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Pimpri Chinchwad Education Trusts
Pimpri Chinchwad College of Engineering (PCCoE)
(An Autonomous Institute)
Affiliated to Savitribai Phule Pune University (SPPU)
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Report on Institute-Level Experience Sharing Session on Formative Assessments

Date: 06/08/2025

To
The Director,
PCCOE.

Respected Sir,

Subject: Report on Institute-Level Session – *Formative Assessment Best Practices*

We are pleased to submit the report on the Institute-Level Experience Sharing Session organized by the Office of the Dean Academics. Nominations for the session were received from each department through their respective Heads.

With the introduction of 40% weightage for Formative Assessments in the Academic Year 2024–25, this session was strategically conducted at the beginning of Academic Year 2025–26 to facilitate the exchange of best practices adopted across departments during the previous year.

1. Background

To strengthen the quality of teaching-learning and to promote innovative assessment methods, a session on Institute-Level Formative Assessment Best Practices was organized under the Dean Academics Office. This activity was conducted as a part of PCCoE's ongoing commitment to enhance Outcome-Based Education (OBE) and improve the quality of teaching and learning.

The primary aim was to provide a platform for faculty members to share innovative and impactful formative assessment practices that promote active learning and student engagement.

2. Session Details

- **Date & Time:** 2nd July 2025 , 11.30 to 5 P.M
- **Venue:** Seminar Hall, 5th Floor, Mechanical Building
- **Participants:** Faculty from all departments, Academic Coordinators, and HODs
- **Facilitator:** Dean Academics
- **Coordinators:** Dr. SantwanaGudadhe & Ms. SuchitaBorkar

3. Opening Remarks:

Dr.K. Rajeswari Dean Academics and Dr N.B Chopade, Deputy Director inaugurated the session by highlighting the significance of Formative Assessments for continuous improvement of student learning outcomes and emphasized the need for Alignment of formative assessment with Outcome Based Education (OBE) and accreditation requirements

4. Faculty Presentations:

Nominated faculty members from various departments showcased their exemplary formative assessment strategies through 15–20-minute presentations. These sessions included:

- Use of digital tools and platforms for real-time feedback.
- Poster presentations, peer reviews, and activity-based assessments.
- Integration of Bloom's Taxonomy and rubrics in assessment design.
- Techniques to bridge learning gaps using feedback loops.

Presenters and Departments:

Dr. Sandeep Patil	Applied Science & Humanities
Dr.S Mali	Civil Engineering
Dr. Asmita Manna	Computer Engineering
Dr. Sujata Kolhe	Computer (R)
Ms. Sonali Sawant	E&TC
Ms. Sandhya Waghre	Information Technology
Dr.N. Vivekanandan, Dr. Wankhede, Dr. P.R. Kale	Mechanical Engineering
Ms.Pallavi Dhade	Computer Engineering AIML
Ms. Suchita Borkar	MCA

5. Formative Assessment Details are as follows:

i. Mechanical Engineering Department

Presenters: Dr. N. Vivekanandan, Dr. P. R. Kale, Dr. S. R. Wankhede

Course: *Mechanical Systems Design*

Activities:

- **FA1:** Baby Conference – Conceptual design and paper submission
- **FA2:** Design Hackathon – System design based on real engineering challenges

Description:

FA1 allowed students to explore engineering topics through research, conceptual design, and paper writing. FA2 was a **Design Hackathon** that mimicked industry-style project pitching and CAD-based system designs.

Unique Aspects:

- FA1 linked to actual **conference submission** (i-MACE 2025) for real publication exposure.
- FA2 simulated **real-world constraints** and included design schematics, feasibility, and cost analysis.
- Student reflections were collected to capture learning and engagement levels.

Outcome:

Strengthened real-world problem-solving, fostered creativity, and encouraged professional-level documentation and teamwork.

ii. Civil Engineering Department

Presenter: Dr. Sandip T. Mali

Course: PCC: Water and Wastewater Engineering

Activity: FA1: Case Study-Based Poster Presentation • FA2: Design and Demonstration of a Wastewater Treatment Plant for My Locality

FA1: Case Study-Based Poster Presentation**• Description:**

Students analyzed the water demand, source, and quality of their own locality and designed a **custom water treatment plant**, presented via a poster.

• Uniqueness:

Real-location-based problem solving; students acted like water treatment consultants and applied theoretical design concepts to **real-world local issues**.

• Outcome:

Enhanced technical understanding, design thinking, and awareness of sustainable water treatment practices; improved data analysis and presentation skills.

FA2: Design and Demonstration of a Wastewater Treatment Plant**• Description:**

Students worked in teams to **design and demonstrate a wastewater treatment system** (e.g., ASP, wetlands, ZLD) using diagrams or models for their locality.

• Uniqueness:

Hands-on **model-based learning** simulating engineering consultancy work; focus on **eco-friendly, innovative solutions** and real constraints.

• Outcome:

Deepened understanding of waste water processes, improved teamwork, and applied knowledge creatively; fostered practical problem-solving under real-life conditions.

iii. Applied Sciences & Humanities Department (HSMC)

Presenter: Dr. Sandeep H. Patil

Course: *Universal Human Values (UIIV)*

Activity: *SEVA Activity*

Description:

Students participated in selfless service at NGOs and submitted reflections. The SEVA model followed **Kolb's experiential learning cycle**.

Unique Aspects:

- Activity based on **real-life value learning**, not rigid curriculum tasks.
- Reflections focused on **ethical reasoning, empathy, and social consciousness**.

Outcome:

Transformed student perspectives, enhanced social awareness, and encouraged long-term volunteering.

iv. E&TC Department

Presenter: Prof. Sonali Y. Sawant

Course: *Information Theory and Coding (PE-I)*

Activity: *Summary/Abstract Writing*

Description:

Students studied data compression algorithms and generated summaries and abstracts using coding tools like Python (TextBlob, NLTK).

Unique Aspects:

- Integrated **AI tools for NLP and sentiment analysis** in academic writing.
- Bridged technical knowledge with communication skills in research-style documentation.

Outcome:

Improved writing precision, data understanding, and digital literacy through tech-enabled assessments.

v. Information Technology Department

Presenter: Mrs. Sandhya Waghere

Course: *Software Testing and Quality Assurance (BIT6509)*

Activities:

- **FA1:** Control Flow and Data Flow Testing
- **FA2:** MCQs based on ISTQB Certification

Description:

FA1 focused on CFG creation, path testing, and data variable analysis. FA2 used **certification-standard MCQs** from ISTQB to assess foundational and advanced concepts.

Unique Aspects:

- Introduced **white-box testing** with cyclomatic complexity and DU pair analysis.
- FA2 bridged academia with industry by using **globally recognized ISTQB standards**.

Outcome:

Enhanced testing and debugging skills, built awareness of industry certification requirements.

vi. Computer Engineering (Regional Language)

Presenter: Dr. Sujata Rajesh Kolhe

Courses: Computer Graphics, ML, Data Structures

Activities:

- **FA1:** Game development / Research replication
- **FA2:** Virtual Heritage Project & Dataset Replication

FA1: Game Development / Research Replication

- **Description:**
Students either developed a **2D/3D educational game** (for subjects like Computer Graphics) or replicated an existing **research paper** (in Machine Learning or Data Science) including coding and result validation.
- **Uniqueness:**
Offered **dual pathways**—creative (game dev) or analytical (research)—based on student interest. It integrated **tools like GitHub, HackerRank, and real research repositories (e.g., PapersWithCode)**.

- **Outcome:**
Boosted technical creativity, programming, and critical analysis. Some students even prepared papers for possible publication.

FA2: Virtual Heritage Project & Dataset Replication

- **Description:**
Selected students contributed to a **Virtual Heritage Project** for Bhopal State Museum, while others replicated datasets and applied alternate ML models for result comparison.
- **Uniqueness:**
First-time **live collaboration with a real-world museum**, offering students an interdisciplinary experience blending **technology and culture**.
- **Outcome:**
Developed project execution skills, domain-specific insight, and improved adaptability by working with different datasets and technologies.

vii. Computer Engineering

Presenter: Dr. Asmita Manna

Course: *Information Security (Open Elective III)*

Activities:

- *FA1:* Technical Blog Writing
- *FA2:* Decode the Message (Encryption/Decryption/Cryptanalysis)

Description:

Students wrote blog posts contextualizing InfoSec within their engineering domain. In FA2, they engaged in **hands-on encryption** and attempted **open-time cryptanalysis**.

Unique Aspects:

- FA1 used **AI assistance (ChatGPT)** for writing but not research—fostering ethical tech use.
- FA2 mimicked **real attacker-defender dynamics**, promoting strategic thinking.

Outcome:

Interdisciplinary awareness, deeper understanding of cybersecurity mechanisms, and ethical AI use.

viii. Computer Science (AI & ML) Department

Presenter: Prof. Pallavi Nikumbh (Dhade)

Courses:

- *Design and Analysis of Algorithms (DAA)*
- *Information Security (Elective)*

Activities:

- *FA1:* Rolling Cube Problem Solving in Algorithms
- *FA2:* Case Study-Based Poster on Security Incidents

Description:

DAA activity used a cube to randomly assign algorithm problems to groups—promoting surprise-based learning. The Information Security poster required students to dissect real cyberattacks (e.g., ransomware) and present mitigation strategies.

Unique Aspects:

- **Gamified assessment** via rolling cube enhanced excitement and attentiveness.
- Cybersecurity posters simulated **incident response scenarios**.

Outcome:

Promoted peer learning, agile problem solving, and an understanding of cyber threats from a real-world lens.

ix. MCA Department

Presenter: Prof. SuchitaBorkar

Course: *Mathematical Foundation for Computer Application-2*

Activity: *Poster Presentation (Baby Conference Format)*

Description:

Students explored real-life and synthetic datasets (sales, HR, air quality, mental health, etc.) and applied statistical methods such as regression, correlation, time series, and hypothesis testing. They created posters to present their analysis, insights, and visualizations.

Unique Aspects:

- Conducted in **conference format** to simulate a professional data science presentation experience.
- Promoted **Python-based statistical analysis** to integrate programming with math.
- Encouraged **interdisciplinary topics** like mental health, inventory demand, and academic prediction.

Outcome:

Improved data literacy, enhanced communication via poster design, encouraged students to think analytically using real-world data, and Research Paper writing.

6. Key Takeaways:

- Strategies focused on continuous improvement rather than final outcomes.
- Evidence of improved student engagement through regular assessments.
- Faculty collaboration in aligning formative assessments with course outcomes.

7. Outcomes:

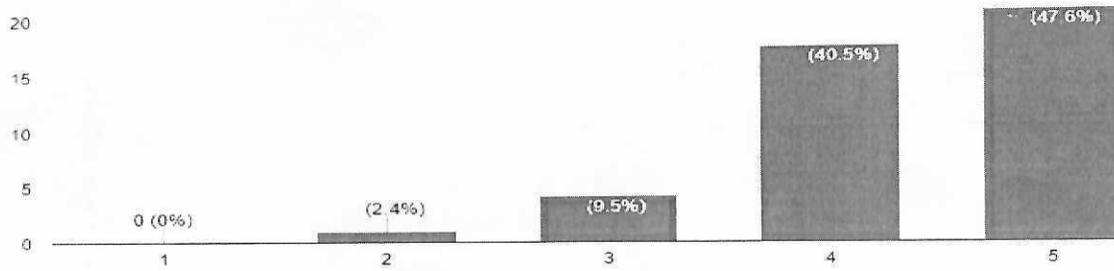
- Shared best practices were well-received and appreciated by attendees.
- Faculty members expressed interest in adopting cross-departmental strategies in their classrooms.
- The session fostered an environment of peer learning and professional growth.

8. Feedback & Attendance:

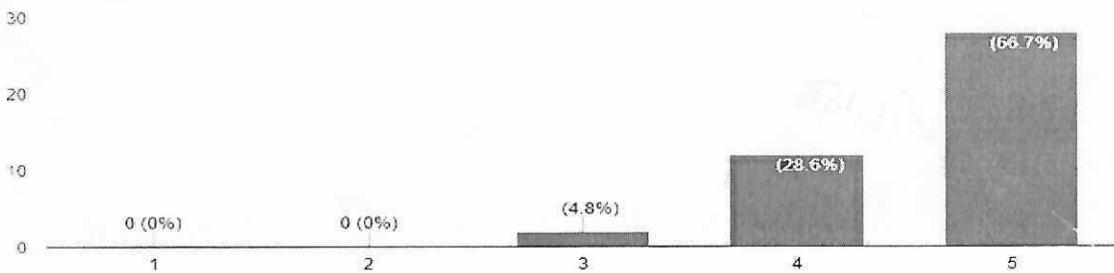
The session was attended by Deans, HoD's, faculty members, and academic coordinators from all departments. Positive feedback was received regarding the relevance and applicability of the presented practices. Suggestions were made to conduct such sessions regularly and maintain a repository of shared practices.

The Experience Sharing Session on Formative Assessments successfully created a collaborative academic space, promoting innovative thinking and effective pedagogical approaches. It reinforced PCCoE's goal of continuous academic excellence and commitment to quality education through OBE. Sample Feedback as follows 5 rating means excellent

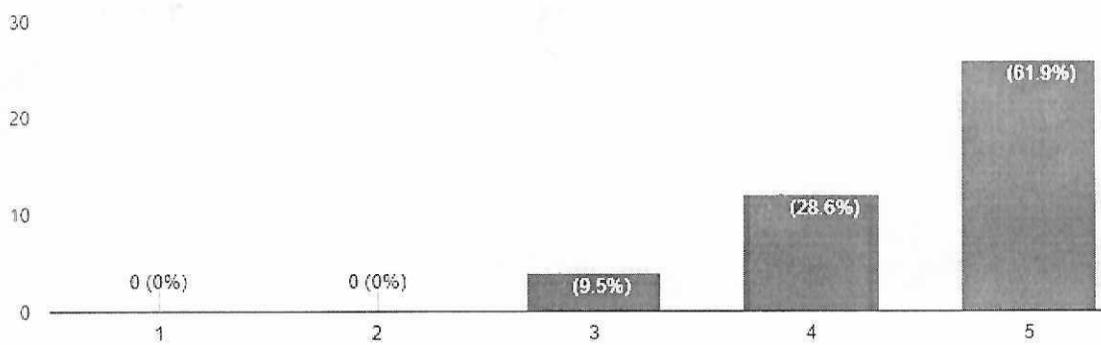
Do you feel more empowered to design and implement effective formative assessments using various tools discussed after attending this session?



How relevant was the content presented to your current teaching practices and the principles of Outcome Based Education (OBE)?



Overall, how would you rate this experience sharing session?



9. Key Discussion Points:

- Importance of formative assessment for continuous improvement of student learning outcomes
- Departmental case studies showcasing successful practices
- Methods to incorporate personalized assessment approaches
- Use of rubrics, peer review, and technology-enabled feedback tools
- Alignment of formative assessment with Outcome Based Education (OBE) and accreditation requirements

10. Next Steps:

Include experience-sharing sessions on summative assessment practices to promote balanced and comprehensive evaluation strategies.

Thanking you.

Report prepared by Ms. Suchita Borkar


Dr K Rajeswari
Dean Academics,
PCCoE.

Submitted to H.M. Director Sir for information




3-8-24

Glimpses of Session:

