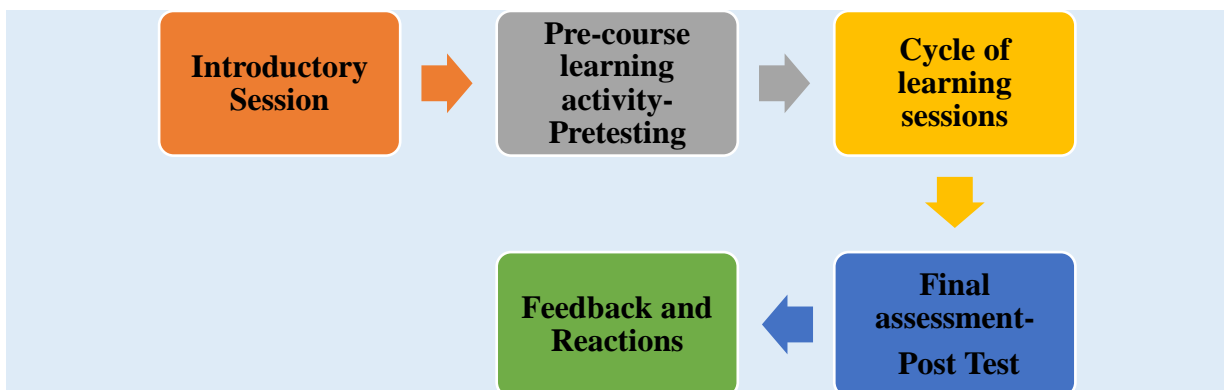


**TOOLS USED FOR DATA COLLECTION:**

There were different tools develop for the purpose of data collection under the study. Three tools were developed for collecting background information- questionnaire, knowledge test to check pre-post gain in knowledge, and reaction scale to study the reactions of students, learning through developed online course.

**EXPERIMENTAL PHASE:**

Online facilitated and instructor-led course was organized into sessions, which was daily or weekly, depending on the duration of the course and on students’ available time on their time table. **The following were the components of an online course learning:**





The experimental phase refers to the actual delivery of the instruction, whether it's classroom-based, lab-based, or computer-based. The purpose of this phase was the effective and efficient delivery of instruction. As the researcher teaches first year and she was assigned Group D, for convenience and with purpose the sample was selected. It was decided to do the experiment of two module to check the effectiveness, Module 1 Communication and Module 2 Graphic Aids. These two modules were selected keeping in mind the theory as well as practical aspects of the course. Those lessons were divided into 14 learning sessions. As decided in analysis phase the experiment was conducted using the blended mode of teaching leaning to increase the participation, learning and reduce the anxiety of the students. It was decided to take two theory sessions and one practical session every week. The experiment was decided to conduct during the month of July, August and September for 7 weeks.

After all the preparation, the time had come for action and that was conducting the experiment. After selection of the sample the researcher provided the URL <http://www.introductiontoextensionandcommunication.co.in> of Online course on "Introduction to Extension and Communication" to the students of experimental group for study. To initiate the study, the researcher visited the class, she introduced herself and explained about the experiment. Then, all the 103 students were given pre-test to check the knowledge level of the sample before the beginning of the experiment. After conducting the pre-test, students were given the checklist to fill to collect the profile of the students.

The theory sessions were conducted using online course and the students used to study the topic at home through their phone or on laptops or desktops.

#### **Post Experimental Phase- Feedback and Reactions:**

After the blended learning through the online course the students were given the knowledge test to check gain in knowledge. A reaction scale was also used to take the feedback and reactions of the students about their experience to study new learning technique, the problems they faced while learning and suggestions for future of developing online course.

### **4. MAJOR FINDINGS**

- All the students belonged to the Age of 17-18 years
- Approximately 30.5% of students' mother had moderate level of education, 35.8% had higher level of education, followed by 33.7% had lower level of education.
- Little more than half (53.7%) of students' father had higher education, 28.4% of students' father had moderate education and 17.9 % of students had low level of education.
- Majority of the respondents (77.9%) belonged to nuclear family and rest of the students (22.1%) belonged to joint family.
- Thirty four percentage (33.7%) of students belonged to lower and higher 34.7% income group whereas 31.6% of students belonged to middle income group.
- Majority (61.05%) of the students had general stream in their higher secondary examination or equivalent examination, whereas rest of students had science stream in their higher secondary examination or equivalent examination.
- Little more than half (53.7%) had English as medium of instruction in school whereas 46.3% of the students had Vernacular medium of instruction in school.
- Forty percentage (38.9 %) of the students had lower usage of computer and internet, whereas approximately thirty seven percentage 36.8% moderate usage followed by twenty four 24.2% percentage had higher usage of computer and internet.
- Thirty seven percentage (36.8%) of students had low exposure of ICT, whereas, 33.7% had moderate exposure, followed by 29.5% had low exposure to ICT.
- Forty four (44.2% students had low budget for internet usage, whereas 34.7% had moderate budget, followed by 21.1% had high budget for internet usage.

- There was significant gain in knowledge learning through online course among students.
- There was **no significant difference in the gain in knowledge** of the students in learning through online course in relation to their **type of family, stream of study in school, mother's level of education, father's level of education and budget for internet usage**.
- There was **significant difference in the gain** in knowledge of the students in learning through online course in relation to their **Medium of Instruction in School, family monthly income, Usage of Computer and Internet and Exposure to ICT**
- All the students except reported that while learning through an online course it gave them freedom to select the topic of study (97.9%) and important terms to remember helped them in learning the content. **Features helped students to learn through Online course:** Freedom to select to study at their own time (94.7%), Freedom to study at their own pace (88.4%), Question bank (90.5%), Summarisation of each topic (87.4%), Videos (82.1%), Movements in visuals (77.9%), Verbal commentary with text (77.9%), Tests at the end of each topic or subtopic (74.7%),
- **All the Physical aspects** of the Online course helped students to learn to **Great extent** Colour combination in the e-content was soothing, The e-content was well designed, Background music in e-content was pleasing, Each page was organized properly, e-content worked smoothly, Verbal commentary helped in understanding the concepts in better manner, Pages were linked well, All the button in the e-content worked properly and Background music in the e-content increased concentration.
- **Content aspects** of the Online course helped students to learn to **Great extent** Translation in Gujarati of the content helped in understanding the definitions and explanation of the content, "Glossary of terms" helped in understanding the concepts, Language used in e-content was easy to understand, Visuals were relevant to content, Examples given in the content increased clarity of concept, Content in the developed e-content was explained in detail, Content in the e-content was self-explanatory, Examples given in the developed e-content were sufficient, Examples given in the developed e-content were sufficient, Examples given in the developed e-content were appropriate, Content was logically sequenced, Visuals were sufficient, Content in e-content follows by learning principles i.e. known to unknown and easy to difficult, Instructional page in the e-content had complete information about how to operate it, Visuals were self-explanatory and Summarization at the end of each topic helped in knowing the important things to remember from the module.
- **Evaluation aspects** of the online course helped students to learn to **great extent were** after each module and sub-topic in the module, the test helped understanding of the content, Questions asked were easy to understand, The number of evaluation items was adequate for providing feedback, Gaming in the test was interesting and Answer keys given for each evaluation items helped in self-correction of answers.
- It was noticeable that low percentage of students faced problems learning through online course. **Problems faced while learning through online course** that Internet connectivity was creating problem (31.6%), Self-regulated learning was not possible at undergraduate level(31.6%), There was interruption in learning because the e-content did not run properly (29.5%), It was difficult to learn without physical notes (26.3%), There was interruption in learning because the computer or mobile used to get hanged due to heavy content(20%). It was found difficult to operate e-content (18.9%), Background music was distracting (16.8%), Note making was difficult (15.8%)

## 5. CONCLUSION

To conclude it can be said that an online course can a good option for making the learning student centred. It is evident that the role of teacher cannot be replaced but it is changing with the time. The technology based learning can complement the teaching learning process but Indian education climate is yet not 100% ready for going full online. Instructor led or teacher supported online courses with a blended mode can more effective especially at undergraduate level. But it also focuses on the reality that modernization of education in Indian colleges and universities is a necessary attempt. The syllabuses, subjects and courses have to be planned in such a way that it satisfies the top international standards. To attract affordable international students, who are interested in comparatively quality education, eLearning has to be promoted. Infrastructures also have to be standardized so that it satisfies the basic needs of every student. On the technology support side we need adventurous faculty collaborators willing to share both their content expertise, and their

experience as effective teachers and communicators. The knowledge resource from the best brains of various institutes, colleges and universities has to be used for bringing about a better society. “Open up the doors – to as many people as possible to gain access to it, at whatever moments in their lives, however frequently they choose to knock upon this or that education door.” When the world of knowledge is knocking the doors of Indian Higher Education, it is a need of an hour to warmly welcome and accept. Where we can be the knowledge generator according to the needs of Indian students, why to just stay back and be the user of that knowledge.

#### **Suggestions for future study:**

- ▶ More courses should be developed using localised approach
- ▶ Teaching faculties should explore more open source softwares to design and develop online courses
- ▶ More research studies should be taken up to develop more online courses for Family and Community Sciences/ Home Science
- ▶ The online courses should provide more visual content
- ▶ The online content should provide local language support
- ▶ The research studies and projects can be taken up to do comparative studies of different technology based education
- ▶ More technical support and encouragement should be provided to the students to accept and learn through innovative technology based educational approaches

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