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Study and Evaluate the Impact of ERP System Implementation on Student Performance Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri.

Miss. Sakshi Arunrao Dhote, Dr. Rajendra Jarad, Dr. Mahendra Yadav, Dr. Praveen Suryavanshi, Dr. Dhananjay Bhavsar, Dr. Nilambari Moholkar

Department of MBA, D.Y. Patil institute of Technology, Pimpri, Pune, India
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ABSTRACT :

This study explores the impact of the implementation of an Enterprise Resource Planning (ERP) system on student performance and engagement at Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri. With educational institutions increasingly relying on digital platforms for administrative and academic functions, the effectiveness of ERP systems becomes crucial. The research focuses on assessing the ERP system's usability, its role in enhancing academic performance, communication, student satisfaction, and administrative efficiency. Data was collected from a representative sample of students across various departments using surveys and interviews. Findings reveal that while a significant majority of students find the system user-friendly and report improved academic management, there are notable challenges such as occasional technical issues and varying levels of engagement. Overall, the ERP system has shown a positive influence on streamlining educational processes and improving student outcomes.

Keywords :ERP system, student performance, higher education, academic efficiency, administrative processes, student engagement, DYPIITM, educational technology, digital transformation, user satisfaction.

Introduction to Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri

Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri, is a premier institution that aims to provide quality education in the field of technology and management. Located in Pimpri, Pune, this institute is part of the esteemed Dr. D.Y. Patil Unitech Society, which is known for its commitment to promoting higher education and fostering academic excellence. The society, under the leadership of Dr. D.Y. Patil, has established various educational institutions across India, and DYPIITM stands out as one of the leading engineering and management colleges in the region.

Dr. D.Y. Patil Institute of Technology and Management offers a range of undergraduate and postgraduate programs, primarily in the fields of engineering, technology, and management. The programs are designed to cater to the ever-evolving demands of the industry, ensuring that students acquire the knowledge and skills necessary to succeed in the competitive global market. Some of the popular programs include:

- **Bachelor of Engineering (B.E.)** in various disciplines such as Computer Engineering, Mechanical Engineering, Civil Engineering, and Electrical Engineering.
- **Master of Business Administration (MBA)**, designed to equip students with managerial skills and leadership qualities.

Dr. D.Y. Patil Institute of Technology and Management, Pimpri, stands as a beacon of excellence in education, producing well-rounded, skilled professionals in the fields of engineering and management. With its commitment to quality education, industry partnerships, and emphasis on research and development, the institute continues to make significant contributions to the academic and professional world.

Vision for Implementing an ERP System at Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri

The vision for implementing an ERP (Enterprise Resource Planning) system at **Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri** is to streamline academic and administrative processes, enhance communication, and provide a more efficient, student-centered approach to education. This system will aim to empower students by giving them easy access to information, improve their learning experience, and ensure a more organized and transparent academic environment.

Key Aspects of the Vision:

- The ERP system will act as a single platform where students can access all relevant academic and administrative information.
- Students will receive real-time updates on course changes, assignments, exam dates, and college events.
- The ERP will simplify administrative processes like fee payments, course registration, and hostel management. Students can complete these tasks quickly and easily, without needing to visit multiple offices.
- The ERP system will be integrated with features that help students prepare for industry needs, such as internship opportunities, career development programs, and placement drives.
- By offering features such as event calendars, club activities, online discussions, and feedback systems, the ERP will help in promoting extracurricular involvement and overall student engagement.

Introduction of Project :

In the modern educational landscape, technology plays a crucial role in enhancing learning outcomes and administrative efficiency. Educational institutions are increasingly adopting Enterprise Resource Planning (ERP) systems to streamline administrative functions and improve academic processes. **Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri**, part of the Dr. D.Y. Patil Unitech Society, is one such institution that has implemented an ERP system to foster academic excellence, improve student engagement, and optimize resource management.

The purpose of this project is to **study and evaluate the impact** of the ERP system implemented at DYPIITM on student performance, engagement, and overall academic experience. This evaluation will not only focus on the operational benefits of the ERP system but will also analyze how the system has affected student outcomes, including academic performance, time management, and student satisfaction.

The successful implementation of an ERP system at **Dr. D.Y. Patil Institute of Technology and Management, Pimpri** is expected to have a profound impact on both the administrative functions and the academic performance of students. Through this study, the project aims to provide valuable insights into how such technological systems can improve student outcomes and create a more streamlined, efficient learning environment. The findings will not only help evaluate the current impact but also guide future improvements in the institution's approach to technology-driven education.

Objectives :

- To assess how the ERP system improves **accessibility** to academic resources (timetables, grades, assignments, and course registration).
- To examine the impact of the ERP system on students' **academic performance**
- To identify the level of **user satisfaction** with the ERP system among students and the barriers they face while using it.
- To understand the influence of the ERP system on **student communication** and **engagement**.
- To assess the level of support provided to users (students) and identify areas where improvements could be made to enhance the user experience.

These objectives aim to provide a comprehensive understanding of how the ERP system at **Dr. D.Y. Patil College, Pimpri** affects students highlighting its benefits and areas for improvement.

Literature review :

Chaudhary (2018) highlighted the importance of **student satisfaction** in the successful implementation of ERP systems in universities. The research suggested that students' academic performance is directly influenced by how user-friendly and effective the ERP system is in meeting their needs. When students perceive the ERP system as useful, they are more likely to engage with it regularly, which, in turn, leads to improved academic outcomes.

Zhao et al. (2016) emphasized the significant benefits that ERP systems bring to the education sector by streamlining university operations. Their study found that ERP systems improve student engagement by offering features like real-time grade tracking, assignment management, and student-faculty communication platforms. These features help students stay on top of their academic responsibilities, contributing to better time management and academic performance.

Kumar and Garg (2020) explored the role of ERP systems in enhancing academic performance at Indian universities. Their study concluded that ERP systems contribute to improved academic outcomes by enhancing student engagement. The system's features such as centralized access to course materials, assignment submissions, and timely notifications of deadlines helped students stay organized and on track. As a result, students were more likely to submit assignments on time, attend classes regularly, and perform better academically.

Singh and Verma (2017) examined the challenges faced by educational institutions during the implementation of ERP systems. Their research identified issues such as **system integration problems**, **resistance to change** from students and faculty, and **insufficient training** as barriers to successful ERP adoption. These challenges often led to underutilization of the ERP system, which, in turn, could hinder improvements in student performance. The study underscored the importance of addressing these barriers through proper training and support to maximize the potential benefits of the ERP system.

Narayan and Sundararajan (2019) focused on the broader institutional benefits of ERP systems. Their research showed that ERP systems not only improve operational efficiency but also support better decision-making at the institutional level. By providing comprehensive data on student performance, course enrollments, and faculty interactions, ERP systems enable institutions to optimize resource allocation and improve the learning environment, which can ultimately lead to enhanced student performance and success.

Studies (Gupta, 2014; Badewi et al., 2018) suggest that when used effectively, ERP systems promote better time management and academic planning, leading to improved performance outcomes. At DYPIITM, students benefit from structured learning plans and timely academic feedback, supporting a more productive educational experience.

Scope of study :

This research will focus specifically on Dr. D.Y. Patil Institute of Technology and Management (DYPIITM) pimpri, examining the impact of the ERP system implemented in the institution and student performance . Data will be gathered from:

- Students (through surveys and interviews)

Key Areas of the Study :

- Academic Performance Evaluation:
- Student Engagement and Interaction
- Student Satisfaction and User Experience
- Impact on Administrative Processes

Significance of the Study :

This study will provide valuable insights into the effectiveness of ERP systems in educational institutions like Dr. D.Y. Patil College. The findings can guide future improvements in the system's implementation, user training, and support, as well as help other institutions consider the pros and cons of ERP adoption. The research will also highlight areas where the system could be improved to benefit students

1. **Improving Academic and Administrative Efficiency:** Real-time access to grades, schedules, assignments, and exam results.
2. **Enhancing Student-Faculty Communication:** Facilitates seamless communication with faculty for feedback and academic guidance.
3. **Streamlining Course Registration and Timetable Management:** Simplifies course selection, schedule management, and conflict resolution.
4. **Financial Transparency and Management:** Provides clear access to financial data like tuition fees and payment schedules.
5. **Real-Time Notifications for Academic and Administrative Updates:** Keeps students informed about deadlines, exams, and important announcements.
6. **Empowering Students through Self-Service Features:** Enables students to manage academic and administrative tasks independently.
7. **Measuring Overall Satisfaction and Experience:** Assesses student satisfaction and identifies areas for system optimization.

Challenges :

Challenges in Implementing and Evaluating the Impact of the ERP System on Student Performance at DYPIITM, Pimpri

- **Resistance to Change:**
    - Reluctance from students, faculty, and staff to adopt the new system.
- **User Training and Familiarity:**
    - Difficulty in understanding the system for students
- **Technical Issues and System Downtime:**
    - System failures, technical glitches, or downtime disrupting academic processes.

- Impact: Students unable to access critical information, affecting performance.

- **Data Security and Privacy Concerns:**
  - Risks related to the security of sensitive student and academic data.
- **Evaluation of Impact on Student Performance:**
  - Complexity in isolating the effect of the ERP system from other factors influencing academic success.
- **Resistance to Digitalization:**
  - Limited digital literacy or access to technology for some students.
- **Managing Change Over Time:**
  - Continuous updates and changes to the system can cause confusion or resistance.
- **Resource Allocation and Cost Implications:**
  - High initial costs and resource requirements for implementation and maintenance.

Research methodology :

The research methodology for evaluating the study and evalute the impact of ERP system implementation and student performance specifically focuses on understanding how the ERP system affects **students** in their academic and administrative tasks. This methodology will involve a combination of **quantitative** and **qualitative research methods** to gain comprehensive insights from student perspectives.

1. Research Design

- **Descriptive Research Design**: This research will use a **descriptive research design**, focusing on understanding how the ERP system influences the daily academic activities of students . The goal is to describe their experiences, satisfaction levels, and any challenges they face while using the system.
- **Cross-sectional Study**: The study will collect data from students at a specific point in time after the ERP system has been implemented, providing a snapshot of its impact on students.

Population and Sample

- **Population**:

Students: Undergraduate and postgraduate students from various departments at Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri.

The **student population** at **Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri**, comprises a total of **4411 students** , enrolled across various undergraduate and postgraduate programs in fields such as engineering, technology, and management. This diverse student body provides a broad spectrum of academic backgrounds, interests, and experiences, making it an ideal sample for evaluating the impact of the ERP system on student performance.

The research will focus on a representative subset of this population, using **stratified random sampling** to ensure that different academic departments and student categories are adequately represented.

- **Sample :**

For this research, the **sample** will be drawn from the **4411 students** enrolled at **Dr. D.Y. Patil Institute of Technology and Management (DYPIITM), Pimpri**. The sampling process will be based on **stratified random sampling**, which will ensure that students from different **programs** (such as engineering, technology, and management) and **academic years** are proportionately represented in the sample. This approach will account for any variations in how students from different fields interact with and are affected by the ERP system.

- A sample of approximately **100-159** students members will be selected to ensure a balanced representation across academic disciplines.

3. Data Collection Methods

The study will employ both **quantitative** and **qualitative** methods to gather comprehensive data on the ERP system's impact on students and faculty.

A. Primary Data Collection :

1. **Student Surveys/Questionnaires:**
    - **Purpose**: To assess students' experiences with the ERP system, including ease of use, accessibility, and how it has impacted their academic tasks (e.g., course registration, attendance, grade tracking).
    - **Format**: A structured questionnaire with a mix of **closed-ended questions** (Likert scale, multiple choice) and **open-ended questions** for students to provide qualitative feedback.
    - **Focus Areas**:
        - User-friendliness of the ERP system.
        - Impact on academic performance tracking.
        - Usefulness for accessing resources (e.g., timetables, grades, assignments).
        - Levels of satisfaction and any challenges faced while using the system.
2. **Interviews with student:**
    - **Purpose**: To gain deeper insights into students experiences with the ERP system, focusing on aspects not captured in the surveys.
    - **Format**: Semi-structured interviews with a few Students members, allowing them to share detailed experiences and perceptions about the ERP system's influence

B. Secondary Data Collection :

Past Research Studies and Case Studies:

- Secondary data will also be gathered from **published research papers**, **case studies**, and **institutional reports** from other universities and institutions that have implemented ERP systems. These studies can provide benchmark data or comparative analysis to understand broader trends and outcomes that may apply to the case at DYPIITM.

Feedback and Surveys from Previous Years:

- Past **surveys and feedback reports** collected from students, faculty, and administrative staff regarding the ERP system's usage, challenges, and benefits will be used. This data can provide a historical perspective on how the ERP system was perceived before and after its implementation and help understand its impact on student experience and academic performance.

4. Data Analysis Techniques

Qualitative Data Analysis :

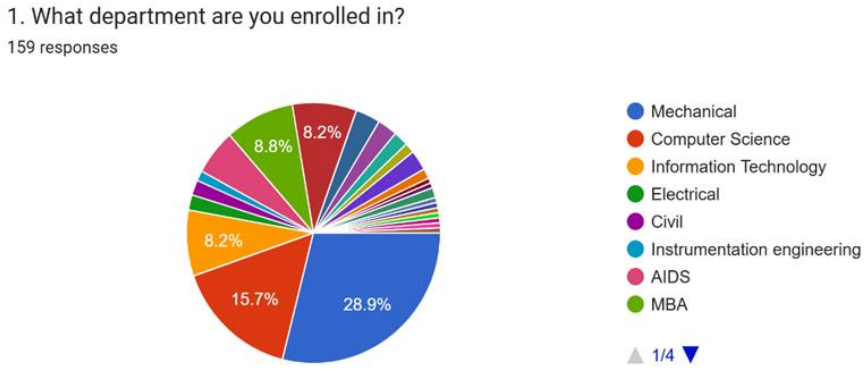
- **Thematic Analysis**: The open -ended responses from students as well as the interview and focus group discussion transcripts, will be analyzed using **thematic analysis**. This method will help identify common themes, challenges, benefits, and areas for improvement as experienced by the users.

Data Interpretation and Findings :

1. **Respondent from various Department of DYPIITM.**

Department	Percentage (%)	Approx. Frequency
Mechanical	28.9%	46
Computer Science	15.7%	25
Information Technology	8.2%	13
Electrical	8.2%	13
Civil	8.8%	14
Instrumentation	~4.4% (est.)	~7

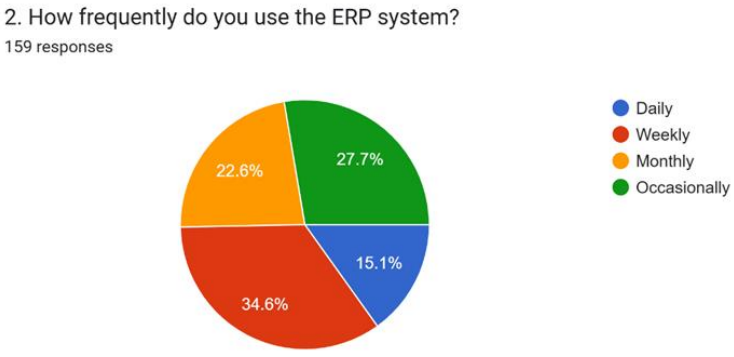
Department	Percentage (%)	Approx. Frequency
AIDS	8.8%	14
MBA	~4.4% (est.)	~7
ENTC	~3.5% (est.)	~6
Others	~9.1% (combined)	~14
Total	**100%**	**159**



From the above chart, it is evident that a large number of respondents, **28.9%**, belong to the **Mechanical** department, followed by **Computer Science** with **15.7%**. Other departments such as **AIDS, Civil, Electrical, and Information Technology** also represent a fair share of participants. The remaining departments contribute to a smaller portion of the response pool. This diversity in academic background reflects a broad cross-sectional input for evaluating the ERP system.

2. Frequently Use of ERP.

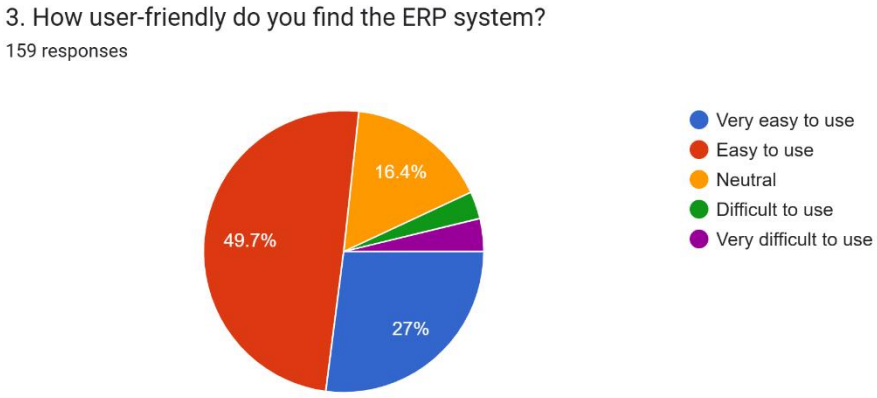
Frequency	Count	Percentage (%)	Valid Percentage (%)	Cumulative Percentage (%)
Daily	24	15.1	15.1	15.1
Weekly	55	34.6	34.6	49.7
Monthly	36	22.6	22.6	72.3
Occasionally	44	27.7	27.7	100.0
Total	**159**	**100.0**	**100.0**	



According to the responses, the majority of participants (**34.6%**) use the ERP system on a **weekly** basis, while **27.7%** use it **occasionally**. Only **15.1%** of respondents access the system **daily**, and **22.6%** use it **monthly**. This suggests that while the system is actively used, only a small group relies on it daily, possibly indicating that daily use may be role- or task-specific (e.g., faculty or admin).

3. User friendly ERP System .

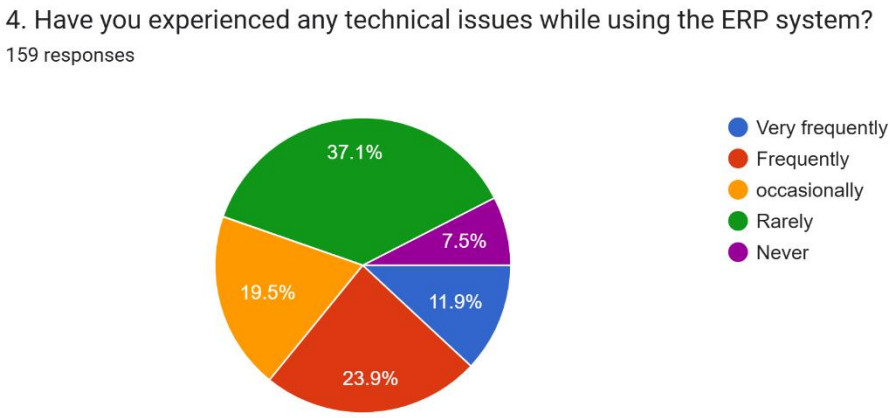
Response Option	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Very easy to use	43	27.0	27.0	27.0
Easy to use	79	49.7	49.7	76.7
Neutral	26	16.4	16.4	93.1
Difficult to use	5	3.1	3.1	96.2
Very difficult to use	6	3.8	3.8	100.0
Total	**159**	**100.0**	**100.0**	



From the above graph, it is visible that 27% of the respondents strongly agree that they find the ERP system to be very easy and user-friendly. 49.7% of the respondents were in agreement that the system is easy to use. Meanwhile, 16.4% of respondents were neutral, showing neither agreement nor disagreement. On the other hand, 3.1% of the respondents disagreed and found the system difficult to use, while 3.8% strongly disagreed, stating it was very difficult to use.

4. Technical issue whilw using the ERP system.

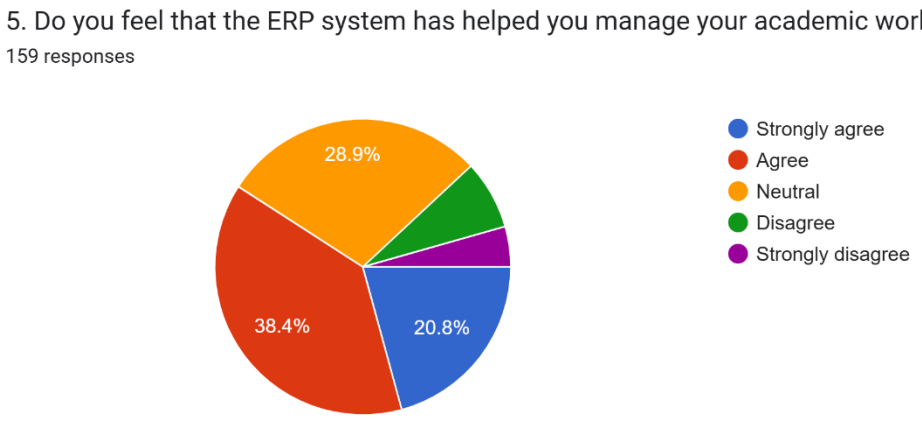
Response	Frequency	Percent	Valid Percent	Cumulative Percent
Very frequently	19	11.9%	11.9%	11.9%
Frequently	38	23.9%	23.9%	35.8%
Occasionally	31	19.5%	19.5%	55.3%
Rarely	59	37.1%	37.1%	92.4%
Never	12	7.5%	7.5%	99.9%



From the above graph, it is visible that 37.1% of the respondents use the ERP system rarely, followed by 23.9% who use it frequently. About 19.5% of the respondents use it occasionally, and 11.9% use it very frequently. A smaller percentage (7.5%) indicated that they never use the system. This implies that while many respondents are using the system, consistent daily or weekly use remains limited.

5. ERP system role in managing the academic workload

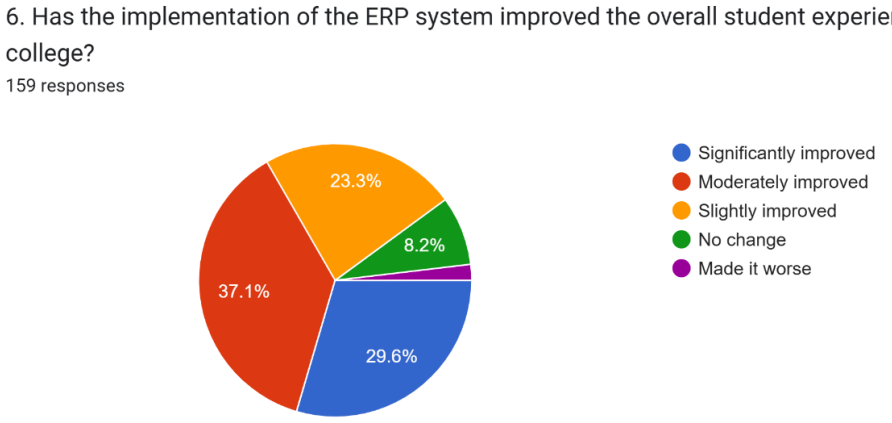
Response	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	33	20.8%	20.8%	20.8%
Agree	61	38.4%	38.4%	59.2%
Neutral	46	28.9%	28.9%	88.1%
Disagree	12	7.5%	7.5%	95.6%
Strongly disagree	7	4.4%	4.4%	100.0%



From the graph, it is observed that 38.4% of the respondents agree that the ERP system has helped them manage their academic workload better, and 20.8% strongly agree. About 28.9% of the respondents remained neutral, while 7.5% disagree and 4.4% strongly disagree. This suggests that most users perceive the system as beneficial in managing academic tasks.

Overall student experience after implementation of ERP system.

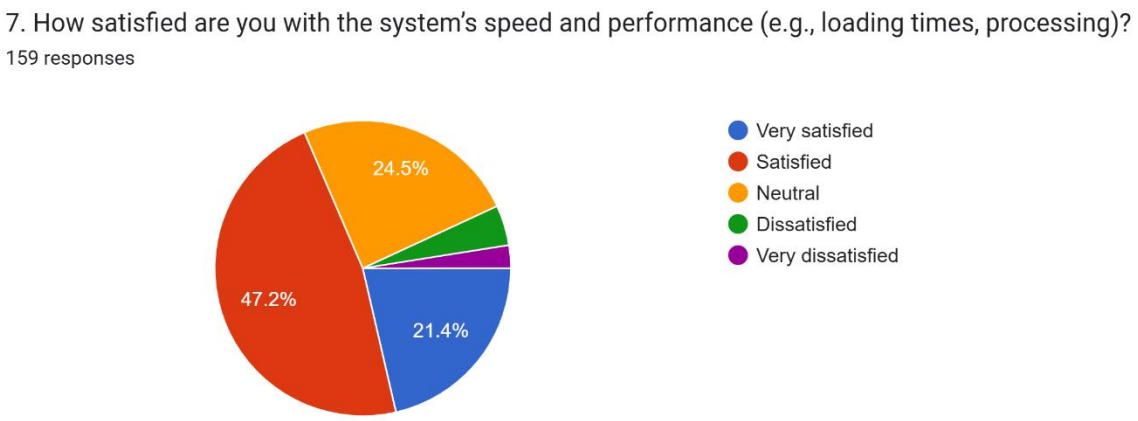
Response	Frequency	Percent	Valid Percent	Cumulative Percent
Significantly improved	47	29.6%	29.6%	29.6%
Moderately improved	59	37.1%	37.1%	66.7%
Slightly improved	37	23.3%	23.3%	90.0%
No change	13	8.2%	8.2%	98.2%
Made it worse	3	1.8%	1.8%	100.0%



According to the graph, 37.1% of the respondents reported that their performance moderately improved, and 29.6% indicated it significantly improved. Additionally, 23.3% experienced a slight improvement, while 8.2% noticed no change, and only 1.8% felt it made it worse. This reflects an overall positive impact of the ERP system on academic performance.

6. Satisfaction with the system speed and performance

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Very satisfied	34	21.4%	21.4%	21.4%
Satisfied	75	47.2%	47.2%	68.6%
Neutral	39	24.5%	24.5%	93.1%
Dissatisfied	8	5.0%	5.0%	98.1%
Very dissatisfied	3	1.9%	1.9%	100.0%



As seen in the graph, 47.2% of respondents are satisfied with the system's speed and performance, followed by 21.4% who are very satisfied. 24.5% remained neutral, while 5% are dissatisfied, and only 1.9% are very dissatisfied. This indicates that a large majority of respondents are generally satisfied with the technical performance of the ERP system.

Observations :

- **Usage Patterns**: 34.6% of students use the ERP system weekly, while 15.1% use it daily. This indicates moderate adoption among students.
- **User-Friendliness**: 76.7% of respondents agreed the ERP system is easy to use, while only 6.9% found it difficult or very difficult.
- **Technical Issues**: Around 35.8% of respondents reported frequent or very frequent technical issues, highlighting a need for system optimization.
- **Academic Management**: 59.2% of students agreed or strongly agreed that the ERP helped manage academic workload.
- **Student Experience**: 66.7% of students noted moderate to significant improvement in their overall academic experience post-ERP implementation.
- **System Performance**: 68.6% of students were satisfied or very satisfied with the speed and performance of the ERP system.

Conclusion :

The ERP system at DYPIITM, Pimpri, has made a meaningful contribution to improving students' academic and administrative experiences. It has enabled better time management, streamlined communication, and facilitated easier access to academic resources. Most students reported enhanced satisfaction and improved academic performance due to the system. However, challenges such as occasional technical issues, resistance to change, and the need for better user training were also identified. Continued efforts to enhance system reliability, provide comprehensive training, and ensure consistent user support will be critical for maximizing the ERP system's long-term benefits.