JSPM's

Rajarshi Shahu College of Engineering, Pune

Department of Electronics & Telecommunication Engineering

INNOVATIONS IN TEACHING AND LEARNING

Subject: Advanced Data Structures & Algorithms

Class: S.Y. BTech E&TC

Topic: C++ Fundamentals: Array

NAME OF THE ACTIVITY: Flipped Classroom

I. Concept:

The flipped classroom approach was adopted to enhance student engagement and active learning. In this method, students were provided with pre-class learning material such as short video lectures, notes, and reference problems on **C++ array concepts**. Classroom time was then utilized for hands-on coding, problem-solving, and discussion of real-time applications of arrays.

II. Objective (Goal):

a. To enable students to understand the concept, declaration, and implementation of arrays in C++.

b. To encourage students to learn basic operations like traversal, insertion, and deletion through self-study.

c. To develop problem-solving and logical thinking skills through in-class coding activities.

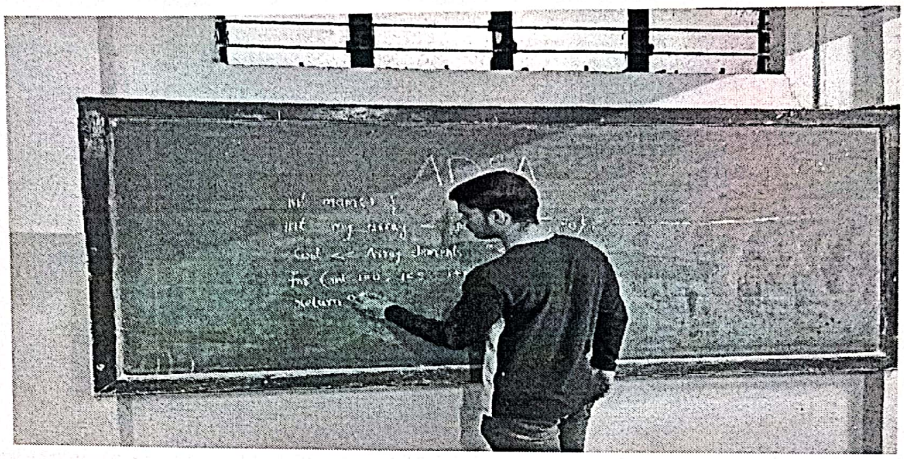
d. To promote learner autonomy and collaborative learning.

III. Appropriateness (Relevance of Selected Method):

The flipped classroom method is highly appropriate for topics like C++ Arrays, as it allows students to grasp the theoretical part (syntax and structure) at their own pace and focus classroom time on applying knowledge through coding practice.

IV. Effective Presentation (Implementation Details):

Students were given materials and reference notes on array concepts prior to the class. During the classroom session, short coding exercises were assigned to demonstrate operations like initialization, element access, and array manipulation. Students worked individually and in pairs to solve problems under faculty guidance. Interactive discussions and error-correction sessions ensured clarity of concepts.



V. Results (Impact):

The activity led to improved conceptual clarity and confidence in writing and debugging C++ programs involving arrays. Students actively participated in the in-class exercises and demonstrated programming knowledge. The flipped classroom approach promoted independent learning, critical thinking, and improved overall engagement in the learning process.

VI. Reproducibility and Reusability by Other Scholars for Further Development

Sr.No	Innovation Used by	Details of User	Purpose of Reproducibility and Reusability
1.	Mrs. D. Y. Chhatrikar.	RSCOE	Used in other class of SY E&TC

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
1.	Mrs. D.Y. Chhatrikar	RSCOE	3	3	3	Use groups to promote peer learning & active participation.
2.	Mrs. M. Rajput	DYPCOE	3	3	3	Ensure in-class time is used for problem-solving & discussion, not repetition. M Rajput

Course Co-ordinator
Mrs.S.S.Godage

Module Co-ordinator
Mrs.S.P.Vibhute

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