

# Report

IBM Built-A-Thon 2023

## IBM Cognos Analytics

### Unveiling the virtual Classroom: An In-depth Analysis of the Online Education System.

Name: Mrs.T Neha

G.Narayanamma Institute of Technology and Science

#### Introduction:

In the age of digital innovation and global connectivity, the traditional boundaries of education have evolved. Online education, often referred to as virtual learning, has emerged as a dynamic force reshaping the educational landscape. Accelerated by the COVID-19 pandemic, it has transcended its initial role as an alternative to in-person classes to become a formidable mode of learning, revolutionizing how knowledge is disseminated and acquired. This in-depth analysis embarks on a comprehensive exploration of the online education system, dissecting its multifaceted aspects to provide a nuanced understanding of its impact on students, educators, and institutions worldwide.

Online education offers an array of advantages, including enhanced accessibility, flexibility, and cost-effectiveness. However, it is not without its challenges, encompassing issues related to engagement, quality assurance, and equitable access. As we venture into this analysis, we will navigate through these advantages and challenges, while also peering into the future of virtual education, marked by the integration of cutting-edge technologies and the emergence of hybrid learning models. This journey aims to shed light on the transformative power of the virtual classroom and its pivotal role in shaping the future of education.

#### Objectives

- **Assess Impact:** Evaluate the overall impact of online education on students and educational institutions.
- **Identify Strengths:** Identify the key strengths and advantages of online education.
- **Highlight Weaknesses:** Highlight the main weaknesses and challenges associated with online education.
- **Examine Technology Use:** Investigate how technology is utilized in online education and its role in the learning process.
- **Offer Recommendations:** Provide practical recommendations to enhance the effectiveness and accessibility of online education.

#### Some of the advantages of Online Education

1. **Flexible Schedule:** Online learning lets you pick when to study. You don't have to be in a classroom at a certain time.
2. **Less Expensive:** It often costs less than going to a physical school because you don't need to travel or buy as many books.

3. **Multiple Choices:** You can find lots of different classes online, from math to art. There's something for everyone.
4. **Learn any way you like:** Online classes can be customized to how you learn best. It can help you understand things better.
5. **No Long Commute:** You don't have to spend time going to school. This saves time and helps the environment.
6. **Be sociable:** You can meet people from all over the world in online classes. It's like making friends from different places.

### **Weaknesses of Online Learning**

1. **Distractions at Home:** Learning from home can be challenging due to various distractions like household chores, family members, or noisy environments that can interfere with concentration.
2. **Limited Networking Opportunities:** Building a professional network or connecting with classmates can be more challenging in an online setting compared to a physical campus
3. **Lack of Face-to-Face Interaction:** Online learning primarily takes place through computers, which can lead to a lack of in-person interaction with teachers and classmates. Some students thrive in a physical classroom where they can ask questions and engage in discussions
4. **Technical Issues:** Technical problems, such as internet connectivity issues or computer malfunctions, can disrupt the learning process. Not everyone has access to reliable technology, which can create inequality in education.
5. **Isolation and Loneliness:** Some online learners may feel isolated or lonely because they don't have the regular social interactions that come with attending a physical school.
6. **Limited Hands-On Learning:** Certain subjects, like laboratory-based sciences or hands-on vocational training, are challenging to teach effectively online. Students might miss out on valuable practical experiences.

### **Literature Review**

**There are 3 stages of activities in online model learning.**

- **Identify the Need:** The process typically begins with recognition that there is a need for specific information. This need could arise from a variety of reasons, such as academic research, personal interest, decision-making, or problem-solving.
- **Evaluate Information:** Assess the quality, relevance, credibility, and reliability of the information you find. Consider the source's authority, the publication date, and whether it aligns with your research objectives or decision-making criteria.
- **Develop a Conceptual Framework:** Create a conceptual framework or model that integrates the various elements of your synthesized knowledge. This framework should represent your new understanding or perspective on the topic

### **Software and Hardware requirements**

#### **Software Requirements**

Operating System: Windows

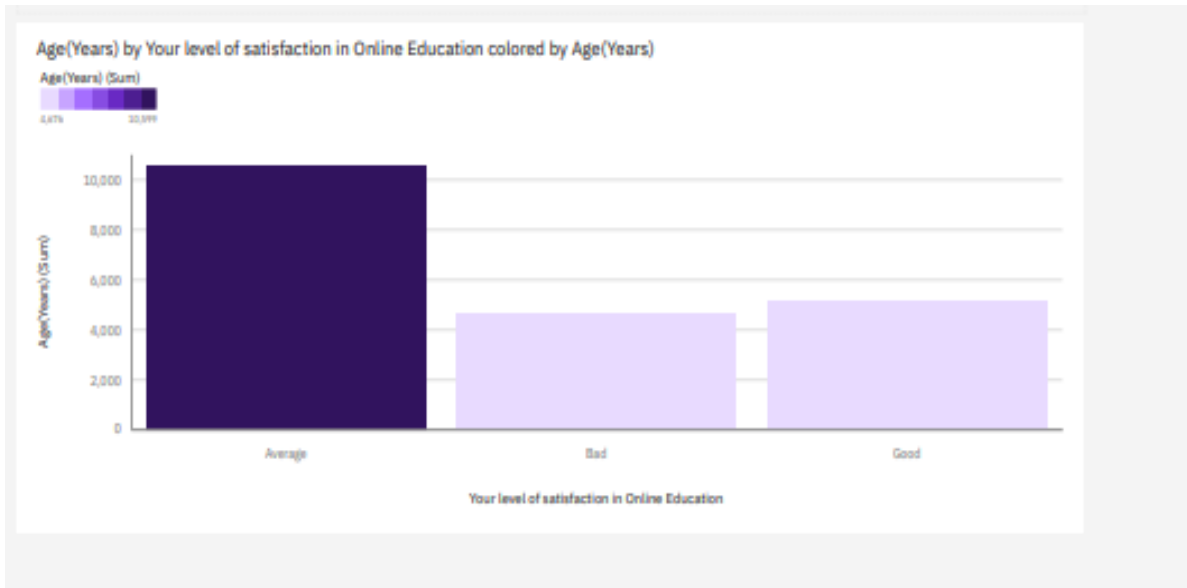
IBM Cognos software

**Hardware Requirements**System: Pentium IV

**Dataset:** The dataset used is online education Review from kaggle website

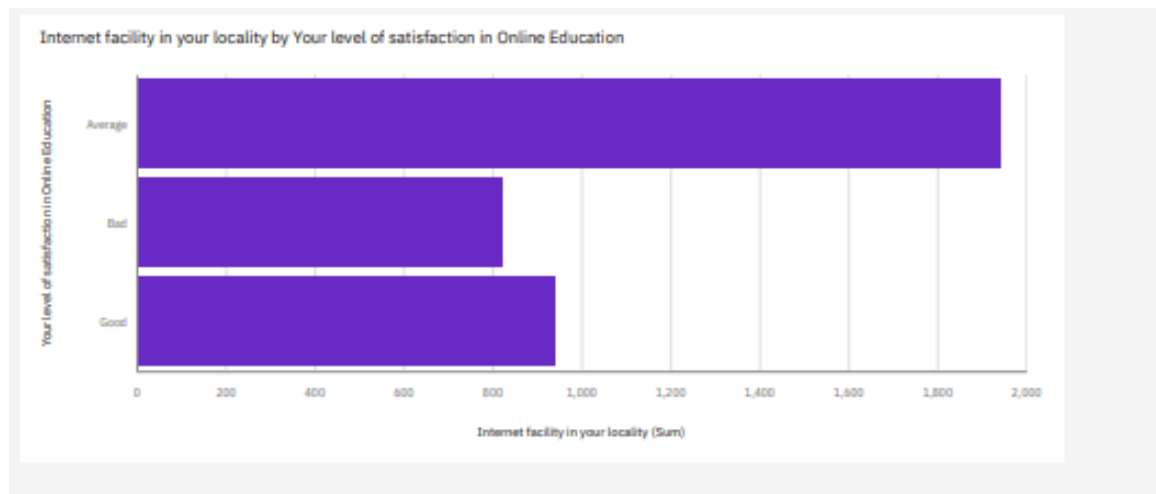
## **Data Visualizations**

Different visualization were created



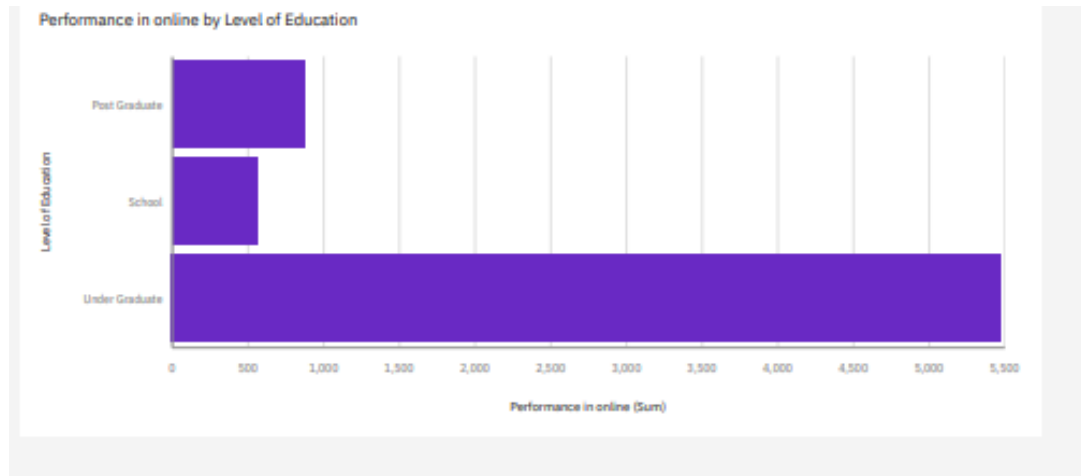
**Fig.1**

In the above fig.1 the level of satisfaction is average for higher age groups and it is below average for lower age groups.



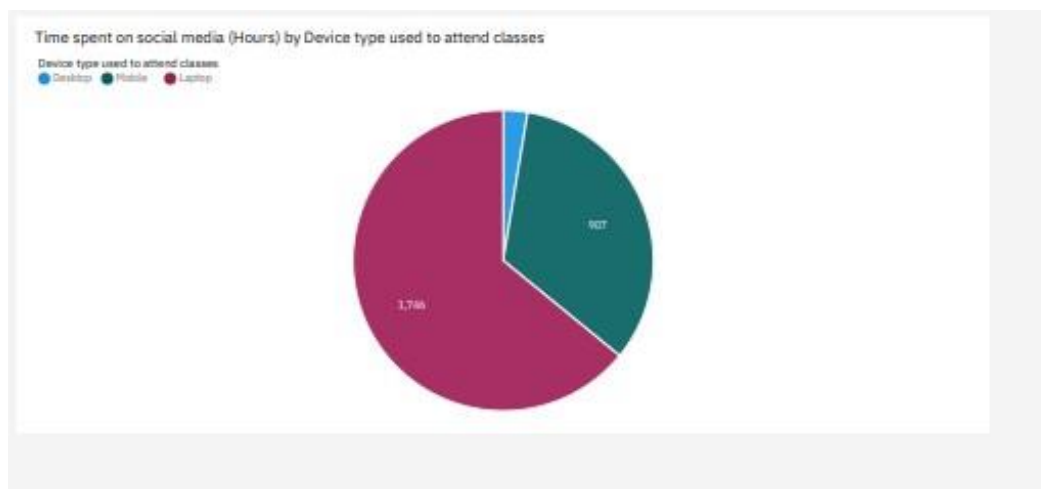
**Fig.2**

**Fig 2** depicts as the level of internet increases the level of satisfaction is average. If the internet in the locality is bad the level of satisfaction of online education is not good.



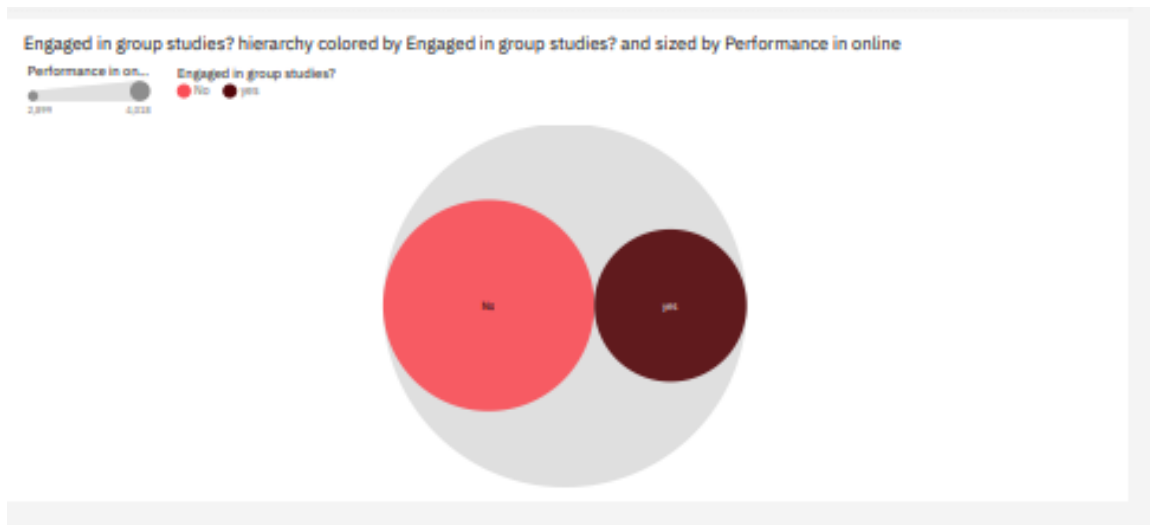
**Fig.3**

**Fig 3** shows the performance of online education is better for under graduate student  
Compared to school education.



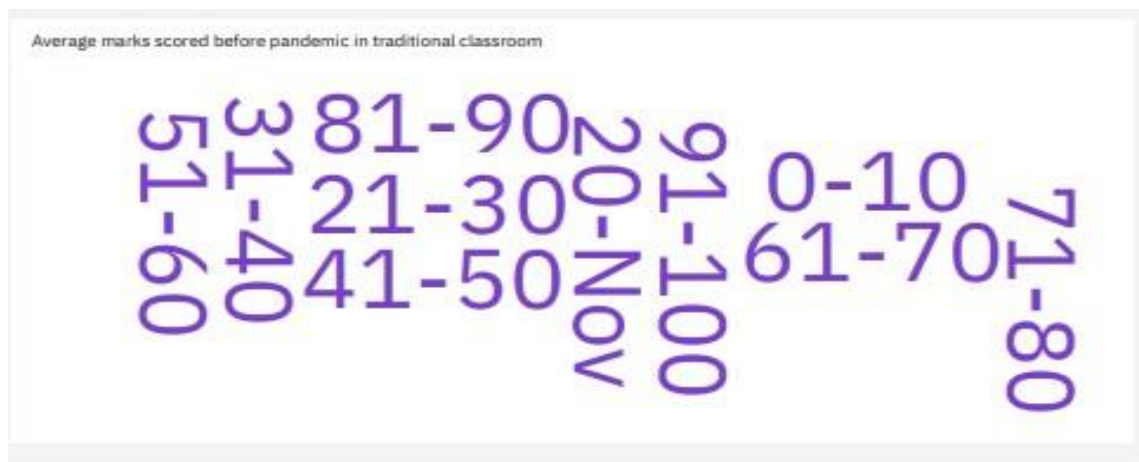
**Fig.4**

Time spent on social media is more when students use laptops then compared with mobiles.  
Since they can minimize the screen, and can be used anywhere.



**Fig.5**

In fig 5 depicts performance is better when they are not engaged in group studies.



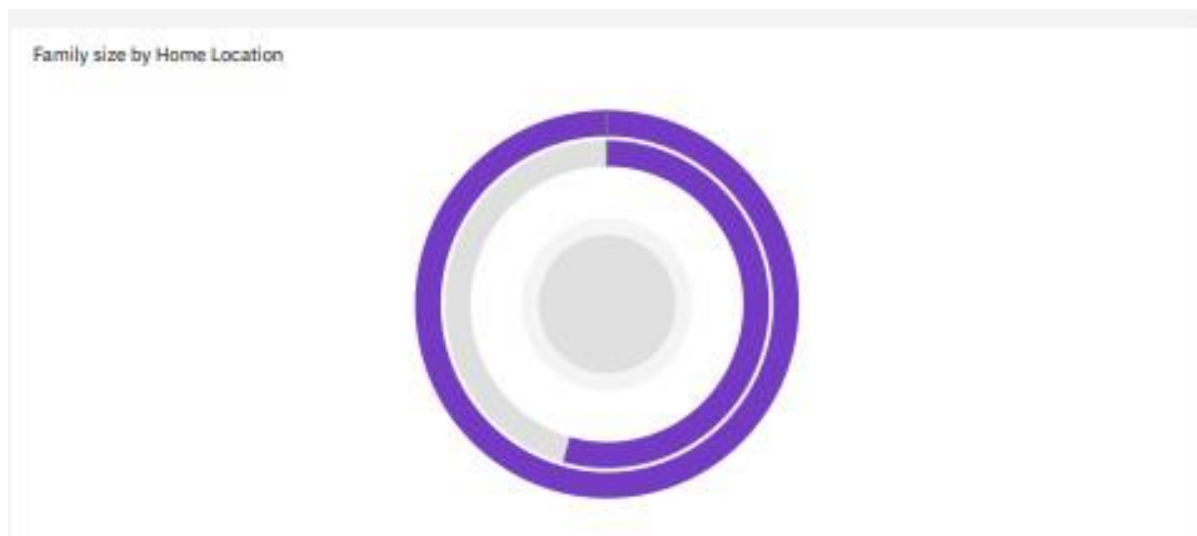
**Fig.6**

The fig 6 shows the average marks scored before pandemic in traditional classroom.

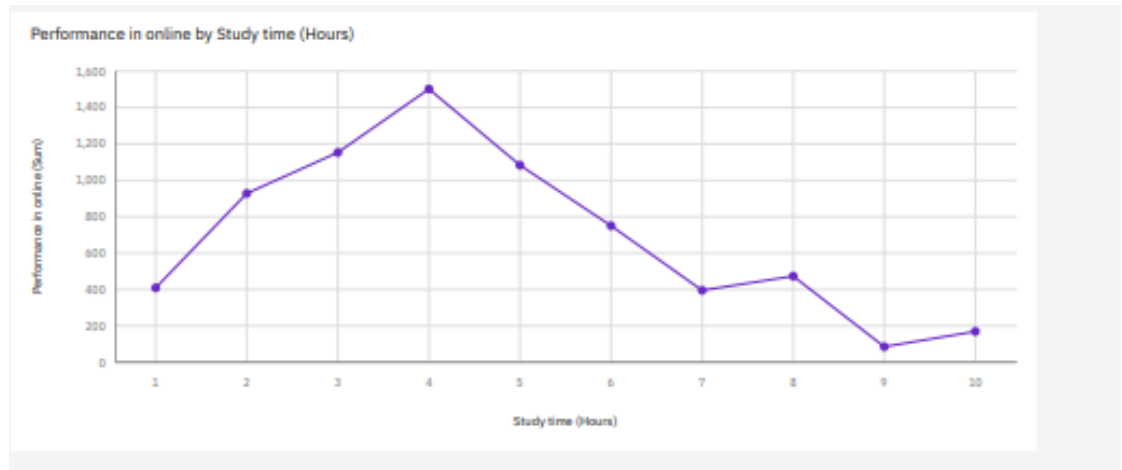
Economic status, Home Location and Performance in online		
Economic status	Home Location	Performance in online
Middle Class	Rural	2,124
	Urban	4,262
Summary		6,386
Poor	Rural	227
	Urban	85
Summary		312
Rich	Rural	27
	Urban	192
Summary		219
Summary		6,917

**Fig.7**

The fig 7 shows middle class status performance in online course is highest.



**Fig 8**



**Fig 9**

Less the study hours better is the performance in online education .



**Fig.10**

This Fig.10 shows as the sleeping hours is less performance in online studies is no good

## Conclusions

Level of satisfaction of online education is good for higher age groups that is undergraduate. If the internet facility is good then the level of satisfaction is average. Less the study hours, better is the performance in online education since it is noticed that, since the time spent on social media is more, when the study time is more. Performance of online education is good in middle class families compared to rich & poor.

## References

1. Hsu, Carol, and James Backhouse. "The implementation of online education on campus." *AMCIS 2001 Proceedings* (2001):





