

Master of Computer Application(MCA) Major Project Synopsis
On

Analyzing the Impact of Digital Learning on Rural Education

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree
of
Master of Computer Applications

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Chapter 1.

Tools and Technologies

Here are the tools and technologies requirements for the project:

a) Data Analysis and Visualization:

- Power BI Desktop - For building interactive dashboards.
- Excel / CSV Files - For initial data collection and preprocessing.

b) Data Preparation and Cleaning:

- Power Query (built into Power BI) - For data transformation and cleaning.

c) Data Modeling:

- DAX (Data Analysis Expressions) - For advanced calculations and measures in Power BI.

d) Data Storage:

- MySQL Database - For structured data storage and efficient querying.
- Local File Storage (CSV, Excel) - For offline data management and quick data access.

Chapter 2.

Hardware Requirements

Here are the hardware requirements for the project:

- Processor: Intel i5 or higher (preferably i7)
- RAM: 8 GB minimum (16 GB recommended)
- Storage: 256 GB SSD (faster read/write for large datasets)
- Graphics Card: Integrated GPU (Power BI uses DirectX 9 or higher)
- Display: 1080p monitor
- Internet Connection: High-speed (for Power BI Service and data source access)

Chapter 3.

Software Requirements

Here are the software requirements for the project:

- Operating System: Windows 10/11 (Power BI Desktop is only available on Windows)
- Power BI Suite: Power BI Desktop (Free)
- Data Preparation Tools: MYSQL, Excel(for initial data exploration)

Chapter 4.

Synopsis of Project

Here is the synopsis for the project:

1. *Title of the Project:* **Analyzing the Impact of Digital Learning on Rural Education**
2. *Objective:* The primary objective of this project is to assess the impact of digital learning on rural education in India. It aims to analyze key indicators such as digital literacy rates, student enrollment, dropout rates, gender disparity, internet penetration, and teacher-student ratios. By visualizing these factors using Power BI, the project intends to identify patterns, highlight regional disparities, and provide insights into how digital learning initiatives are affecting education in rural areas. The ultimate goal is to inform policy and help bridge the educational gap between rural and urban areas.
3. *Resources Required:* Some of the important datasets for the project are:
 - a) Education in India
 - Description: District and state-wise data on Indian primary and secondary school education for 2015-16.
 - Use Case: Provides insights into educational infrastructure and enrollment across rural and urban areas.
 - b) Internet Usage Rural vs Urban
 - Description: Data comparing internet usage between rural and urban populations in India.
 - Use Case: Helps assess digital accessibility disparities affecting online learning adoption.

c) School Age Digital Connectivity

- Description: Percentage of children aged approximately 3-17 with internet access at home, across various countries.
- Use Case: Useful for benchmarking India's digital connectivity among school-aged children.

d) Govt of India Literacy Rate

- Description: Official literacy rates from the 2001 and 2011 Indian census, covering 35 states and union territories.
- Use Case: Analyzing literacy trends in rural areas to correlate with digital learning initiatives.

e) 2011 Census of India

- Description: Comprehensive demographic data from the 2011 census, including information on villages and towns.
- Use Case: Provides context on rural demographics and infrastructure for digital learning analysis.