

Faculty Buildathon**Project Report****On****Student Performance Analysis in Online Education****For completion of the course****Data Analytics with Cognos****Submitted by****Dr. Usha Verma****Assistant Professor, E&TC****MIT Academy of Engineering, Alandi (D), Pune**

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1 INTRODUCTION

The COVID-19 pandemic had instantly changed the mode of education. The education changed from physical classroom to virtual classroom. It was challenge for both teachers and students to accept this change get adapt to it.

1.1 Overview

The project is based on the analysis of students' performance during online education during the covid-19 pandemic.

1.2 Purpose

The pandemic is declared as over but are we ready for any such situation in future.

The analysis presented in this report can be further used to improve the factors affecting the performance of students in online mode.

2 LITERATURE SURVEY

To start working on any problem, it is very much necessary to have an in-depth related literature survey.

2.1 Existing problem

- Students attentiveness during online classes
- Students attendance during online classes

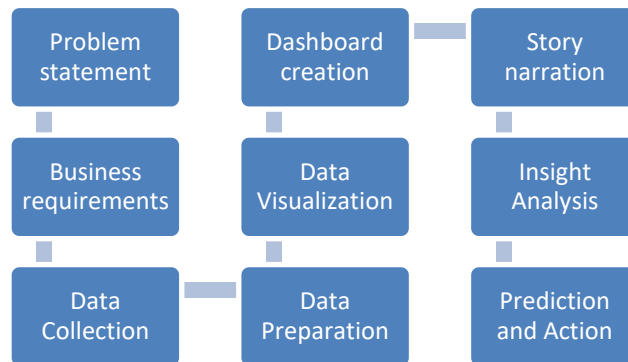
2.2 Proposed solution

- Every 10-15 minutes, there shall be a poll or activity during online class.
- Sufficient resources at student end.



3. THEORETICAL ANALYSIS

3.1 Block diagram



Diagrammatic overview of the project

3.2 Hardware / Software Designing

Hardware requirements:

A laptop with internet connectivity.

Software requirements:

IBM Cognos

Visual Studio

4. EXPERIMENTAL INVESTIGATIONS

The analysis is done with the IBM Cognos software. It included the following steps:

- Data Collection
- Data Preparation
- Data Visualization
- Presentation of analysis with Dashboard creation
- Insight analysis with the story
- Prediction and action

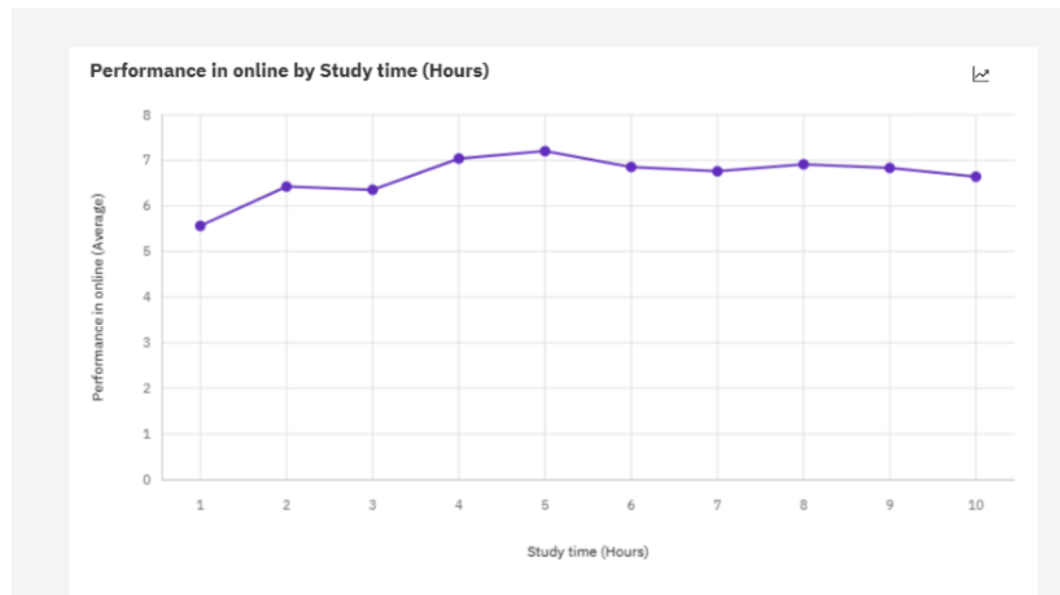


5. RESULT

Exploration Cards

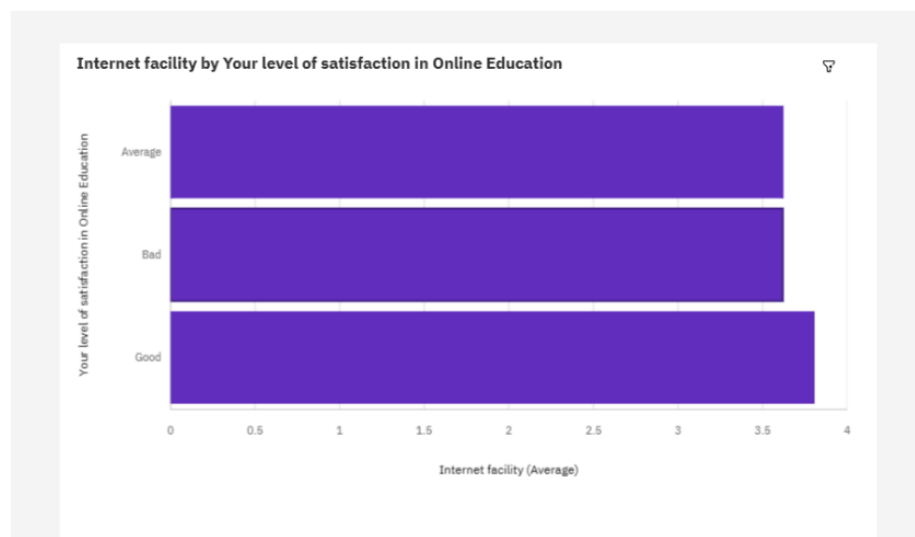
Exploration: Online Education Viz

Card: Performance in online by Study time (Hours)



Exploration: Online Education Viz

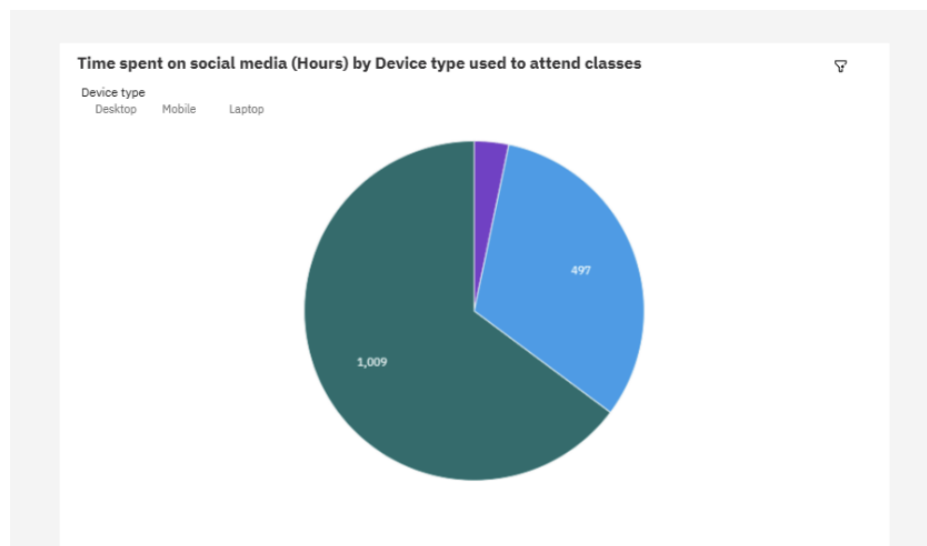
Card: Internet facility by Your level of satisfaction in Online Education





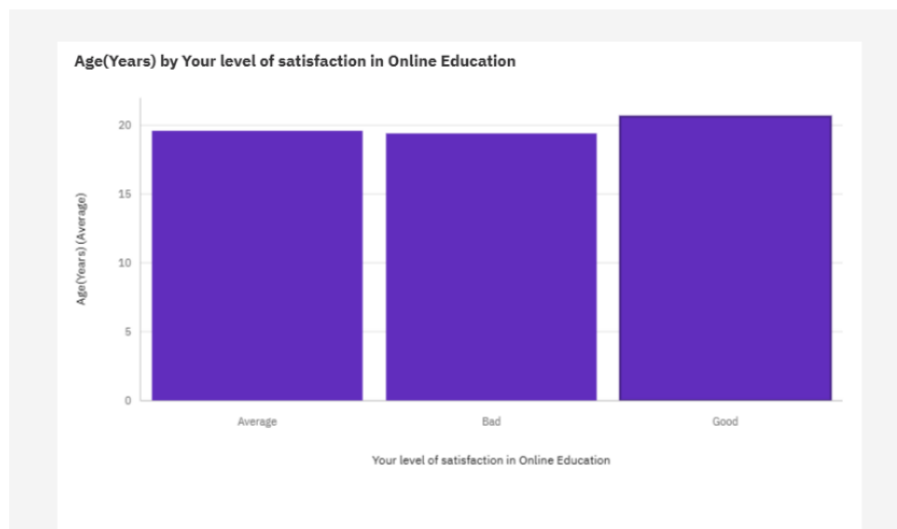
Exploration: Online Education Viz

Card: Time spent on social media (Hours) by Device type used to attend classes



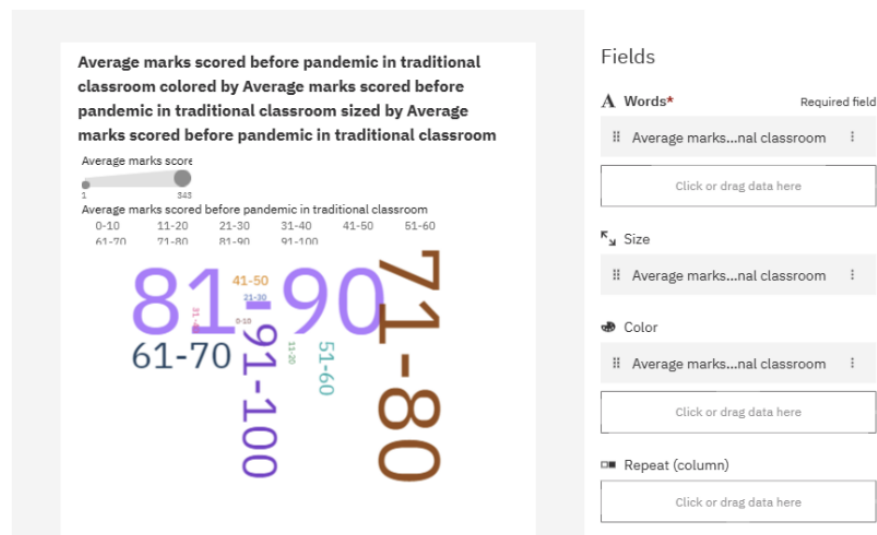
Exploration: Online Education Viz

Card: Age(Years) by Your level of satisfaction in Online Education



Card: Engaged in group studies? colored by Engaged in group studies?
sized by Performance in online

Card: Average marks scored before pandemic in traditional classroom
colored by Average marks scored before pandemic in traditional classroom
sized by Average marks scored before pandemic in traditional classroom



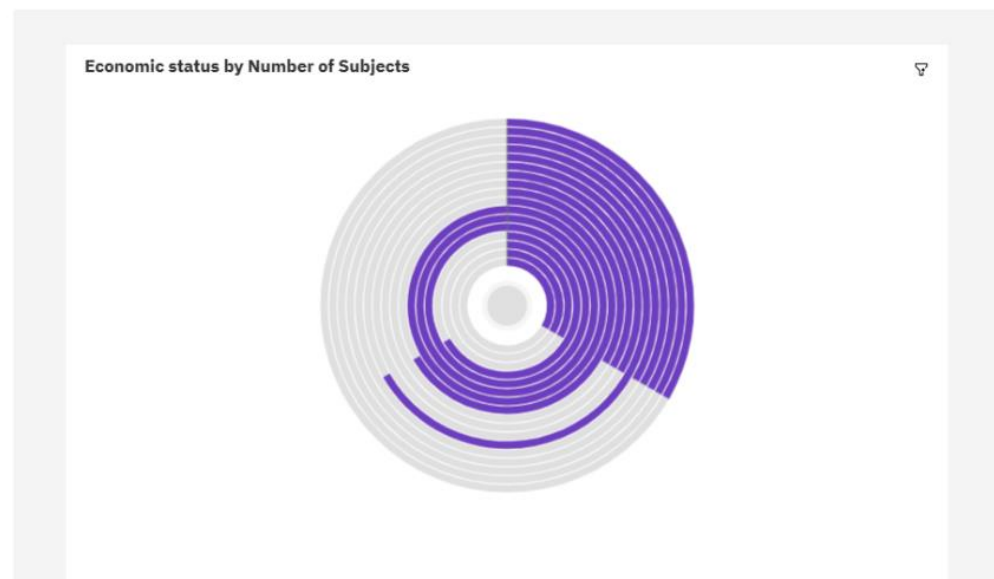
Exploration: Online Education Viz

Card: Economic status, Performance in online and Home Location

Economic status	Home Location	Performance in online
Middle Class	Rural	6.72
	Urban	6.68
Summary		6.69
Poor	Rural	6.49
	Urban	6.07
Summary		6.37
Rich	Rural	9
	Urban	7.11
Summary		7.3
Summary		6.7

Exploration: Online Education Viz

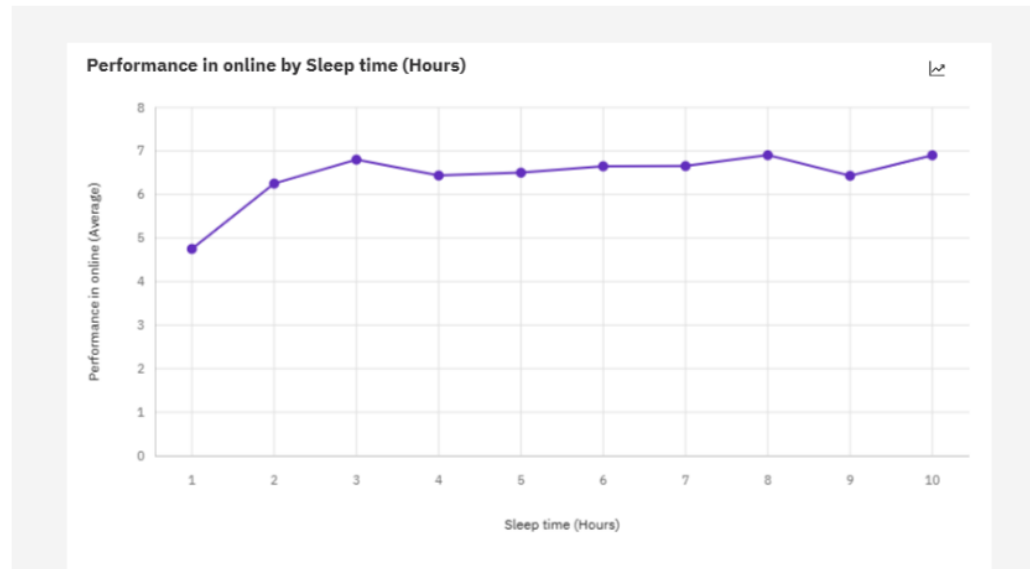
Card: Economic status by Number of Subjects





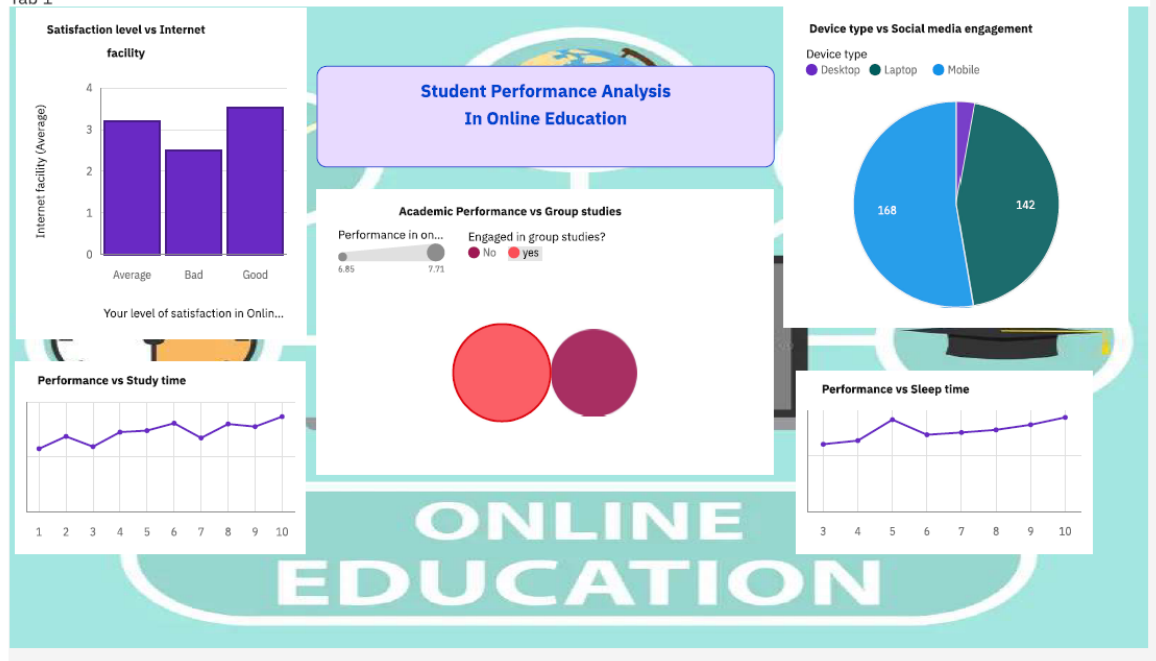
Exploration: Online Education Viz

Card: Performance in online by Sleep time (Hours)



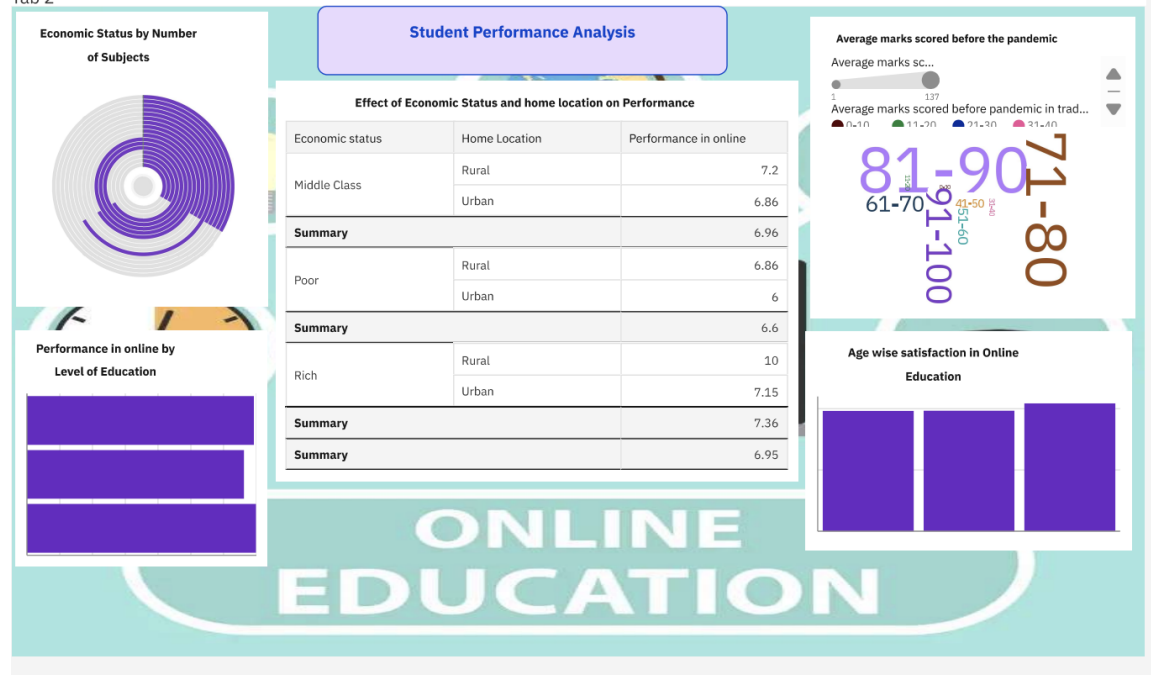
Dashboard output:

Tab 1





Tab 2



Story Output:

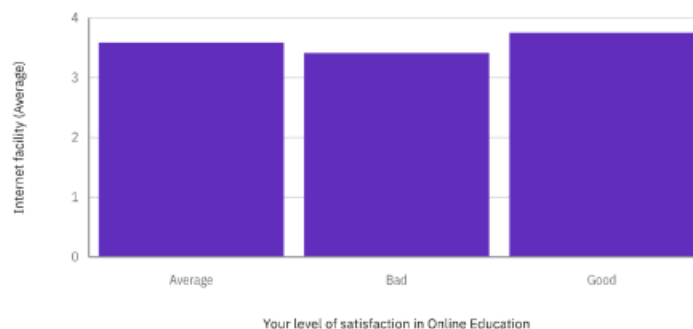
Performance Analysis of students in online education

Narrated by: Usha Verma

Student level of Satisfaction

- This is a column bar graph.
- It represents the correlation between student satisfaction and the internet facility available to them in online education.
- Satisfaction levels- Good, Bad, Average

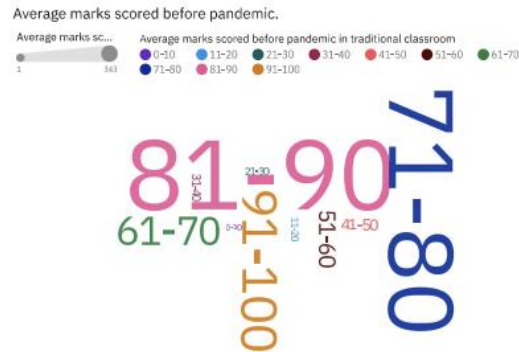
Internet facility in your locality by Your level of satisfaction in Online Education





Performance of students prior to the pandemic

- This is word cloud.
- It represents the marks of students prior to the pandemic.
- The size of marks in the graph represents the number of students.



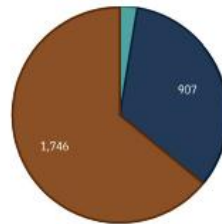
Use of Facilities effectively

- This is a Pie chart.
- It represents the visualization of students using gadgets for social media.

Time spent on social media (Hours) by Device type used to attend classes

Device type

- Desktop
- Mobile
- Laptop



Engagement in Group Studies vs Performance

- This is a bubble chart.
- It represents the effect of group study on the performance of students in online education.

Performance analysis based on engagement in group studies.

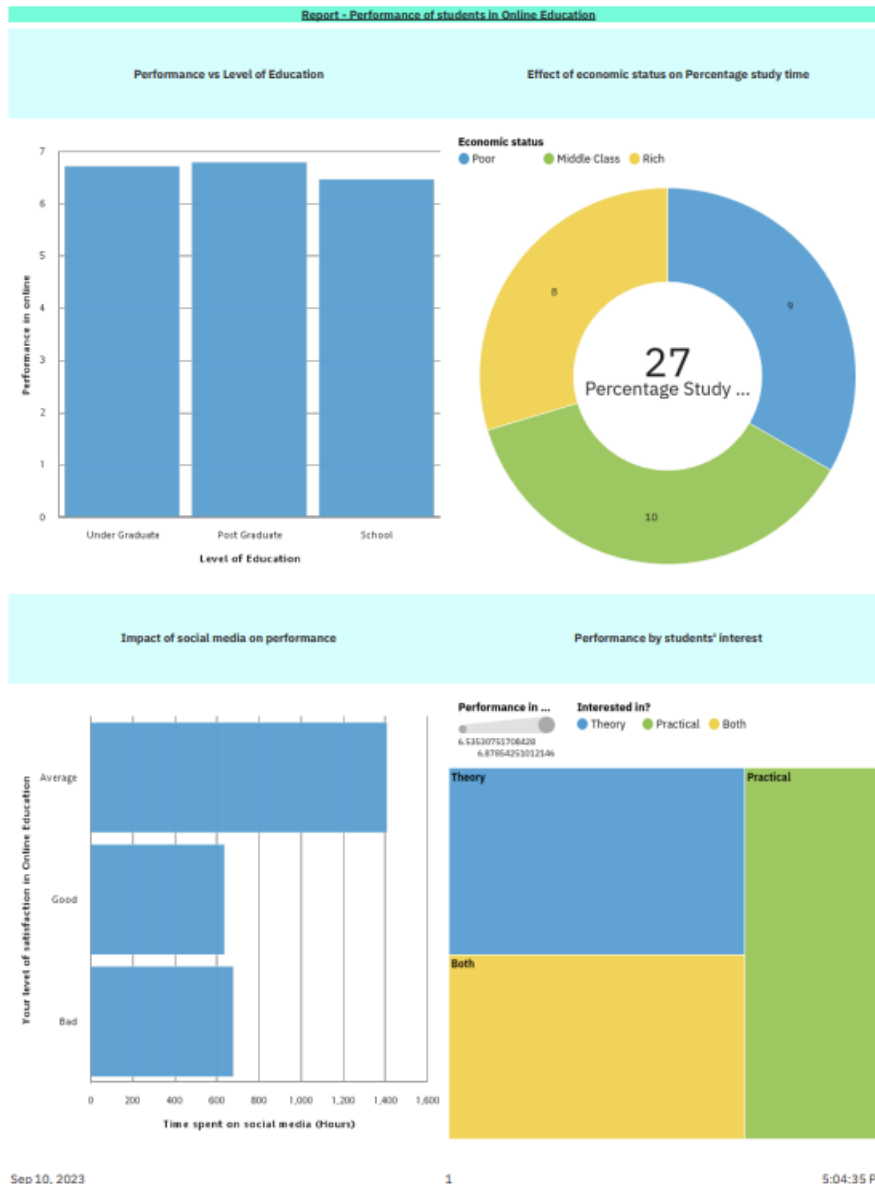
Performance in on... Engaged in group studies?

- No
- Yes





Report Output:



Web Integration Output Links:

Web integration links

Final web output:

<http://127.0.0.1:5500/templates/index.html#portfolio>

Dashboard:

Link

https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FOnline%2BEducation%2BDashboard&action=view&mode=dashboard&subView=model0



000018a7ab9ca29_00000001

Embed code

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src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FOnline%2BEducation%2BDashboard&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=view&mode=dashboard&subView=model0000018a7ab9ca29_00000001"
width="320" height="200" frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
```

Story:

Link

https://us3.ca.analytics.ibm.com/bi/?perspective=story&pathRef=.my_folders%2FOnline%2BEducation_story&action=view&sceneId=model0000018a7af7cf4a_00000000&sceneTime=1500

Embed code

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<iframe
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frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
```

Report:

Link

https://us3.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FOnline%2BEducation%2BReport&action=run&format=HTML&prompt=false

Embed code

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<iframe
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frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
```

Project Demonstration video Link:

<https://drive.google.com/file/d/19KMRtTn6s8iWHETW3fKRCbgmMKC895rw/view?usp=sharing>

**6. ADVANTAGES & DISADVANTAGES**

The proposed solution has the advantage of enhancement of the student's performance in online mode.

7. APPLICATIONS

Online / Blended / Virtual classes/ e-learning

8. CONCLUSION

The entire work is carried out to understand the challenges of the students in online education. The work included an in-depth analysis to find factors that affected their performance during a pandemic. As per the analysis, it is found that students were lagging in internet facilities and the devices used during online education.

9. BIBLIOGRAPHY

References:

- [1] <https://github.com/smartinternz02/SI-GuidedProject-535015-1694320963/tree/main>
- [2] <https://us3.ca.analytics.ibm.com/bi/?perspective=home>
- [3] <https://www.flexsmart.pro/home/>