

BEST PRACTICES-CSE (AI)

BEST PRACTICE #1: Skill Development Labs

1. Title of the Practice:

Skill Development Labs for Practical Upskilling

2. Context:

In the existing curriculum, several subjects such as Java, Cloud Computing, Computer Vision, and Linear Algebra were offered only as theory based courses. However, students lacked hands-on exposure to tools, programming, and real-time problem solving. To bridge this gap between theoretical knowledge and industry-relevant practical skills, exclusive skill development labs were introduced alongside the corresponding theory courses.

3. Objectives of the Practice:

- To enhance students practical skills and make them industry-ready.
- To complement theoretical learning with hands-on experience using modern tools and platforms.
- To increase student engagement and project readiness through real-world applications.

4. The Practice:

Skill development labs were introduced alongside the corresponding theory courses, where the labs were scheduled in the regular timetable, faculty were allocated, and each lab was conducted once every week throughout the semester.

Examples include:

•**Computer Vision Lab:** Conducted weekly for 5th Sem students studying Computer Vision theory. Students worked on OpenCV, image processing, and basic deep learning implementations.

•**Java Lab:** Introduced in the 3rd semester to support Java Programming theory. It focused on hands-on object-oriented coding, problem solving, and Java-based application development.

•**Cloud Computing Lab:** Designed to support the Cloud Computing theory course for 6th Sem Students. Students used AWS, created virtual machines, and deployed sample cloud applications.

•**Mathematics for Machine Learning Lab:** Conducted in the **4th** semester alongside the Linear Algebra course. Students used Python libraries such as NumPy and Matplotlib to practically explore vector operations, matrix algebra, and machine learning concepts like gradient descent.

5. Evidence of Success / Impact:

- Increased student interest and engagement in subjects that were previously perceived as abstract.
- Significant improvement in student projects related to this.
- Stronger technical portfolios as students gained experience in relevant tools and platforms.
- Positive feedback from students.

6. Challenges and Solutions:

- **Challenge:** Limited infrastructure and lab slots.

An exclusive lab should be made available to the department.

BEST PRACTICE #2: In-house Placement Preparation Training

1. Title of the Practice:

In-house Placement Preparation Program from First Year.

2. Context:

With increasing competition in campus placements, it became evident that students needed early, structured exposure to the types of assessments and interviews conducted by recruiters. Most institutions begin placement training in the final year, but to ensure our students are truly prepared, the Department of CSE (AI) at MIT Mysore initiated a proactive, semester wise, in-house placement training program starting from the first year.

3. Objectives of the Practice:

- To develop student readiness for campus placements starting from the first year.
- To provide regular training on technical, aptitude, reasoning, communication, and HR rounds.
- To build confidence and reduce placement anxiety through mock interviews and problem solving sessions.

4. The Practice:

The department launched a structured placement preparation curriculum aligned with actual industry recruitment rounds. Activities are being conducted every semester and categorized into major components:

- *Aptitude Rounds*: Covering number series, quantitative aptitude, and reasoning ability through regular worksheets and quizzes.
- *Technical Coding Rounds*: Practice sessions for C, Java, DSA, and logic building using company-specific problems.
- *HR Interview Rounds*: Reflection based assignments and practice for commonly asked HR questions to build confidence and articulation.
- *Group Discussions (GDs)*: Conducted in teams with peer and faculty observers to enhance articulation, listening, and leadership skills.
- *Self-Exploration Activities*: Encouraged students to research and align with industry needs early on, helping them identify gaps and strengths.

Sessions were conducted regularly, and faculty members were assigned to mentor and evaluate students.

5. Evidence of Success / Impact:

- Higher participation in external coding competitions and hackathons.
- Students gained clarity on career paths, with many pursuing certifications and internships.

6. Challenges and Solutions:

- Challenge: Initial lack of seriousness among students in lower semesters.

Solution: Made participation mandatory with mentor follow-ups.

- Challenge: Faculty workload and session planning.

Solution: Rotation of faculty and student-led mock sessions reduced pressure and increased involvement.

BEST PRACTICE #3: Uploading Student Projects on GitHub

1. Title of the Practice:

Student projects Uploaded on GitHub

2. Context:

Many students complete academic projects with significant effort and innovation, but these remain confined to personal devices or reports. In today's job market, recruiters value candidates with a visible portfolio showcasing practical skills and contributions to open source or real world projects. To bridge this visibility gap and promote professional presentation of student work, the department introduced a practice of mandating students to maintain a GitHub profile and upload all major project work from the 2nd year onwards. The department initiated GitHub training and integration for student projects across semesters.

3. Objectives of the Practice:

- To build a visible, online project portfolio for every student.
- To train students in using version control and collaborative development tools.
- To increase the credibility of student projects during placements and internships.
- To foster a culture of sharing, collaboration, and documentation in software development.

4. The Practice:

- The department initiated GitHub training and integration for student projects across semesters:
- Students are introduced to GitHub usage through workshops and lab integration from the 2nd year.
- Proper documentation is enforced, including README files, screenshots, usage instructions, and live demo links (if applicable).
- Peer reviews and internal evaluations include the GitHub link as a mandatory component.

GitHub profiles are included in student resumes, and recruiters are informed of this initiative during placement drives.

5. Evidence of Success / Impact:

- Majority of the students now have fully maintained GitHub profiles with projects that reflect their technical competencies.
- Students have improved their documentation, version control, and software engineering practices.
- Some students received internship offers based on their GitHub projects alone.

6. Challenges and Solutions (if any):

Challenge: Inconsistent quality of uploads.

Solution: Faculty review mechanisms and use of checklists to ensure minimum standards for project upload and presentation.

BEST PRACTICE #4: Contribution and Collaboration on Open-Source Platforms

1. Title of the Practice:

Contributing and Collaborating on Open-Source Projects and Global Platforms

2. Context:

In the evolving tech landscape, companies increasingly value candidates who engage with open-source communities and contribute to real-world projects beyond classroom assignments. Recognizing this shift, the department encouraged students to actively participate in open-source development and global collaborations. This practice aligns students with industry expectations and fosters a deeper understanding of collaborative, production-level coding.

3. Objectives of the Practice:

- To expose students to real world software development practices through open-source contributions.
- To build student portfolios that reflect global industry readiness and initiative.
- To build connections with international teams, startups, and organizations.

4. The Practice:

Students were mentored to identify and contribute to meaningful open source platforms and startup led product development.

Key examples include:

- *Contribution:* A student from the department contributed to ReadyTensor, a US-based MNC platform that supports ML workflows. Contributions involved working with code modules, suggesting enhancements, and resolving open issues, showcasing both coding skills and problem-solving initiative.
- *Collaboration:* The department also facilitated a collaboration opportunity with QualBizz LLP Inc, a startup based in the US. In this case, a student was involved in building early-stage modules and dashboards for the company's product suite. The student participated in remote team interactions, project planning, and contributed to iterative product development.

These efforts were supported through faculty mentoring, technical reviews, and flexible academic support that allowed students to work in sync with international timelines and agile environments.

5. Evidence of Success / Impact:

- One student received a Letter of Recommendation and long-term mentorship from the core development team of ReadyTensor.

- Another student involved with QualBizz LLP continues to contribute as a part-time remote developer while continuing studies.
- Students gained real-world exposure by working in live repositories, using tools like GitHub, Jira, and Slack in a professional setting.
- These contributions added credibility to student resumes and LinkedIn profiles, boosting visibility and confidence during interviews.

BEST PRACTICE #5: Student-Led AI Club Committees for Holistic Development

1. Title of the Practice:

Student-Driven AI Club Committees for Technical, Creative, and Social Growth.

2.Context:

To go beyond academics and develop leadership, creativity, and wellness, the Department of CSE (AI) established a structured AI Club with specialized student-led committees. This initiative promotes a holistic, engaging, and self-driven culture aligned with the department's vision of nurturing well-rounded individuals.

3. Objectives of the Practice:

- To empower students through leadership roles and team coordination.
- To encourage participation in diverse technical and non-technical domains.
- To integrate personal development with academic and industry readiness.

4. The Practice:

The AI Club is structured into nine focused committees, each addressing a distinct aspect of student development:

- *Technology Division*: Organizes Tech Talks, podcasts, and innovation showcases.
- *CodeCatalyst*: Hosts coding contests, workshops, and hackathons.
- *Focus & Flow (Mental Well-being)*: Conducts wellness workshops and focus sessions.
- *Expressions*: Promotes music, art, drama, and literary discussions via the Books Club.
- *Social Service & Outreach*: Leads community service and awareness initiatives.
- *Newsletter & Magazine*: Publishes student articles and event documentation.
- *Creative Media*: Manages digital photography, video content, and design.
- *Social Media*: Handles departmental visibility through digital platforms.
- *Sports & Fitness Squad*: Encourages physical fitness through sports and wellness events.

5. Evidence of Success / Impact:

- High student participation and ownership in event planning and execution.
- Stronger communication, teamwork, and leadership among students.
- Improved departmental visibility and a vibrant, inclusive student culture.

BEST PRACTICE #6: Peer Learning Ecosystem Led by Senior Students

1. Title of the Practice:

Student Led Peer Learning Ecosystem for Upskilling Juniors

2. Context:

Recognizing the value of near peer mentorship and student-to-student learning, the department initiated a structured ecosystem where senior students guide juniors through hands on workshops and knowledge-sharing sessions. This bridges academic gaps, builds leadership, and creates a collaborative learning environment.

3. Objectives of the Practice:

- To build a culture of collaborative and self-driven learning among students.
- To enhance juniors skills through relatable, peer led workshops.
- To empower seniors with teaching, mentoring, and presentation skills.

4. The Practice:

Senior students from the AI Clubs Technology Division plan and conduct focused workshops and demos every semester for juniors. Notable sessions include:

- *AI Tools Workshop*: Hands-on demo covering tools for research, coding, chatbots, public speaking, and Excel hacks, organized for 2nd-year students.
- *Public Speaking & Innovation Series (April 2025)*: Included “Own the Stage” (Public Speaking), “From Tools to Triumph” (AI Innovation), and “AI Agents: Concepts & Evolution.”

Workshops are curated and coordinated entirely by students, under faculty mentorship. They feature live demos, toolkits, and real-world applications to maximize learning impact.

5. Evidence of Success / Impact:

- Increased engagement and confidence among 2nd-year students in technical and soft skill domains.
- Peer instructors gained mentoring and communication skills highly valued in the industry.
- Students showcased workshop outcomes in projects, internships, and club competitions.