

INNOVATIONS IN TEACHING AND LEARNING

Subject: Microcontrollers Class: S.Y. BTech E&TC

Topic: Interfacing program of Key matrix with PIC18 Controller

NAME OF THE ACTIVITY: Flip Class Room Activity

I. Concept: The flipped classroom model reverses the traditional teaching approach by delivering instructional content, such as lectures, through digital media outside of the classroom. Class time is then used for interactive activities, discussions, and application of knowledge.

II. Objective(Goal):

- To encourage self-paced learning through pre-class video lectures.
- To enhance conceptual understanding through in-class interaction.
- To promote active participation and collaborative learning.
- To improve students' confidence and problem-solving abilities through peer discussions.

III. Appropriateness (Relevance of Selected Method) This method enables active learning, encourages critical thinking, and helps students apply theoretical knowledge to practical applications.

IV. Effective Presentation (Implementation Details):

1. A. Preparation:

A YouTube video explaining the Interfacing Program of Key Matrix with PIC18 Controller was shared with the students one day before the scheduled class.

Video Link: https://youtu.be/hdwFdYCMg8A?si=GqXf_fxU3IGHpKrx

2. B. Implementation Process:

- Students were instructed to watch the video lecture prior to the class.
- During the class, the teacher initiated a discussion by asking questions based on the video content.
- Selected students were invited to explain the concepts on the blackboard, such as key matrix scanning, port configuration, and logic implementation in the PIC18 controller.
- Wherever students faced difficulties, the teacher provided guidance and clarifications to strengthen their conceptual understanding.

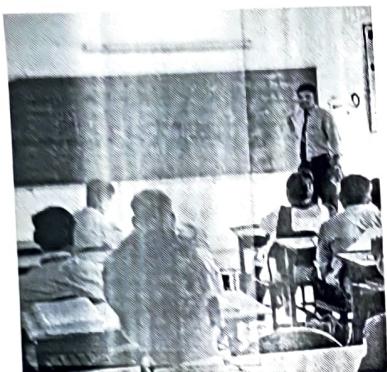


Fig1. Student explaining the topic

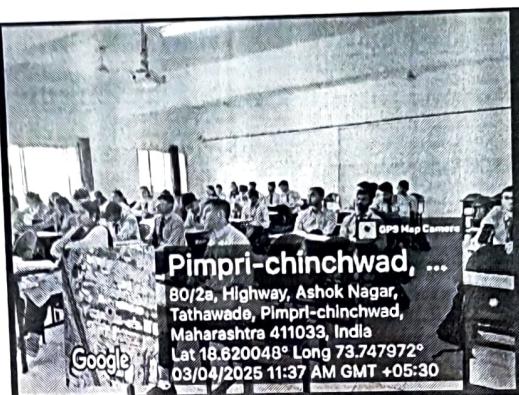


Fig 2: Student along with Faculty Listening

V. Results (Impact):

- A. This activity inculcates the habit of self learning among students.
- B. Encouraged students to participate in activity.
- C. In depth understanding of a topic.
- D. Stage daring, presentation skills enhancement.

VI. Reproducibility and Reusability by Other Scholars for Further Development

Sr.No	Innovation Used by	Details of User	Purpose of Reproducibility and Reusability
	Dr. PM Gihate	8Y. Btech Entc RGCoe	To encourage self paced learning enhance conceptual learning.

VII. PEER REVIEW AND CRITIQUE

Category: Internal/External/Interdepartmental

Score: (1:Least 2: Moderate 3:Highly)

Question 1. Is this Innovative Teaching and Learning Methodology useful during content delivery?

Question 2. Did this innovation increase student motivation or participation?

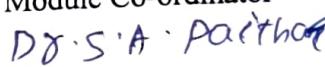
Question 3. Will it show improvement in student learning?

Question 4. Suggestions for improvement in future iterations.

Category	Name of Peer	Organization	Q.1	Q.2	Q.3	Q. 4 Suggestion/Critique
Internal	Dr. PM Gihate	RGCoe	2	3	2	Use quizzes or poll to make sessions more engaging.
External	Dr. Chaya Jadhav	DYP Pimpri	2	3	2	Encourage group collaboration during Flipped activities

Inter- DEPT	MS. Shweta R. Desai	RSCOE	2	3	2	Introduce a Peer-Feedback component where students provide constructive criticism on their classmates' explanations.


Course Co-ordinator
Prof. S. P. Pattanaik

Module Co-ordinator


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HOD E&TC
Dr. S.C. Wagaj:

