SETHU INSTITUTE OF TECHNOLOGY, Pulloor, Kariapatti

7.2.1. Best Practices

BEST PRACTICE 1:

1. **Title of the Practice : TRANSFORMATIONAL RURAL DEVELOPMENT UNDER UNNAT BHARAT ABHIYAN**

2. **Objectives of the Practice (100 words)**

   The objective of the Unnat Bharat Abhiyan initiative in our college is to leverage academic expertise and research capabilities to promote sustainable development in rural areas. This practice aims to transform rural clusters by implementing eco-friendly technologies, harnessing government schemes, and using local resources to address challenges like water scarcity, inefficient farming methods, and waste management. By reorienting academic curricula and involving students in real- world problem-solving, the initiative seeks to provide holistic development opportunities for villages and instill social responsibility among students. Additionally, it creates avenues for employment, improves the standard of living in rural communities.

3. **The Context(150 words)**

   Unnat Bharat Abhiyan was initiated in our college in 2019, inspired by the vision of creating transformational changes in rural development processes. The initiative emphasizes leveraging knowledge institutions to build an inclusive and sustainable India. Rural areas often face challenges such as water scarcity, inefficient agricultural practices, and poor waste management, which require innovative, context-sensitive solutions. By adopting five villages—Aaviyur, Kambikudi, S.Kallupatti, Kalkurichi, and Thonugal—our college aimed to address these challenges systematically. Projects like Grey Water Recycling, Solar Dryers, and IoT-based Smart Bins were implemented, focusing on local needs while fostering student participation in addressing societal issues. This practice represents a paradigm shift in academic and research priorities, ensuring that education contributes directly to community welfare.

4. **The Practice(400 words)**

The Unnat Bharat Abhiyan practice involves a series of targeted interventions aimed at addressing specific challenges in the adopted villages. The initiatives undertaken include:

- ✓ **Grey Water Recycling System Design and Economical Analysis for Residences**: Water scarcity is a critical issue in rural areas like Kariapatti. To address this, a Grey Water Recycling System was designed and implemented. Grey water from activities like washing and bathing was collected using PVC pipes and redirected for reuse. Dr. R. Tamilselvi led the project, demonstrating the system's efficiency and cost-effectiveness. This project alleviated water stress and reduced the dependency on freshwater resources, creating a sustainable model for other rural areas to adopt.
- ✓ **Efficient Solar Dryer for Farmers**:

  Farmers face significant post-harvest losses due to inefficient drying methods. The Efficient Solar Dryer, designed by Dr. J. Jeyashanthi, Dr. G. Narmadha, Dr. P. Meenalochini, and Dr.

  G. Soundradevi, was implemented to address this issue. The solar dryer reduced drying time by 50%, ensured better preservation, and improved product quality. Operating without electricity, it was especially beneficial for off-grid rural farmers, enhancing their income and reducing post-harvest losses.
- ✓ **IoT-Based Smart Bin for Organic Fertilizer Generation**:

  Waste management is another pressing concern in rural areas. An IoT-based Smart Bin was implemented to automate the composting process. Designed by Dr. G. Narmadha, Dr. J. Jeyashanthi, Dr. P. Meenalochini, and Dr. G. Soundradevi, the system maintained optimal conditions for decomposition, producing high-quality fertilizer within weeks. This initiative not only minimized waste sent to landfills but also provided a sustainable solution for agricultural needs.

These projects were developed with active participation from students and faculty, aligning with the curriculum to create impactful learning experiences. By integrating practical knowledge with community service, the initiative has established a model for rural development through academic intervention.

5. **Evidence of Success(200 words)**

The Unnat Bharat Abhiyan initiative has demonstrated tangible results in the adopted villages. The Grey Water Recycling project has significantly reduced water wastage, ensuring an alternative water source for households. The Efficient Solar Dryer improved post-harvest management, increasing farmers' income by up to 30%. Similarly, the IoT-based Smart Bin project reduced organic waste by 60%, providing high-quality fertilizer for local farming activities. Beyond these quantifiable outcomes, the initiative has fostered a sense of social responsibility among students and faculty. Over 200 students participated in various projects, gaining hands-on experience and deeper insights into rural challenges. The initiative also strengthened ties between the institution and local communities, with villagers expressing satisfaction and appreciation for the impactful interventions.

6. **Problems Encountered and Resources Required(150 words)**

While the Unnat Bharat Abhiyan initiative has been successful, it encountered challenges such as:

- **Community Resistance**: Initial reluctance from villagers to adopt new technologies and practices. Awareness campaigns and community meetings were organized to address this issue.
- **Technical Challenges**: Implementing advanced systems like IoT-based Smart Bins required significant technical expertise and resources.

BEST PRACTICE 2:

1. **Title of the Practice: DIGITALIZATION THROUGH INHOUSE SOFTWARE DEVELOPMENT**

2. **Objectives of the Practice(100 words)**

The primary objective of this practice is to establish a comprehensive platform that integrates student feedback management and faculty leave application processes. This CRM system ensures streamlined operations, enhances transparency, and fosters data-driven decision-making across academics and administration. By addressing both student and faculty needs, the system promotes institutional excellence and operational efficiency. Key

objectives include:

- Collecting and analyzing structured feedback from students to improve teaching, curriculum, and infrastructure.
- Simplifying leave application and class alteration management for faculty, ensuring minimal disruption to academic schedules.

- Providing a secure and adaptable system that reduces manual effort and time across processes.

3. The Context(150 words)

The Unified Student and Staff CRM was conceived in the academic year 2023–2024 as an in-house software development. Prior to its implementation, both feedback management and leave application processes were manual, inefficient, and error-prone. Paper-based feedback collection lacked adaptability and discouraged honest student participation due to concerns about anonymity. Similarly, manual leave application and class alteration processes led to delays, miscommunication, and administrative overhead. The CRM system addresses these challenges by digitizing and integrating these critical processes into a single, user-friendly platform.

4. The Practice(400 words)

The Unified Student and Staff CRM operates through two core functionalities:

Structured Feedback Management

This feature streamlines feedback collection and analysis, focusing on two key categories:

Feedback on Teaching-Learning Process

- ✓ Captures insights on teaching quality and learning outcomes.
- ✓ Students provide details such as name, register number, CGPA, department, semester, section, course, and faculty.
- ✓ Dynamic questions managed by admins ensure relevance and flexibility.
- ✓ Faculty performance is evaluated based on parameters like teaching clarity, engagement level, and responsiveness to queries.

Feedback on Curriculum Aspects & Facilities

- ✓ Includes sections for curricular aspects, student support services,

and infrastructure feedback.

- ✓ Assesses curriculum relevance, mentorship programs, library resources, and facility quality.
- ✓ Data validation ensures completeness and accuracy.
- ✓ Feedback reports guide strategic improvements in academics and infrastructure.

Simplified Leave Application for Faculty

This feature digitizes leave management and integrates class alteration functionality to minimize academic disruptions:

Key Functionalities

- **Leave Application Submission:** Faculty submit leave requests with details like name, department, reason, and leave dates.
- **Class Alteration Management:** Faculty propose substitutes and rescheduled timings, with notifications sent for confirmation.
- **Approval Workflow:** Leave requests and alterations are routed to department heads for approval with comments.
- **Leave Status Tracking:** Real-time updates on leave status ensure transparency.
- **Notifications and Alerts:** Automated notifications keep all stakeholders informed at every stage.

This integrated approach enhances collaboration, reduces administrative burden, and ensures seamless coordination among faculty members.

5. Evidence of Success(200 words)

The Unified Student and Staff CRM has demonstrated significant improvements:

- **Feedback Management:**
  - ✓ Over 90% student participation in the first year, compared to less than 50% in the manual system.
  - ✓ Dynamic question management ensures relevance and actionable insights.
  - ✓ Enhanced teaching practices and infrastructure upgrades based on feedback.
- **Leave Application Management:**
  - ✓ Over 85% of faculty leave applications processed digitally within the first

semester.

- ✓ Seamless class alterations reduced disruptions to academic schedules.
- ✓ Substantial time savings for department heads in coordinating substitutions.

Feedback from both students and faculty highlights improved engagement, operational efficiency, and decision-making capabilities.

6. Problems Encountered and Resources Required(150 words)

By integrating student feedback management and faculty leave application processes into a unified CRM, this practice exemplifies a holistic approach to institutional excellence and operational efficiency.

- **Funding Constraints**: Securing adequate financial resources for projects was a constant challenge.

Resources required for the initiative included:

- **Human Resources**: Faculty and student involvement in project design and implementation.
- **Material Resources**: Hardware for solar dryers, IoT components for smart bins, and PVC pipes for water recycling systems.
- **Financial Support**: Funding from government schemes and institutional grants to ensure the sustainability of projects.

By overcoming these challenges, the initiative has set a benchmark for rural development through academic engagement.

Challenges

- ✓ Ensuring consistent student participation and addressing anonymity concerns.
- ✓ Initial resistance from faculty unfamiliar with digital systems.
- ✓ Technical challenges, including scalability and system security.

Resources Required

- ✓ **Technical Resources:** Servers and enhanced database management for hosting the application.
- ✓ **Human Resources:** Developers, administrators, and technical support staff.
- ✓ **Training:** Workshops and user manuals for students and faculty to ensure smooth adoption.