



Department of Instrumentation and Control

Innovative Teaching-Learning Method

Class:	SE Instrumentation & Control
Subject:	Linear Integrated Circuits
Name of ITL Method:	Peer Teaching (Jigsaw Method)
Name of the Faculty:	Dr. Y. P. Patil
Date:	08/11/2024, and 09/11/2024
No. of Students Participated	34
PO/PSO Mapped	PO1(2), PO2(1), PO9(1), PO10(1), PO12(1), PSO1(2), PSO3(1)
Learning Objective: <ol style="list-style-type: none">1. Able to improve student understanding of complex concepts through active learning,2. Able to enhance communication skills,3. Able to increase confidence for both the teacher and learner,4. To have deeper subject matter comprehension by explaining concepts to others,5. Fostering collaboration and teamwork6. Potentially leading to higher academic achievement for all students involved.	
Outcomes: On completion, students will able to <ul style="list-style-type: none">• Deeper learning: Students are forced to process information more thoroughly by actively teaching others, leading to a better grasp of complex engineering concepts.• Improved communication skills: Explaining technical ideas to peers helps students develop clear and concise communication abilities crucial for collaboration and professional practice.• Confidence building: Taking on the role of a teacher can boost a student's self-esteem and confidence in their understanding of the subject matter.• Active learning environment: Peer teaching encourages active participation in the learning process, moving beyond passive listening to actively engaging with the material.• Collaborative learning: Working together in peer groups promotes teamwork and the ability to share ideas and perspectives.• Personalized learning: Peer teaching allows for tailored explanations based on individual needs, potentially addressing learning gaps more effectively.• Feedback mechanism: Students can receive immediate feedback from peers, helping them identify areas for improvement and adjust their understanding• Increased engagement: The interactive nature of peer teaching can enhance student motivation and engagement in the learning process• Application of knowledge: By explaining concepts to others, students are forced to apply their knowledge to real-world scenarios, solidifying their understanding	

Description :

The best teachers do more than just read from a textbook. They understand that there are many different techniques, theories, and teaching models that can give students a well-rounded education that's foundational to a lifetime of success and continual improvement.

Effective learning happens in many ways. Some students learn well directly from a teacher. Others are skilled independent learners. Yet, one of the most effective active learning techniques is that of peer learning. Put simply, peer learning is when students teach each other. This type of learning aids retention and encourages communication and collaboration.

What Is Peer Learning?

Peer learning is an education method that helps students solidify their knowledge by teaching each other. One student tutoring another in a supervised environment can result in better learning and retention. Why? Because to teach another, one must first fully understand a concept themselves. Verbalizing a concept and sharing the information with a peer serves to reinforce the knowledge gained.

Peer Learning Models

Effective peer learning can take place through many different models and strategies. See some of the tried-and-true ways to encourage peer learning.

Jigsaw Method: In the jigsaw method of peer learning, students are split into groups, with each group given a different topic to study. Then, one student from each group is taken to form a collaborative group where multiple concepts are discussed. If there are eight jigsaw groups, then eight topics will ultimately be discussed in one group.

The jigsaw method is a teaching strategy that involves dividing a class into small groups and having students become experts on a specific topic:

1. Prepare

The teacher divides the lesson into subtopics and assigns each student a subtopic to learn.

2. Form expert groups

Students with the same subtopic form expert groups to discuss and clarify their understanding.

3. Teach

Students return to their original groups and teach each other what they learned.

4. Apply

Students use the information they learned to create a final product, participate in a class discussion, or take a test.

Impact of Innovative Method: This activity helps students to enhance team work spirit, individual responsibility, interpersonal skills, self-learning, and analytical skills.

The jigsaw method can help students:

- **Develop collaboration skills:** Students learn to rely on each other and work together to achieve a common goal.
- **Improve comprehension:** Students learn to understand and retain information.
- **Build empathy:** Students learn to respect and like one another.

- **Create a sense of belonging:** Students feel a sense of attachment to their group members.

The jigsaw method can be adapted for many different topics, objectives, and session durations.

Rubrics used:

Skills/Criterion/Category	2 Points	1.5 Points	1 Points	0.5 Points
Deep Learning	Very Good	Good	Average	Poor
Communication Skills	Very Good	Good	Average	Poor
Confidence	Very Good	Good	Average	Poor
Collaboration and Teamwork	Very Good	Good	Average	Poor
Feedbacks/QA	Very Good	Good	Average	Poor

Assessment:

Sr. no.	Name of student	Deep Learning (2)	Communication Skills (2)	Confidence (2)	Collaboration and Teamwork (2)	Feedbacks/QA (2)	Total (10)	Average (10)
Peer Group A: IC 78XX series Pin, Internal diagram, Regulated DC power supply using 7805								
1	Chetan Aher	0.5	0.5	0.5	0.5	0.5	2.5	5.5
2	Harsh Bhise	1.5	1.5	1.5	1.5	1.5	7.5	
3	Srushti Birari	2	2	2	2	2	10	
4	Nikita Chavhan	1	1	1	1	1	5	
5	Rutuja Deore	0.5	0.5	0.5	0.5	0.5	2.5	
Peer Group B: IC 79XX series Pin, Internal diagram, Regulated DC power supply using 7805								
6	Shruti Gade	0.5	0.5	0.5	0.5	0.5	2.5	6.11
7	Prerana Gaikwad	1	1	1	1	1	5	
8	Pralhad Gangurde	1.5	1.5	1.5	1.5	1.5	7.5	
9	Vaishnavi Gaware	0.5	0.5	0.5	0.5	0.5	2.5	
10	Rutuja Jadhav	1.5	1.5	1.5	1.5	1.5	7.5	
11	Nikhil Kaklij	1	1	1	1	1	5	
12	Ashish Kawade	2	2	2	2	2	10	
13	Mansi Khairnar	2	2	2	2	2	10	
14	Sanika Kothawade	1	1	1	1	1	5	
Peer Group C: IC 723 Pin, Internal diagram, Specifications etc								
15	Dhanashri Parvat	1.5	1.5	1.5	1.5	1.5	7.5	5.41
16	Suhani Patil	1	1	1	1	1	5	
17	Ahirwad Patole	1	1	1	1	1	5	
18	Ayush Rai	0.5	0.5	0.5	0.5	0.5	2.5	
19	Sanjana Sangale	0.5	0.5	0.5	0.5	0.5	2.5	
20	Shruti Wani	2	2	2	2	2	10	
Peer Group D: Design of Low Voltage Regulator using IC 723								
21	Swamini Ramole	1.5	1.5	1.5	1.5	1.5	7.5	6
22	Harsh Saindane	1	1	1	1	1	5	
23	Krishna Sanap	1.5	1.5	1.5	1.5	1.5	7.5	
24	Keshav Shete	1.5	1.5	1.5	1.5	1.5	7.5	

25	Om Dusane	0.5	0.5	0.5	0.5	0.5	2.5	
Peer Group E: Design of High Voltage Regulator using IC 723								
26	Riddhi Sonje	1.5	1.5	1.5	1.5	1.5	7.5	6.87
27	Akshada Tarle	1.5	1.5	1.5	1.5	1.5	7.5	
28	Kalyani Thoke	1	1	1	1	1	5	
29	Pranjal Wagh	1.5	1.5	1.5	1.5	1.5	7.5	
Peer Group F: Bandwidth of opamp in Inverting configuration, Slew rate measurement, comparators and Monostable Multivibrator								
30	Samarth Raut	0.5	0.5	0.5	0.5	0.5	2.5	3
31	Shrutika Chaudhari	0.5	0.5	0.5	0.5	0.5	2.5	
32	Aryan Dhondge	0.5	0.5	0.5	0.5	0.5	2.5	
33	Madhura Kulkarni	1	1	1	1	1	5	
34	Mayuri Kakade	0.5	0.5	0.5	0.5	0.5	2.5	

Photos:





The students of SE (I&C) during the demonstration of Peer Teaching at the Department of Instrumentation & Control Engineering on 08/11/2024 and 09/11/2024.

Subject Incharge

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HOD

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