Best Practices - I

1. Title of the Practice: Holistic Approach to Support Students from the rural background

2. Objectives of the Practice: Objectives/Outcomes: In this best practice we are Implementing:

1. Installment Scheme
2. Earn & learn
3. Entrepreneurship/Start-up
4. NPTEL

- To implement a holistic approach for development of the students coming from rural background.
- To train the respective coordinators for implementation of various aspects of holistic approach.
- To perform periodic review about implementation and improvement of the processes in the holistic development of students.
- Enabling students to obtain certificates to make students employable in the industry or pursue a higher education program.
- To encourage faculty to learn to design value added courses on the lines of these courses.
- To impart life skills, develop the personality and communication skills

3.The Context: As our institute is located in rural area, our aim is to build a society which is free from discrimination and deprivation by providing the holistic support to the students belonging to rural background. In order to nurture youth with skills, our institute provides schemes like 'Earn and Learn', Installment, Entrepreneurship/Start-up, NPTEL etc. In addition to this, our institute helps them to enhance their academic performance through additional classes, making them employable, motivating for entrepreneurship. NPTEL offers free open online courses along with certification in various engineering disciplines.

4. The Practices: Apart from curriculum, our institute had derived an approach of holistic development of students by supporting them in various circumstances like Installment Scheme, Earn & Learn, Entrepreneurship / Start-up, NPTEL. The brief write-up about various activities related to these aspects has been given below:

- **Installment Scheme:** Our aim is to make technical education available to every door of a deserving student present in every village around us. Approximately, 90% of our students belong to rural area and small villages. Due to which their families are financially weak. Hence according to our vision we provide education in affordable facilities to such students. We provide the facility of "Zero interest Fees Installments" in which any student belonging to any cast / category can pay his respective fees in 4 zero interest installments.

- **Earn and Learn:** There are many families around, who don't have any income source. But still they are willing to get higher education. Earn and learn scheme is the best way to manage their fees and work without any obstacle. We allow such students to work as an employee in our college and also to attend their academic lectures and practices. Under this scheme, students are directed to fill the necessary application form, which is further scrutinized by respective committee. The enrolled students are given such types of work that increase their skills in areas of their study, office work, technical work and field work. However when the distribution of work is given, all students get equal opportunity.
- **Policies :**
  1. Economically poor and weaker candidate are included in scheme
  2. To provide educational opportunities to the poor and needy students at nominal cost.
  3. To help girl from deprived backgrounds to get education

- **EARN & LEARN SCHEME DETAILS**

Duration	Name of Student under this scheme
2017 - 2020	Mr. M. S. Kasrelar
2019 - 2022	Ms. P. G. Shinde

- **Entrepreneurship / Start-up:** Our College is motivating students to get a platform and startup for their respective business and Entrepreneurship. To enhance our students knowledge and be success full in the outside world, we provoke students to make them available the respective opportunities and grab those opportunities which leads them to become an independent, successful Entrepreneur. Our faculty engages their best effort for these students and make sure that they don't face any obstacle between there Entrepreneurship.

- The workshop conducted for Entrepreneurship are as follows:

Sr. No.	Academic Year	Name of Faculty / Student	Topic of workshop
1	2019 – 20	Mr. Akash V. Rumade	Startup 101
2	2020 – 21	Mr. Pankaj R. Kunekar	Innovation and Design Thinking

- **NPTEL:** SPOC attends NPTEL workshops, visits IIT and learn process and job responsibilities. SPOC requests HOD's to appoint faculty as NOC coordinator from each department. Meeting of NOC coordinators, SPOC inform about new courses. G.M.V.I.T had setup NPTEL Local Chapter on [illegible] January 2019 with an objective to enable the faculty and students to obtain certificates through enhanced technological learning.

Asst. Prof. P. R. Kunekar, Assistant Professor, Department of Computer Engineering started the Local chapter and participated in the SPOC Workshop. The faculty members and students were briefed about the NPTEL courses and motivated to enroll for the courses. The faculty members had the choice to select the course of their own interest, either related to their

course or in new domain. Many students & faculty members enrolled in various courses pertaining to Engineering, Technology, Science, Management, Humanities and inter-disciplinary.

5. Evidence of Success:

1. **Installment Scheme:** Many students got admitted in our institute and have taken the benefits of this scheme. Now they are independent and successful in their respective carriers.

Computer Engineering:

Sr. No.	Academic year	No. of students paid their fees in installments.
1	2021 - 2022	117
2	2020 – 2021	80
3	2019 – 2020	39
4	2018 – 2019	28
5	2017 - 2018	15

Mechanical Engineering:

Sr. No.	Academic year	No. of students paid their fees in installments.
1	2021 - 2022	141
2	2020 – 2021	115
3	2019 – 2020	118
4	2018 – 2019	124
5	2017 - 2018	100

Electronics and Telecommunication engineering:

Sr. No.	Academic year	No. of students paid their fees in installments.
1	2020 – 2021	5
2	2019 – 2020	15
3	2018 – 2019	24
4	2017 - 2018	30

Civil Engineering:

Sr. No.	Academic year	No. of students paid their fees in installments.
1	2021 - 2022	126
2	2020 – 2021	124
3	2019 – 2020	83

4	2018 – 2019	90
5	2017 - 2018	50

2. **Earn and Learn:** Students who are working as an employee as well as completing their academics are as follows:

Academic Year	No. of Students Participated	Name of Student under this scheme
2017-18	1	Mr. M. S. Kasrelar
2018-19	1	Mr. M. S. Kasrelar
2019-20	2	Ms. P. G. Shinde Mr. M. S. Kasrelar
2020-21	1	Ms. P. G. Shinde
2021-22	1	Ms. P. G. Shinde

3. **Entrepreneurship / Start-up:** Following are the students who have successfully settled up their respective businesses under the guidance of our faculties.

Sr.No.	Name of Student	Branch	Academic Year	Startup Details (Startup Name, Registration Date)
1.	Akash Vikas Rumade	Civil	Passout	Vikas Educomp Institute,Coaching Classes,Roha
2.	Reena Pawar Mahale	Computer	BE	GRUHLAXMI FOOD PRODUCTS (Prop., RINA VISHWAS PAWAR)
3	Arman vaskar	Computer	TE	Domestic Products
4	Swapnil Polekar	Computer	Passout	Internet Service Provider
5	Mahesh Patil	Mechanical	Passout	Internet Service Provider

4. **(NPTEL):** Many of the students and faculties have successfully enrolled and completed course with certification. Some students and faculties got ELITE and GOLD certificate in courses. NPTEL courses improve students and faculties knowledge.

Sr.No.	Course Name	Student/ Faculty Name	Department	Year	Certificate Type
1	Programming, Data Structures & Algorithm using python	Rashmi Subhash Mhaske	Computer Engineering	2019	Successfully completed
2	Programming, Data Structures & Algorithm using python	Roshani Ramesh Pawar	Computer Engineering	2019	Successfully completed
3	Programming, Data Structures & Algorithm using python	Archit Dattaram Koli	Computer Engineering	2019	Elite
4	FDP -Joy of Computing Using Python	Asst.Prof. K.R.Metha	Computer Engineering	2019	Elite+Silver
5	Joy of Computing Using Python	Hemangi Mukund Manduskar	Computer Engineering	2019	Elite
6	Joy of Computing Using Python	Patil Shruti Suryakant	Computer Engineering	2019	Elite
7	Joy of Computing Using Python	Kamble Sneha Shahaji	Computer Engineering	2019	Elite
8	Joy of Computing Using Python	Chavan Priyanka Suryakant	Computer Engineering	2019	Elite+Silver
9	Joy of Computing Using Python	Ritesh Rajesh Gandhi	Computer Engineering	2019	Elite
10	Joy of Computing Using Python	Anuja Manoj Yelve	Computer Engineering	2019	Elite
11	Joy of Computing Using Python	Pratik Suresh Suryawanshi	Computer Engineering	2019	Elite+Silver
12	Machine LearningFor Engg & science Application	Mubashir Manzer Chandle	Computer Engineering	2019	Successfully completed

6. Problems encountered and Resources Required:

- **Installment scheme:** There is not a major issue encountered while executing this scheme. Hence no resources were required.

- **Earn and Learn:** It is difficult to follow the flexible academics time table for students enrolled for Earn and Learn scheme because, while working the lecture attendance is not possible and vice versa.

- **Entrepreneurship / Start-up:** Few students are not willing to register for the session due financial issues. Initially, more efforts are required to aware students about Entrepreneurship Development Programs and its advantages to become a good entrepreneur/self-employed.

    - **Resources Required:** Quality resource persons from the Industry and DIC (Digital Incubation Center) to motivate the students.

- **NPTEL:** Exam centers for Students are in Mumbai or Pune so there is a problem of reaching to exam centers on time.

    - **Resources Required:** High Speed internet is required all the time.

G.M. Vedak Institute of Technology

Best Practices - II

1. Title of the Practice: Project Based Learning (PBL)

2. Objective of the Practice

The objective of Project Based Learning (PBL) is to enable the students to apply the concepts and theories they have learnt in the previous semesters and in the on-going semester. Developing projects that incorporate the learning from various courses makes the students understand inter-connectedness of the courses. A project environment group work, cordiality and minimally even collective bargaining. GMVIT - TALA has found PBL, a subtle way of introducing in the young students desirable social behaviour that would help them in their professional lives. PBL has the potential to enhance employability and productivity and prepare them for the world of work.

3. The Context

The Engineering curriculum in most Indian Universities includes six months to twelve months of project work. The students may opt to carry out the project in the Industry, R&D institutions, etc. However, due to the poor preparation, many students are not able to take advantage of this opportunity. This affects placement and employability and becomes an institutional challenge. Hence, it was decided to introduce PBL in GMVIT - TALA. This has been a great turning point and the enthusiasm for students. PBL was started as a pilot in the computer engineering department and has now become an institution wide practice in each semester.

4. The Practice

PBL has become integral part of all programs at GMVIT - TALA and is included in the academic calendar. This method adopted is practical and implementable. It has evolved in such a way that students have published their work in conferences, participated at approved national competitions like International and National Conferences etc. Testimonials of each program are available in department. Students perform literature review, design calculations and develop complete solution of the given problem.

Why Use PBL?

- Puts students in a position to use the knowledge that they get.
- Effective in helping students understand, apply, and retain the information.
- Can be more effective than traditional instruction and increase academic achievement.
- Benefits include building skills such as critical thinking, communication, and collaboration.

- Students who work on projects show increased motivation and engagement in their studies.
- Can give students an opportunity to work with professional experts who enrich and support the teacher's knowledge and how it connects to the real world

4. The Practice:

Students are instructed to follow the hierarchy of the mentioned project and do the precise implementation of the project as instructed by the project guide (come up with at least three ideas, write or draw all the ideas, can be as weird as possible – don't get too critical at this stage), select the best design (most promising one) based on various parameters. Prepare a detailed flowchart and UML (Unified Modelling Language) diagrams that includes the actual working and implementation of the project which leads to a precise module done by student.
Students are advised to take time to make code modifications - focus on improving the efficiency of the software, include any additional material beneficial for the project. On the basis of the execution of the projects, students are instructed by guide to publish the IEEE format paper on various national / International Conferences. As our college is located at a rural area, our students research projects are more beneficial for the neighbouring villages and society.

5. Evidence of Success:

The experience of GMVIT - TALA with PBL as a teaching learning process has been very positive. PBL engages the students. The survey conducted by GMVIT - TALA of the students and the guides show that it is an effective and enjoyable way to learn - and develop deeper learning competencies required for success in college and career. Activities like projects engage the hearts and minds. It provide relevance for learning. A project improves learning and by completing a project, students understand content better; remember what they learn and retain it longer than with traditional teaching. Hence, students who gain content knowledge along with PBL are better equipped to apply what they know in new situations. PBL type of environment can inculcate many of these attributes in young students and the PBL in each semester gives adequate time for students to motivate them.

6. Problems Encountered and Resources Required

Prior learning experiences and theoretical understanding of the curriculum do not prepare students well for PBL. Many times, students who are not very academically inclined or proficient seem to pick up PBL very fast and work productively and their attitude and approach to learning

changes. Some students need more time to immerse themselves into PBL. Differences of opinion and personal conflicts, though naturally expected, the feedback of the guides indicate that the prevalence of these traits was nil or negligible. There are no adequate resources through which students can perform and work for project without any restrictions, as our college location is in the remote area and the way to provide resources for the fluent execution of projects are limited. There was hardly any resistance or lack of enthusiasm among the students. PBL affects other academic activities and therefore, the students and the guides must work extended hours and even on holidays.

Resources Required:

- Incubation Centre
- Research laboratories
- Uninterrupted Internet connectivity
- High End Desktop Computers in Labs
- Flexible Academic Timetable
- High end Tools and Machineries