

JSPM's

Rajarshi Shahu College of Engineering, Pune

Department of Electronics & Telecommunication Engineering

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## INNOVATIONS IN TEACHING AND LEARNING

**Subject:** Signals & Systems, Electronic Devices & circuits, EVS, UHV,  
Microcontrollers etc

**Class:** S.Y. BTech E&TC

### **NAME OF THE ACTIVITY: Tech Climb** (Technical Snake and Ladder)

I. **Concept:** Tech Climb is an innovative twist on the classic Snake and Ladder game, incorporating technical knowledge and problem-solving skills into the game play. Participants progress through the board by answering technical questions and completing challenges.

#### II. **Objective (Goal):**

- Reinforce conceptual understanding in a fun, gamified manner.
- Promote collaborative learning and peer discussion.
- Encourage active participation and critical thinking.
- Provide formative assessment of students' knowledge in a non-threatening environment.

#### III. **Appropriateness (Relevance of Selected Method):**

The Snake and Ladder game-based method is relevant because:

- **Gamification** increases motivation and engagement, especially for complex or theory-heavy topics.
- It introduces **element of chance and challenge**, making the learning experience dynamic and memorable.
- Students progress based on correct answers, fostering **application-based learning**.
- It supports **active learning** strategies, shifting from passive listening to active involvement.
- It can be adapted to suit different levels of difficulty, making it versatile across subjects and student proficiency levels.
- Facilitates **experiential learning**, where students learn by doing, rather than just observing.

#### IV. **Effective Presentation (Implementation Details):**

The game is basically a snake and ladder in which one student from the every group should walk on the snake and ladder board and other two members should help him/her giving the answer of the



question. Generally the questions are on the second year syllabus and all are multiple choice questions. When question is displayed on the screen, the team should give answer within 30 seconds. If answer is correct then they get chance to roll on the dice and proceed to the next path, if answer gets wrong they stayed in the same position without any proceeding.

The team which will reach first at last block will be winner. But on their path of journey there are snakes and ladders which creates the fun to the game.

Initially two rounds of 4 teams and 3 teams respectively are conducted. From them 3 finalists are shortlisted and the final round took place on the Saturday 29<sup>th</sup> March 2025 to finalize the winners and runner ups.



Fig.1 Learn with Fun through gamification



Activity is made available on YouTube

**Video:-** Innovations in Teaching and Learning\_Tech Climb (Technical Snake and Ladder)

**YouTube Link :-** <https://youtube.com/shorts/76ucFiHWvBg?feature=share>

#### V. Results (Impact):

- A. This activity inculcates the habit of self learning among students.
- B. Encouraged students to involve in activity since the tool is interactive..
- C. Understanding of concepts through practical approach.

#### VI. Reproducibility and Reusability by Other Scholars for Further Development

Sr.No	Innovation Used by	Details of User	Purpose of Reproducibility and Reusability
1	Other Faculty for Teaching Field		The activity is made available on YouTube for reference.

#### VII. PEER REVIEW AND CRITIQUE

**NAME OF THE ACTIVITY: Tech Climb** (Technical Snake and Ladder)

**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	J.M. Tipale	R.S.C.O.E E&TC	3	3	3	This event can be done on each unit as a smart learner improvement
External	Dr. B.S. Gayal	AMD Sindhya School of Engg.	3	3	2	The semified approach promotes critical thinking & engagement
Interdepartment		Electrical Department	2	3	2	collaborate with other departments to create cross domain version.
	Dr. S.L. Charan					

  
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 Module Co-ordinator  
 Dr. Rane Charushila Vijay

  
 HOD E&TC  
 Dr. S.C. Wagaj