# A PROJECT REPORT ON ONLINE EDUCATION REVIEW SYSTEM

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# 1. Introduction

## 1.1 Overview

Before March '20, students in primary, secondary, and graduate level courses were used to traditional classroom face-to-face teaching. However, the COVID lockdown brought a disruption in classroom teaching. According to a World Economic Forum article, over 1.2 billion students across the globe were stuck at home, out of their classroom. This unveiled the idea of virtual classrooms, e-learning, where the same classroom teachers started using new technological platforms like Zoom, and Microsoft Teams to conduct their regular lectures.

Teachers faced a massive challenge to learn a new platform and then teach the actual content using the same. The initial months were struggling, but with time they got themselves adjusted. But the major problem that this online education saw, was extensive internet issues across rural areas, which hindered teachers and students across rural areas. The other problem this online education faced was the non-availability of sufficient online devices like desktops, laptops, and mobile in a low or middle-class household, with a family size of 4 or more. Thus, this project deals with the study of various aspects of online education by examining its strengths, weaknesses, opportunities, and challenges.

## 1.2 Purpose

This project aims to provide valuable insights for educational institutions, policymakers, and online learning platforms to enhance the effectiveness and accessibility of online education by identifying the factors that contribute most positively to online education and the same negative factors. The project can also help determine the segment that would most likely opt for online education and where the maximum training is required to make it more inclusive.

# 2. Literature Survey

## 2.1 Existing Problems and Existing Approaches

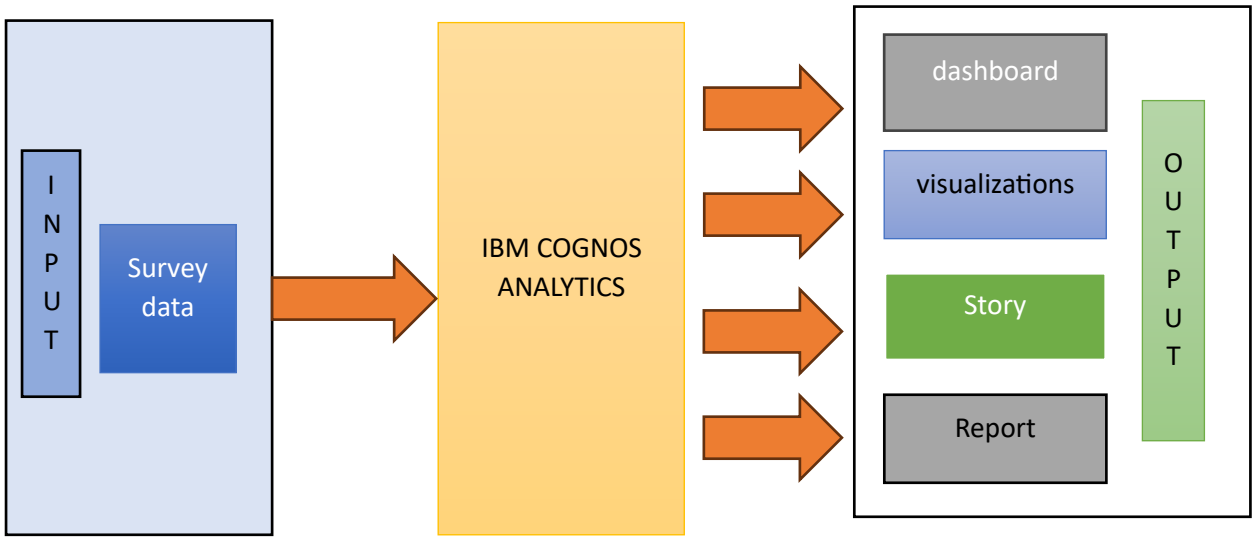
Online education or e-learning has been found to be less effective than face-to-face learning and teaching. Faculty and students indicated that online learning challenges lie in adapting to online education, especially for deaf and hard-of-hearing students, lack of interaction and motivation, technical and Internet issues, data privacy, and security in urban or rural areas [1]. Currently, online platforms like Zoom and Microsoft Teams have been offering online interactive classes, and WhatsApp to communicate with students outside the class. Hevi et al. [2] in their paper discussed the digital learning experience. He studied that virtual self-efficacy influences the learning process. K. Tang [3] in his paper shows the shifts of learning remotely and its effects on learners and faculty. He found there are inequalities in the distribution of resources as well as inequities attributed to socioeconomic status, gender, ethnicity, learning ability, and physical conditions.

## 2.2 Proposed solution

According to the problem currently existing, if the online sessions are made more interactive like traditional classroom teaching, then students will be more attracted towards it. Also, the faculty interaction and more doubt-clearing sessions will help overcome the problem for businesses.

# 3. Theoretical analysis

## 3.1 Block Diagram of project




## 3.2 Hardware requirements-

a) A computer with Windows/Mac OS
b) Hard Drive - 64 GB
c) Ethernet connection
d) RAM- Minimum 4GB

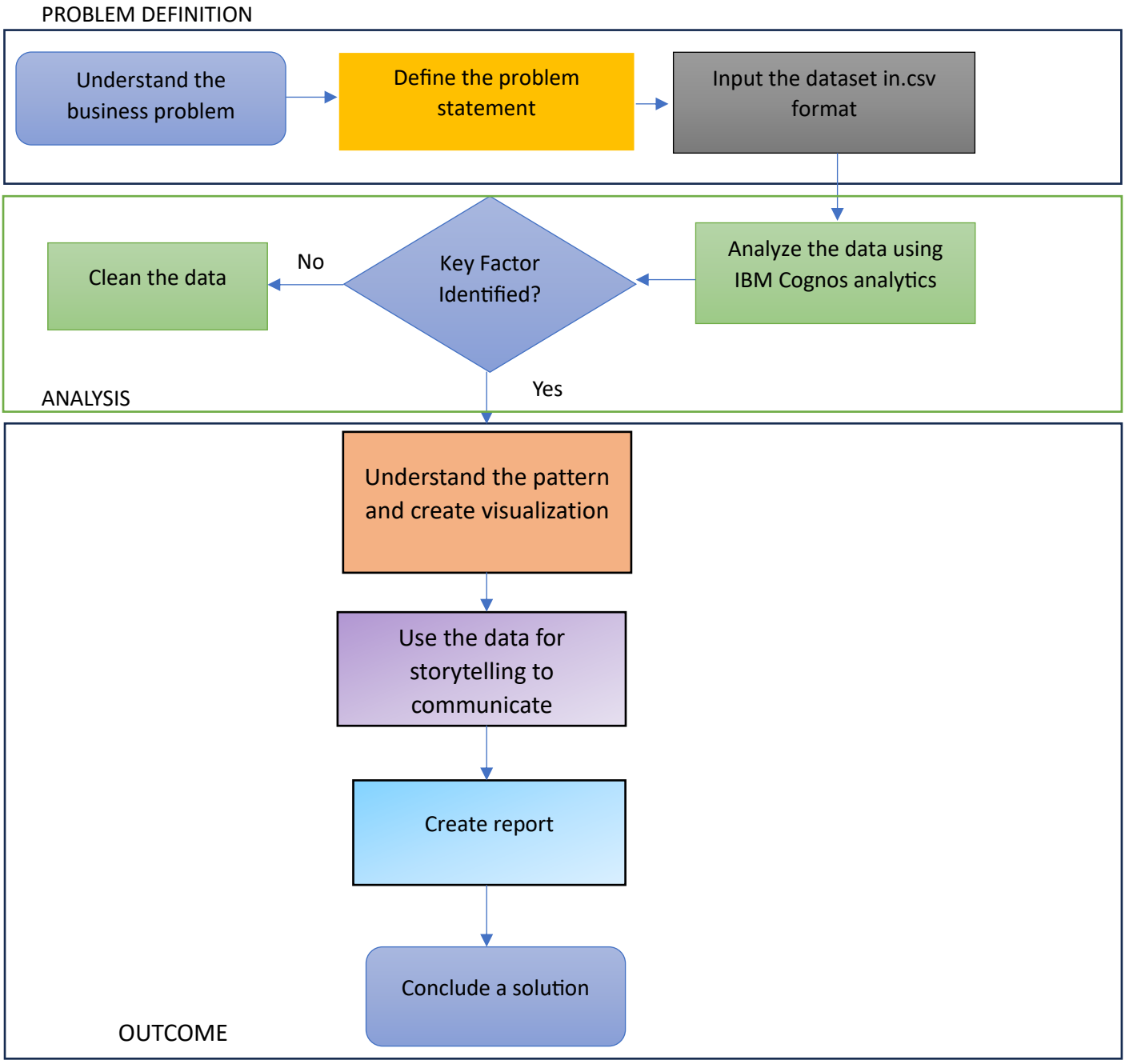
## 3.3 Software Requirements

a) IBM Cognos Analytics Cloud
b) Microsoft Word
c) Supporting Brower – Chrome
d) Bootstrap
e) Visual code editor
f) Python /Anaconda

# 4. Experimental Investigation

In this project as a part of the experimental investigation, initially, the data from the csv file was used to create a data module. In the data module, the data is cleaned. This data module was used for performing an exploratory data analysis in the IBM Cognos analytics cloud. Different chart types were used to establish a correlation, resulting in finding the solution.

## 5. Flowchart


PROBLEM DEFINITION
Understand the business problem
Define the problem statement
Input the dataset in.csv format
Analyze the data using IBM Cognos analytics
Key Factor Identified?
No
Clean the data
ANALYSIS
Yes
Understand the pattern and create visualization
Use the data for storytelling to communicate
Create report
Conclude a solution
OUTCOME

## 6. Result/Findings

a) The data showed that students from different locations, economic statuses, and education levels have performed well by clearing doubts through faculty interaction as shown in Fig 1.

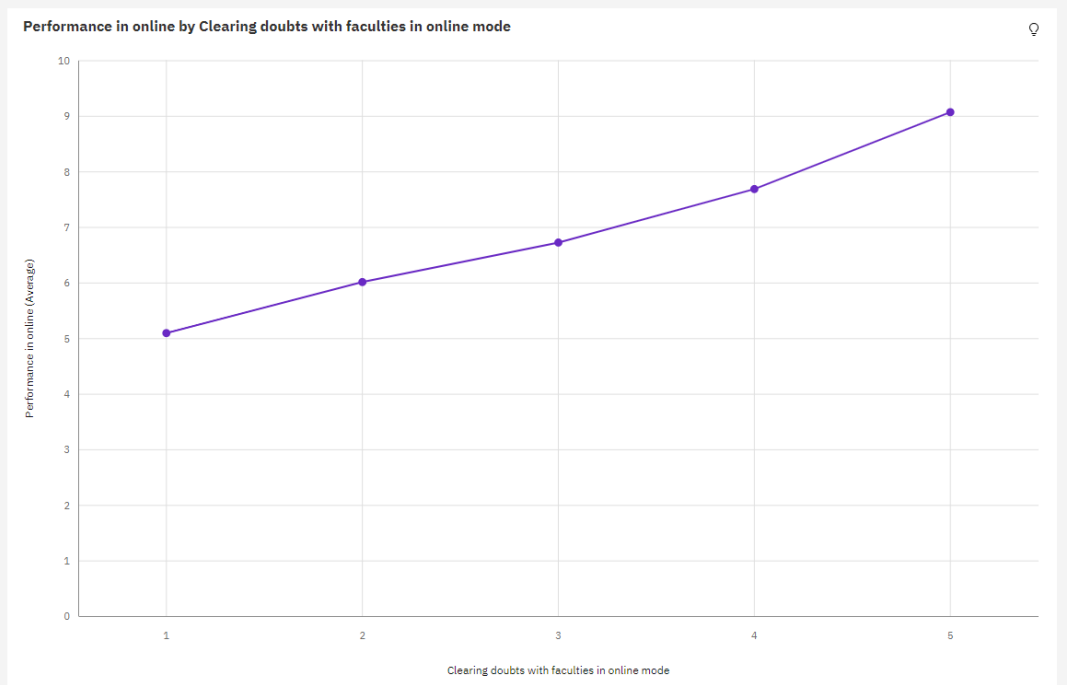



Fig 1: Performance online vs Clearing doubts with faculty in online mode.

b) The students performed well when they interacted more in online mode as shown in Fig 2

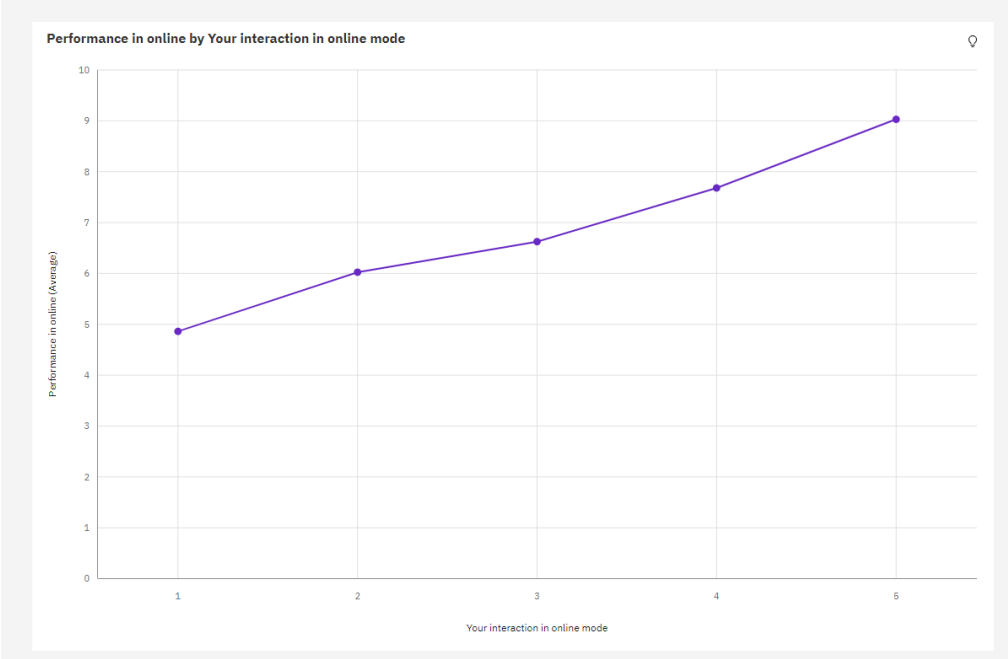



Fig 2: Performance online vs interaction in online mode

c) The Internet facilities affect the level of satisfaction among students from schools, under as well as postgraduates. If the internet facility is bad, then the level of satisfaction also reduces as shown in Fig 3

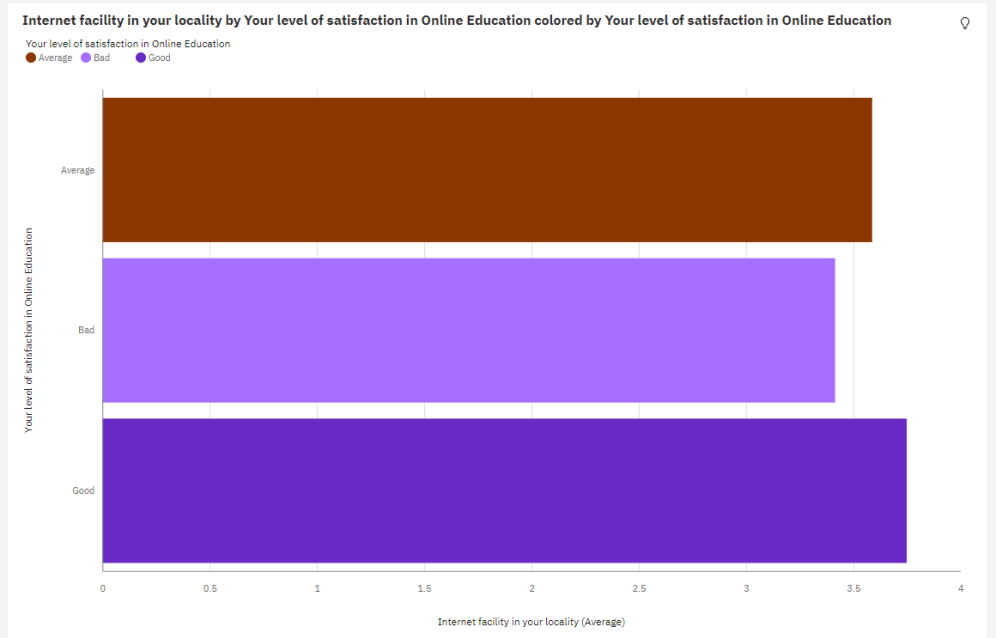



Fig 3 Level of satisfaction based on internet facility

d) The performance of students is affected based on their time spent on social media, separate study rooms, and elderly monitoring as shown in Fig 4 using a Heat Map.

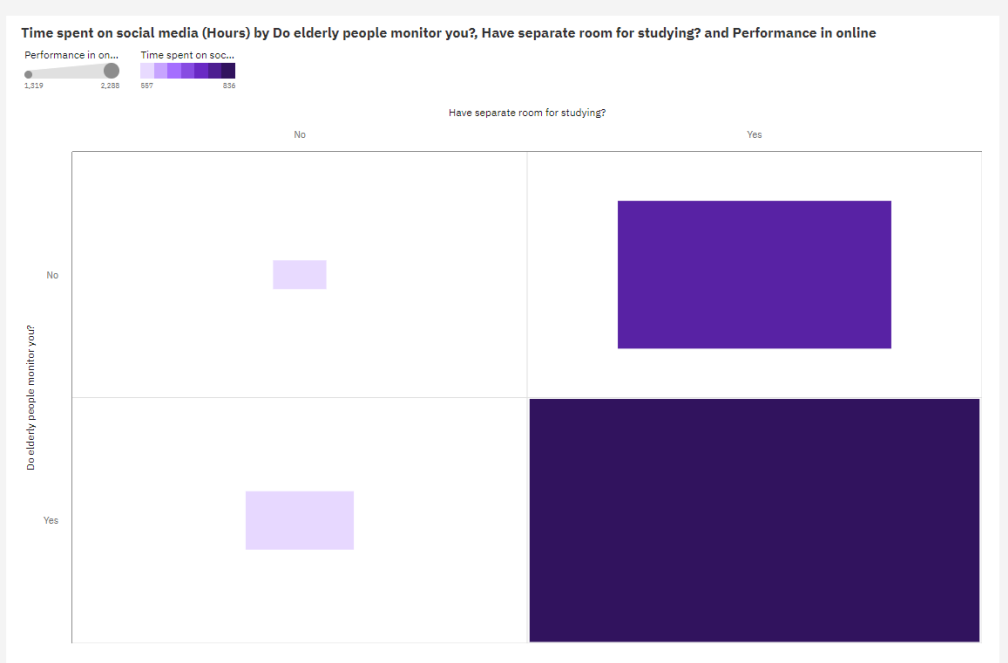



Fig 4: Performance Online vs. Time spent on social media, separate study room, and elderly monitoring.

## 7. Advantages and Disadvantages

a) With interactive online sessions, students will not get bored with screen time
b) The students' travel time across institutes or training centres would reduce and in turn, increase their study time.
c) The teaching-learning process of faculty members will improve.
d) Weaker students can have one - one doubt solving sessions.
e) Students can learn concepts at the ease of being at home.
f) As a disadvantage, few students who are not interactive or shy, may lose interest.

## 8. Applications

a) This solution can be applied across educational institutions for blended learning.
b) Ed-tech startups can make their sessions more interactive to attract more students and improve the teaching-learning process.
c) Universities can improve better placement training.

## 9. Conclusion

From this project on Virtual classroom, it can be concluded that if businesses like Universities or Companies want to improve the virtual classroom experience for students, then they can involve more student-faculty interaction like in traditional classrooms. This would engage students more, keeping them away from social media. Further weaker students would be able to reach out to the faculty for doubt clearing. The online classes if made interactive can benefit students from rural areas, who cannot travel to cities for education or training

## 10. Future scope

The online student-teacher ratio can be reduced to 1: 20 like in the classroom. Online sessions can be reduced to lesser periods. Experiential learning can be improved. The internet facilities can be improved. Girls from rural places who cannot avail education can have it online from home with an increase in awareness.

## 11. Bibliography


1) Z.Almahasees, K.Mohsen,M.Amin, " Faculty's and Students' Perceptions of Online Learning During COVID-19", Volume 6 – 2021.
2) S. Hevi, C. Osei, "Digital learning space experience and learner continuous use in institutions of higher learning: a moderated-mediation model", ISSN: 2397-7604, 2023.
3) K. Tang, "Impacts of COVID-19 on primary, secondary and tertiary education: a comprehensive review and recommendations for educational practices",springerlink, 23-62, 2023.


## 12. Source code