

SUMMER INTERNSHIP PROGRAM

at

PT. BHAGWAT DAYAL SHARMA POST GRADUATE INSTITUTE OF MEDICAL SCIENCES, ROHTAK HARYANA

From 1st May 2024 to 30th June 2024

A REPORT BY

Dr. Mahima Pahwa

Master of Business Administration

in

Hospital and Health Management

2023-25

under the Mentorship of

Dr. Tripti Bisawa

Professor

IIHMR University, Jaipur





Completion Certification from Pt. Bhagwat Dayal Sharma Post Graduate Institute of Medical Sciences, Rohtak, Haryana

CERTIFICATE

This is to certify that Dr. Mahima Pahwa of IIHMR University, Jaipur pursuing an MBA in Hospital and Health Management, batch 2023-25 has undertaken her summer internship in the Hospital Administration Department, PGIMS Rohtak from 1st May 2024 to 30th June 2024. The overall performance shown by her during the period was very good. This certificate is being issued to meet the requirements of the IIHMR University, Jaipur.

Date: 4/07/2024

Stamp/Seal: **Dr. BRIJENDER SINGH DHILLON**
Sr. Associate Prof. & Head
Deptt. of Hospital Admn.
& I/c. Ch. Ranbir Singh OPD
Pt. BDS PGIMS, ROHTAK

Dr. Brijender Singh Dhillon
Senior Professor and Head
Deptt. of Hospital Administration
PGIMS Rohtak

IIHMR University Faculty Mentor Approval

This is to certify that **Dr. Mahima Pahwa** of the academic year 2023-2025 of **INSTITUTE OF HEALTH MANAGEMENT RESEARCH** has prepared a poster with respect to her summer internship held during May-June 2024.

She has carried out work as per the guidelines. Her poster is approved for presentation.

Date:22/07/2024

A handwritten signature in black ink, appearing to be 'Tripti Bisawa', written over a horizontal line.

Dr. Tripti Bisawa
Professor
IIHMR University, Jaipur.

AIM- TO STUDY THE WORKLOAD OF THE ELECTRICITY SUPPLY IN TERTIARY CARE HOSPITAL.

HISTORY AND DESCRIPTION OF ORGANISATION

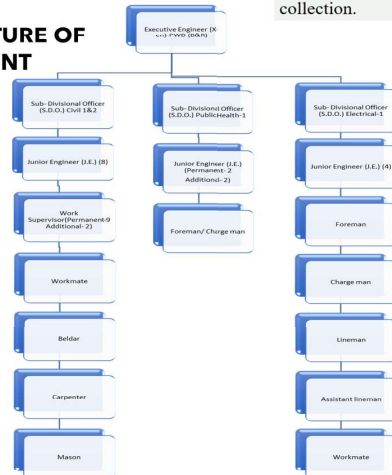
Pandit Bhagwat Dayal Sharma Post Graduate Institute of Medical Sciences (PGIMS Rohtak) is a government medical institution in Rohtak, Haryana, India. Established in 1960 as Medical College, Rohtak, it initially operated in collaboration with Government Medical College, Patiala. In 1963, the institute shifted to Rohtak and has since expanded into a comprehensive center for medical education and research. Incorporated into Pandit Bhagwat Dayal Sharma University of Health Sciences in 2008, PGIMS Rohtak now occupies a 350-acre campus and is renowned for its medical education and healthcare facilities both nationally and internationally.

ORGANISATION'S MISSION AND VISION

VISION- To be a premier healthcare institution known for excellence in medical education, research, and patient care, producing competent and compassionate professionals.

MISSION- The mission of PGIMS Rohtak is to provide top-notch medical education, deliver excellent healthcare services, promote medical research, engage in community health initiatives, and collaborate with other institutions for the benefit of society.

ORGANISATION STRUCTURE OF ELECTRICITY DEPARTMENT IN PGIMS, ROHTAK



OBJECTIVE

1. To study the existing workload per bed, infrastructure, and electrical complaints of Pt. B.D. Sharma PGIMS, Rohtak.
2. To study the electricity bills (per month amount) paid by PGIMS/UHS, Rohtak from January 2023 to April 2024.

METHODOLOGY

Dividing the electricity consumption to number of patients admitted to PGIMS Rohtak each month from January 2023 to April 2024 and then dividing them with days of each month to calculate average consumption price per bed per day.

Theoretical	Practical
Gives conceptual framework	Need based changes in research
Gives theoretical framework of data collection.	Difficulty in collecting data from 3 separate electrical departments.

CHALLENGES FACED-

- Data Fragmentation
- Lack of inter department transparency.
- Limited participation of staff.

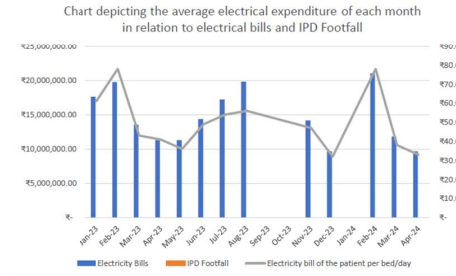
LEARNINGS-

- Realizing the critical role of reliable electricity in healthcare settings.
- Learning about various energy-saving measures
- Value of Continuous Improvement

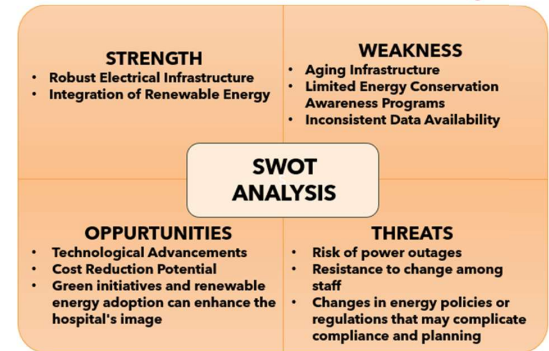
USEFULNESS-

- Learned about the ground realities.
- Got real world experience of conducting research.

ANALYSIS-



CONCLUSION- Electricity costs ₹49.69 per patient per bed/day on an average that varies due to seasons, hospital efficiency, and external factors.



RECCOMENDATIONS-

- Use tiles with high Solar Reflective Index to lower energy
- Use Motion Sensors for Lighting and Fans
- Implement Photo Sensors for External Lighting
- Install Automatic Closing Doors
- Green roofs and walls
- Reducing Phantom Load by Smart power strips
- Machine learning (ML) techniques of historical weather and energy use.
- Installing the capacitors with an improvement in power factor
- Regular Audits

Week-1

Name of the Organisation: PGIMS, Rohtak

Area/ Department- Hospital administration

Project- Electricity consumption

Name of the Student: Mahima Pahwa

Roll no: 1740

Stream: MBA in Hospital and Health Management

Week no: 1

From: 1st May 2024 to 4th May 2024

Activity Done	- Collected electricity bills of April month. - Collected electrical complaints of the last 2 months. - Working on the Introduction part of the project.
Linking theory (Classroom learning) with practice at your organization	Able to connect the data collection process and sample collection according to the type of research design.
Gaps identified in the working area.	There are 3 departments of electricity (supply, maintenance, and billing) which makes it very difficult to collect data. Also, all 3 don't know about the work of each other in detail. Co-ordination is missing a little bit.
Suggestions for improvement	All 3 electrical departments should be made nearby or merged to one so that it becomes easy to function in a coordinated manner.
Plan for the next week	- Electricity and water bills collection (data collection). - Completing the introduction part.

Mahima

Signature of the Student

Approved by the IIHMR University's Mentor

Week-2

Name of the Organisation: PGIMS, Rohtak

Area/ Department - Hospital administration

Project- Electricity consumption

Name of the Student: Mahima Pahwa

Roll no: 1740

Stream: MBA in Hospital and Health Management

Week no: 2

From: 6th May 2024 to 11th May 2024

Activity Done	- Collected electricity-related details of different buildings of PGIMS, Rohtak. - Made an Excel sheet of all the electrical complaints made within the past 2 months - Worked on the introduction and literature review part of the project.
Linking theory (Classroom learning) with practice at your organization	Able to connect the introduction writing and literature review process according to the topic's reliability and validity.
Gaps identified in the working area.	Most of the electrical complaints will not occur in the first place if proper servicing is done from time to time.
Suggestions for improvement	At least once or twice a year proper servicing of equipments and A.C.s should be done to reduce the power factor and improve the quality of healthcare services.
Plan for the next week	- Completing the literature review. - Data collection of patients.

Mahima

Signature of the Student

Approved by the IIHMR University's Mentor

Week-3**Name of the Organisation:** PGIMS, Rohtak**Area/ Department -** Hospital administration**Project-** Electricity consumption**Name of the Student:** Mahima Pahwa**Roll no:** 1740**Stream:** MBA in Hospital and Health Management**Week no:** 3**From:** 13th May 2024 to 18th May 2024

Activity Done	Made a word document of summary containing relevant literature review part of the project.
Linking theory (Classroom learning) with practice at your organization	Able to connect the literature review process according to the topic of project.
Gaps identified in the working area.	After doing the literature review a lot needed to be done for reducing the consumption of electricity.
Suggestions for improvement	Some of the suggestions include usage of LED lights, thermal insulation or curtains on walls, use of sensor lights etc.
Plan for the next week	Data collection of patients.

**Signature of the Student****Approved by the IIHMR University's Mentor**

Week-4

Name of the Organisation: PGIMS, Rohtak**Area/ Department-** Hospital administration**Project-** Electricity consumption**Name of the Student:** Mahima Pahwa**Roll no:** 1740**Stream:** MBA in Hospital and Health Management**Week no:** 4**From:** 20th May 2024 to 25th May 2024

Activity Done	- Went on a facility round with The Director, The Vice-Chancellor, The Deputy Medical Superintendent, and the heads of all the various departments. - Collected data concerning electricity from the Public Health Department, Central Workshop, Central Store, Boiler Section, Director's office, and CSSD. - Ensured the compliances associated with the minutes of the meetings held from the start of the year through an Excel document.
Linking theory (Classroom learning) with practice at your organization	- Able to connect the classroom teachings of how the facilities of the hospital should be like ICU rooms' door should open inside, triage should be there, colour coded dustbins should be there, the nursing station should be in such a way that all patients are visible, there should be a particular distance between the wards, PICU should have creche facility, etc. - Able to connect the visit that we had in the C.K. Birla Hospital in Jaipur to the facility round of PGIMS, Rohtak.
Gaps identified in the working area.	- Floor tiles were broken in some places. - Paint was peeled off from various walls. - Water was dripping from the roof in one room of the faculty. - The fire escape was shabby and in one of the wards it was closed.
Suggestions for improvement	- Repair work should be done as soon as possible - All fire escape should be made functional and an updated fire escape manual should be there for the hospital.
Plan for the next week	- Data collection. - Attending meetings

**Signature of the Student****Approved by the IIHMR University's Mentor**

Week-5

Name of the Organisation: Pt. B.D. Sharma PGIMS, Rohtak

Area/ Department- Hospital administration

Project- Electricity consumption

Name of the Student: Mahima Pahwa

Roll no: 1740

Stream: MBA in Hospital and Health Management

Week no: 5

From: 27th May 2024 to 1st June 2024

Activity Done	• Attended compliance meetings of the Neurology, Cardiology, and Urology departments and jotted down the key points. • Collected data concerning electricity from the Public Health Department, Central Workshop, and Civil departments. • Formatted an Excel document regarding the complaints associated with electricity held from March 2024 till May 2024.
Linking theory (Classroom learning) with practice at your organization	• Able to connect the classroom teachings of making the facilities available according to the needs of each department like making a proper budget plan according to the type of requirements, allotment of things, space utilization, and many more.
Gaps identified in the working area.	• It has come to my notice that a significant number of complaint resolution tasks assigned to the B&R department remain unfinished. Despite receiving a formal invitation, no representative from the B&R department was present at the recent meeting.
Suggestions for improvement	• Schedule a follow-up meeting at the earliest convenience where representatives from the B&R department must be present to discuss the review findings and agree on a concrete action plan to resolve the backlog.
Plan for the next week	• Data collection. • Project finalization.

Mahima

Signature of the Student

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Week-6

Name of the Organisation: Pt. B.D. Sharma PGIMS, Rohtak

Area/ Department- Hospital administration

Project- Electricity consumption

Name of the Student: Mahima Pahwa

Roll no: 1740

Stream: MBA in Hospital and Health Management

Week no: 6

From: 3rd June 2024 to 8th June 2024

Activity Done	- Worked comprehensively on the project and also analyzed the data through charts I made from the data collected so far. - Collected data concerning water from the Department of Water Works. - Organized the Excel document regarding the Electrical complaints associated with this week.
Linking theory (Classroom learning) with practice at your organization	Able to connect the classroom teachings of analyzing the data obtained according to the research work by keeping the objectives in mind to obtain the result.
Gaps identified in the working area.	I visited the Water Works Department, where I learned the entire process of water decontamination through filtration and chlorination, as well as how the purified water is distributed throughout the hospital. During my visit, I noticed that many of the motors had been non-operational for a considerable period, causing the functioning motors to handle the heavy task of supplying 2 million gallons of water daily to meet the hospital's needs.
Suggestions for improvement	The non-operational motors need to be repaired or replaced as soon as possible. Additionally, more fans or a cooling system should be installed to prevent the machinery from overheating.
Plan for the next week	- Collection of electrical bills that are remaining. - Project finalization.

Mahima

Signature of the Student

Approved by the IIHMR University's Mentor

Week-7**Name of the Organisation:** Pt. B.D. Sharma PGIMS, Rohtak**Area/ Department-** Hospital administration**Project-** Electricity consumption**Name of the Student:** Mahima Pahwa**Roll no:** 1740**Stream:** MBA in Hospital and Health Management**Week no:** 7**From:** 10th June 2024 to 15th June 2024

Activity Done	• Calculated the result from the data I collected. • Suggested the recommendations in the report based on the result obtained for optimizing the electrical consumption in the hospital. • Completed the final project report and sent it to DMS sir for review and further improvement.
Linking theory (Classroom learning) with practice at your organization	• Able to connect the classroom teachings of interpreting and deducing the result from the data obtained according to the research work.
Gaps identified in the working area.	• A lot of gaps like the absence of LED lights, lack of curtains on windows directly exposed to sunlight, absence of motion sensing lights and fans, and many more.
Suggestions for improvement	• There should be fans in rooms where only ACs are there, LED lights should be installed, motion sensing lights and fans, occupancy sensors should be installed in toilets and many more.
Plan for the next week	• Project finalization.

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Week-8**Name of the Organisation:** Pt. B.D. Sharma PGIMS, Rohtak**Area/ Department** - Hospital administration**Project-** Electricity consumption**Name of the Student:** Mahima Pahwa**Roll no:** 1740**Stream:** MBA in Hospital and Health Management**Week no:** 8**From:** 17th June 2024 to 22nd June 2024

Activity Done	- Completed the final project report and presented it to Dr. Sukhbir Brar for review and suggestions for improvement. - Based on Dr. Sukhbir Brar's feedback, I resumed data collection. - Gathered data from HMIS and the Ortho Electrical Workshop. - Due to the unavailability of water-related data, my project is now focused solely on electrical consumption in tertiary hospitals.
Linking theory (Classroom learning) with practice at your organization	Able to connect the classroom teachings of interpreting and deducing the result from the data obtained according to the research work.
Gaps identified in the working area.	During my visit to HMIS for data collection, I observed that most of the staff lacked basic computer skills, as everything used to be done manually in the past.
Suggestions for improvement	Training sessions should be conducted for the staff to enhance their basic computer skills, helping them overcome their fear of technology.
Plan for the next week	Project finalization.

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Week-9

Name of the Organisation: Pt. B.D. Sharma PGIMS, Rohtak**Area/ Department** - Hospital administration**Project-** Electricity consumption**Name of the Student:** Mahima Pahwa**Roll no:** 1740**Stream:** MBA in Hospital and Health Management**Week no:** 9**From:** 24th June 2024 to 29th June 2024

Activity Done	- Completed the final project report. - Learned about the organizational structure.
Linking theory (Classroom learning) with practice at your organization	Able to connect the classroom teachings regarding organizational structure.
Gaps identified in the working area.	While learning the organizational structure, I talked to various employees working there but 90% of them were unaware of the organizational structure. They didn't know the end position they had to reach to gain some success in life.
Suggestions for improvement	- There should be some awareness sessions about the organization. - During job interviews, the interviewer should ask them questions about the organization and where they see themselves in the future.
Plan for the next week	Poster completion.

**Signature of the Student****Approved by the IIHMR University's Mentor**

Compiled Report

Name of the Organization: Pt. B.D. Sharma PGIMS Rohtak, Haryana

Area/ Department: Hospital Administration

Project of Summer Internship Program:

To study the workload of the electricity supply in tertiary care hospital.

Name of the Student: Dr. Mahima Pahwa

Roll no:1740

Stream: MBA in Hospital and Health Management

Activity Done	Project Initiation and Data Collection: 1. Initiated work on project introduction and objectives. 2. Collected electricity bills from January 2023 to April 2024. 3. Gathered electricity-related details of PGIMS, Rohtak. 4. Collected electrical complaints from March 2024 to June 2024. 5. Created an Excel sheet of all electrical complaints made within the 4 months. Literature Review and Documentation: 1. Worked on the literature review sections of the project. 2. Created a Word document summarizing relevant literature review for the project. 3. Read the entire Energy Audit conducted in PGIMS in the year 2022 by A-Z Energy Engineers PVY Ltd. Data Gathering and Compliance: 1. Collected electricity-related data from multiple departments: - Electrical Engineering Department - Central Workshop - Central Store - Estate Department - Accounts Department - Civil department - HMIS Department - Ortho Electrical Workshop 2. Ensured electrical complaint compliance with minutes of meetings held since the start of the year through an Excel document. Data Analysis and Project Development: 1. Analysed collected data through tables and charts. 2. Complaint Analysis and Trend Identification: - Created a centralized Excel database for electrical
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complaints (March 2024 - June 2024)

- Analysed complaint patterns and frequencies.
- Identified recurring issues and high-priority areas.

3. Calculated results from collected data.

4. Suggested recommendations in the report for optimizing electrical consumption in the hospital.

Project Finalization and Revision:

1. Completed the initial project report and sent it to DMS (guide) for review and finalization.

2. Presented the final project report to Guide and co-guide for review and suggestions.

3. Based on feedback, resumed data collection:

- Gathered data from HMIS and Ortho Electrical Workshop.

4. Adjusted project focus to electrical consumption in tertiary hospitals due to the unavailability of water-related data.

5. Completed the revised final project report.

Additional Learning:

1. Learned about the organizational structure.
2. Learned about the functioning of OT, Gas Manifold, CSSD, and Water Works Department.
3. Participated in a facility round with the Director, Vice-Chancellor, Deputy Medical Superintendent, and heads of various departments.
4. Attended compliance meetings of the Neurology, Cardiology, and Urology departments, noting key points.

Overview of the Project-

This study examines the Electricity Engineering Department at Pt. B.D. Sharma PGIMS, Rohtak, from May 1, 2024, to June 30, 2024, aiming to improve efficiency and sustainability in healthcare management.

Key findings include seasonal variations in electricity use and recurrent maintenance issues with AC systems, lighting, and generators. By analyzing data from January 2023 to June 2024, the study proposes 30 recommendations to enhance energy efficiency, such as using fans in solely air-conditioned rooms, motion sensors lighting and fans, maintaining AC units, and obscuring windows receiving direct sunlight with curtains or paint. Implementing these measures will improve efficiency, reduce costs, and

	ensure reliable patient care. In conclusion, the study offers a roadmap for PGIMS to enhance electricity management, promoting sustainability and setting a benchmark for other healthcare institutions.
Linking theory (Classroom learning) with practice at your organization	1. Research Design and Data Collection - Connected sample selection and data collection processes to research design types: - Observational retrospective studies - Observational prospective studies 2. Literature Review and Introduction - Connected introduction writing and literature review process based on: - Topic's reliability - Topic's validity 3. Facility Planning and Management • Connected classroom knowledge to real-world observations: - ICU room's door opening inward - Presence of triage areas - Color-coded waste bins - Nursing station placement for optimal patient visibility - Appropriate ward spacing - PICU with creche facility - Optimize space utilization 4. Research Implementation and Analysis - Analysed data keeping research objectives in mind - Interpreted and deduced results from the obtained data.
Gaps identified on the working area.	1. Departmental Coordination and Efficiency <u>Electricity Management:</u> - Three separate departments (supply, maintenance, and billing) operate with limited inter-departmental knowledge and coordination. - This approach complicates data collection and overall efficiency. <u>Maintenance and Complaint Resolution:</u> - Many electrical issues could be prevented with regular, proactive servicing. - Significant number of B&R department complaint resolution tasks remain unfinished. - Lack of B&R department representation at important meetings.

	2. Infrastructure and Facility Condition <u>Building Maintenance:</u> - Various issues observed: broken floor tiles, peeling paint, water leakage in faculty room. - Fire safety concerns: shabby fire escapes, with one closed in a ward. <u>Water Works:</u> - Observed the water decontamination process (filtration and chlorination). - Multiple non-operational motors, placing strain on functioning motors to supply 2 million gallons daily. <u>Energy Efficiency:</u> - Literature review indicates significant potential for reducing electricity consumption. - Observed gaps: absence of LED lights, lack of curtains on sun-exposed windows, no motion-sensing lights or fans. 3. Technology and Skills <u>HMIS (Health Management Information System):</u> - Most staff lack basic computer skills due to previous reliance on manual processes. 4. Organizational Structure and Employee Awareness - 90% of employees interviewed were unaware of the organizational structure. - Lack of knowledge about career progression paths within the organization.
Suggestions for improvement	1. Departmental Coordination and Operational Efficiency <u>Electricity Management:</u> Recommendations: - Implement an integrated electricity management system that allows real-time data sharing across all three departments. - Establish regular inter-departmental meetings to improve coordination and streamline processes. - Consider restructuring to create a unified electricity management division with specialized teams, fostering a more cohesive approach. <u>Maintenance and Complaint Resolution:</u> Recommendations: - Develop a comprehensive preventive maintenance schedule for all electrical systems and infrastructure. - Implement a digital ticketing system for complaint tracking, with clear escalation procedures and resolution timelines. - Train in-house maintenance staff or contract with specialized service providers for regular check-ups or establish a rapid response system for addressing

infrastructure issues whose benefits include:

- Prevents minor issues from escalating into major problems
- Maintains a safe and professional environment for patients and staff
- Reduces long-term maintenance costs

- Conduct a thorough review of the B&R department's workload, processes, and staffing to identify and address bottlenecks.

- Establish mandatory participation guidelines for departmental representatives in key meetings.

2. Infrastructure and Facility Condition

Building Maintenance: Recommendations:

- Conduct a comprehensive structural integrity assessment of the entire facility.

- Implement a prioritized repair schedule, addressing safety concerns first, followed by functional and aesthetic issues.

- Establish a regular maintenance cycle for painting and minor repairs to prevent deterioration.

- Immediately address fire safety issues, ensuring all escape routes are clear, functional, and regularly inspected.

Water Works:

Recommendations:

- Conduct an immediate audit of all water supply equipment, identifying non-functional units and assessing the condition of operational ones.

- Develop a phased replacement plan for outdated or frequently malfunctioning equipment.

- Install additional cooling systems to prevent machinery overheating to reduce strain on operational equipment and to improve energy efficiency.

Energy Efficiency:

Recommendations:

- Conduct a comprehensive energy audit to quantify current consumption and identify key areas for improvement.

- Implement a phased replacement of all lighting with LED alternatives, prioritizing high-usage areas.

- Install motion sensors for lighting and climate control in less frequently used areas.

- Improve building insulation, including the installation of energy-efficient window treatments.

Consider implementing a building management system (BMS) to optimize energy usage across the facility.

	3. Technology and Skills HMIS (Health Management Information System): Recommendations: - Conduct a skills assessment to identify specific areas of technological weakness among staff. - Develop a comprehensive training program addressing basic computer skills to reduce technophobia among staff. - Implement a peer mentoring system where tech-savvy staff can provide ongoing support to colleagues. - Consider hiring dedicated IT support staff to provide real-time assistance and troubleshooting. 4. Organizational Structure and Employee Awareness Recommendations: - Develop a clear, visually appealing organizational chart that is easily accessible to all employees. - Create detailed job descriptions having potential career progression paths. - Implement a regular schedule of career development workshops and counselling sessions. - Conduct regular meetings to discuss organizational goals, changes, and opportunities for employee input.
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Mahima

Signature of the Student



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