

IBM Faculty Buildathon 2023

24/07/2023 to 04/08/2023

**Unveiling the Virtual Classroom: An In-Depth Analysis of
the Online Education System**

PROJECT REPORT

By

**Dr R Lalitha
Professor, CSE
Rajalakshmi Institute of Technology
Chennai
lalitha.r@ritchennai.edu.in**

Date of Submission : 09/09/2023

Project Description

I Define Problem/Problem Understanding

1. Specify the business problem

Covid 19 provided an opportunity to all the people to explore the possibilities of on-line learning. Google classroom, Google meet, Zoom, Microsoft Teams became very popular platforms for teaching learning process and for knowledge sharing. From that time of pandemic, the online learning environment is predominant and it provides the platform to learn new technologies through on-line classes, webinars, workshops and through on-line certification courses.

To further improve the on-line learning environment and to facilitate the learning platforms to all people in an economical manner, it is essential to analyze the pros and cons of online / virtual learning environment.

Hence, it is essential to analyze the on-line learning environment based on various parameters so that it should provide valuable insights to the educational society to further improve the learning environment. Thereby, it should be reachable and affordable by all the people of the nation to learn at ease.

2. Business requirements

The business requirements include the following:

- Internet facility at low cost and high speed
- Uninterrupted power supply
- A device to connect to internet and learn.
- Good video and Audio quality in the device.
- Peaceful and calm learning and listening environment.
- Facility to mark attendance and to interact with the learner and teacher individually.
- A methodology to evaluate the understanding of the learners.
- Facility to provide certificate/badges/gift vouchers to appreciate and motivate the learners.
- Teacher and learner should have the facility to interact in online orally and as well through chatwindow.
- An useful feedback system to get the feedback from the learners and the teacher.
- Ergonomically designed device and connecting facility to internet which makes the learning device more user-friendly and should provide a good teaching –learning environment to both the teacher and the student.
- A good recording facility to record the teaching session and to re-use it whenever needed.

- Curated learning environment to update the learning materials periodically.

3. Literature Survey

A detailed survey was conducted on the following teaching-learning environment:

1. IBM faculty training/ buildathon

The leading IT companies like IBM are involved in providing service to the teaching community by periodically providing on-line training programmes/ buildathon to the school and college teachers. This is a wonderful effort taken by IBM to upgrade the knowledge of the teachers with the latest technologies.

2. IBM students Internship

The leading IT companies like IBM are providing internship training to the students studying in colleges in online. This provides a conducive environment for the students to learn new skills and techniques and to gain practical experience through project developments. The certificates and badges which the students earn through these learning environments, helps them a lot during their placement and strengthens their resume.

3. Github learning

Through Github, learning and understanding becomes easier. Though it does not involve, live learning and teaching session, the learning through Github is very familiar and provides a good technological knowledge to the learners.

4. LinkedIn and other online certification platforms

LinkedIn learning is very popular among the techy persons to upgrade their skills and interests in learning more. Similarly, the online certification through Udemy, Simplilearn, Analytics Vidya, W3Schools, GeekstoGeeks provide detailed explanation of various topics across the domains. They provide lecture videos, lecture notes, Multiple choice questions with test and solutions, exercises to practice. This motivates the self-learning platform for the learners of all age and in all profession.

Thus, this brief survey shows that online learning has become a vital part in education domain and hence a detailed research and improvement methods are mandatory to establish this to all sectors of people in our country.

4. Social or business impact

The Virtual learning environment provides both the social and business impact.

Impact on society:

- Apart from technology, this on-line learning environment provides opportunities for the home makers to learn and to share knowledge about cooking, home maintenance, health care, yoga, meditation etc.
- It provides an environment to read books through kindle and to share reviews about books,
- It enables meeting and sharing knowledge among people on various occasions.
- It enables the society to learn anything,;learn anywhere; learn everywhere.
- Right from music, games, technology, food, cooking, design, architecture etc, on-line learning has paved the root to learn anything by any person.

Thus, it empowers the society and helps to make a person more knowledgeable and skillful. This, in turn provides self-confidence to the people of the society.

Impact on Business:

- Online learning courses are offered at affordable cost and hence it improves business for the education society.
- The teachers get an additional opportunity to teach online and get an additional income.
- Due to the advancement in online/ virtual learning environment, the market and the demand for the teaching learning processes like camera, lap tops, desk tops, mobile phone, modem, internet connectivity and all other accessories needed for online teaching and learning system will improve. Thus, the business will improve and it helps to create more businessmen, entrepreneurs and manufacturers of the devices and accessories.

Thus, the research and development on virtual classrooms and on-line learning will have a great impact on the economy of a nation and hence it is a very useful, mandatory research to be done.