DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Academic Year: 2025- 2026 (Odd Semester)

Active Learning Best practices: Think-Pair-Share (TPS)

Degree & Branch: B.Tech. Artificial Intelligence and Data Science Course

Semester/Year/Section: III/II/B

Code & Title: - AD3351 – Design and Analysis of Algorithms

Name of the Faculty Member: Mrs.C.Karpagavalli , AP/AI & DS

Unit / Topic: Unit - III / Optimal Binary Search Tree

Course Outcome: CO3

Topic Learning Outcome: TLO24

Activity Chosen: Think-Pair-Share (TPS)

Date and Time: 10.09.2025 & 10.30 A.M to 11.15 A.M

OPTIMAL BINARY SEARCH TREE:

Key	A	B	C	D
Probability	0.1	0.2	0.4	0.3

Main Table C

	0	1	2	3	4
1	0	0.1	0.4	1.1	
2		0	0.2	0.8	
3			0	0.4	1.0
4				0	0.5
5					0

Root Table R

	0	1	2	3	4
1		1	2	3	
2			2	3	
3				3	3
4					4
5					

K = 1 K = 2 K = 3

C [1, 3] = min { C[1,0]+C[2,3] , C[1, 1] + C[3, 3] , C[1, 2] +C[4, 3] } + P1+ P2 +P3

= min { 0 + 0.8 , 0.1 +0.4, 0.4 + 0} + 0.1 + 0.2 +0.4

= min {0.8 , 0.5 , 0.4 } + 0.7

= 0.4 + 0.7

= 1.1 (root = 3)

EXAMPLE:

OBST CREATION

$$C(i,j) = \min_{i \le k \le j} \{C(i,k-1) + C(k,j)\} + \sum_{s=i}^{j} w_s$$

Item	1	2	3	4
Key	10	20	30	40
Freq (w)	4	2	6	3

r(0, 4)

3

i \ j	0	1	2	3	4
0	0	4^1	8^1	20^3	26^3
1		0	2^2	10^3	16^3
2			0	6^3	12^3
3				0	3^4
4					0

❖ **Justification:**

As part of the think-pair-share method of collaborative learning, students are involved to think individually and sharing their understanding of a topic with their classmates.

- **Step 1 (5 Minutes)**

  Team of students pay attention to the instructor's question.

- **Step 2: (10 minutes)**

  Students think about the given topic and then write their responses.

- **Step 3: (15 minutes)**

  Students discuss their response with their peers.

- **Step 4: (15 minutes)**

  Students share their thoughts and ideas with the whole class.

- **Time Allotted for the Activity: 45** minutes

❖ **Details of the Implementation:**

- Think-Pair-Share, a Collaborative active learning practice, conducted for II AI &DS students, in which students work on a question posed by instructor.

  T (Think): Students think about the given topic Master-Slave Replicationindividually and then write the responses.

  P (Pair): Each student is paired with their peers or groups to discuss theconcepts of Master-Slave Replication.

  S (Share): Students discussed with their peers and expand the share to the whole class discussion. Mr. SIVARAM S and Ms. R SANDHIYA of II AI & DS – S ection shared them

views to the whole class.

Reflective Critique:

- **Feedback of practice from students and other stakeholders:**
  - Students felt they had adequate time to think critically.
  - Students felt this activity provides a chance to collaborate in groups.
- **Benefit of the practice:** (E.g.: Outcome attainment would have increased due toinnovative practice over conventional practice)
  - Students share the concept ideas with their peers that helps to build communication skills.
  - Students can be able to get more clarity in the particular topic through discussion and sharing their views with the other students in the class.
- **Challenges faced in implementation:**
  - Students may not have enough time to independently reflect before delivering their ideas, depending on the time limits.
- **Observations:**

The implementation of the Think-Pair-Share activity was successful in enhancing student engagement, promoting deeper understanding, and creating a more interactive learning environment. By using this approach, students were encouraged to take ownership of their learning process and actively participate in class activities. However, continuous refinement based on student feedback and ongoing assessment of the approach will be essential to optimize its effectiveness in future implementations.

- **Students Response:**
  - Students were actively participated to prepare the topic wise questions and concept notes.
  - Most of the students were enjoyed the session.
  - Students response ensures the students could improve listening, communication, creativity and problem-solving skills.
- **References:**

  - https://www.wgu.edu/heyteach/article/how-think-pair-share-activity-can-improve-your-classroom-discussions1704.html
  - https://www.structural-learning.com/post/think-pair-share-a-teachers-guide.
  - https://www.uopeople.edu/blog/think-pair-share/

Glimpses:


GPS Map Camera
Rajapalayam, Tamil Nadu, India
Fgm7+7g4, Vadakku Venganallur, Rajapalayam, Tamil Nadu 626117, India
Lat 9.48288° Long 77.514215°
10/09/2025 11:09 AM GMT +05:30
Google


GPS Map Camera
Rajapalayam, Tamil Nadu, India
Ayyanar Kovil Road, Venganallur, Virudhunagar District, Rajapalayam, Tamil Nadu 626117, India
Lat 9.482686° Long 77.514112°
10/09/2025 10:44 AM GMT +05:30
Google


GPS Map Camera
Rajapalayam, Tamil Nadu, India
Fgm7+7g4, Vadakku Venganallur, Rajapalayam, Tamil Nadu 626117, India
Lat 9.482939° Long 77.514104°
10/09/2025 10:52 AM GMT +05:30
Google


GPS Map Camera
Rajapalayam, Tamil Nadu, India
Fgm7+7g4, Vadakku Venganallur, Rajapalayam, Tamil Nadu 626117, India
Lat 9.482784° Long 77.514251°
10/09/2025 10:44 AM GMT +05:30
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FEEDBACK

Active Learning Best practices: Think-Pair-Share (TPS)

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Google form Link: https://forms.gle/HWX74C9Rpj7unSCq6

Feedback Questions:

1. Did the plan align with your expectations?

   Yes No
2. How effectively was the innovative practice plan implemented?

   Excellent Good Satisfactory
3. How well did you understand the objectives and purpose of the innovative practice plan?

   1 2 3 4 5
4. Were the necessary resources and support provided for successful implementation?

   Yes No
5. Did you notice any specific benefits or changes resulting from the plan?

   Yes No
6. How engaged were you throughout the practice plan?

   1 2 3 4 5
7. Did the plan provide opportunities for active participation and collaboration?

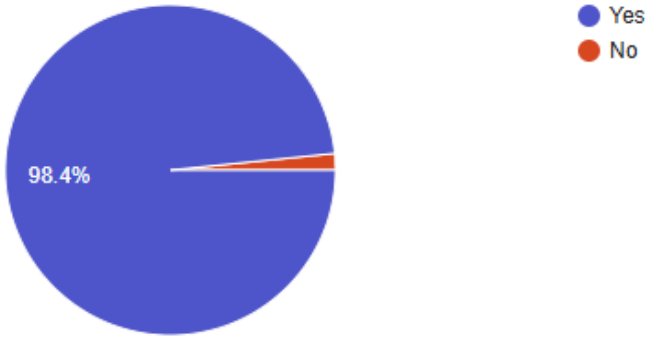
   Yes No

Feedback Analysis:

Did the plan align with your expectations?

Copy chart

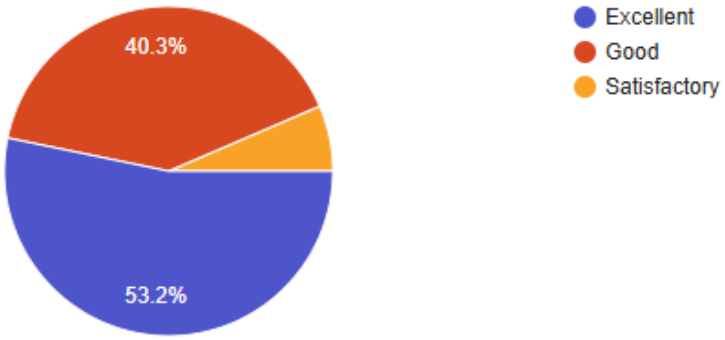
62 responses



How effectively was the innovative practice plan implemented?

Copy chart

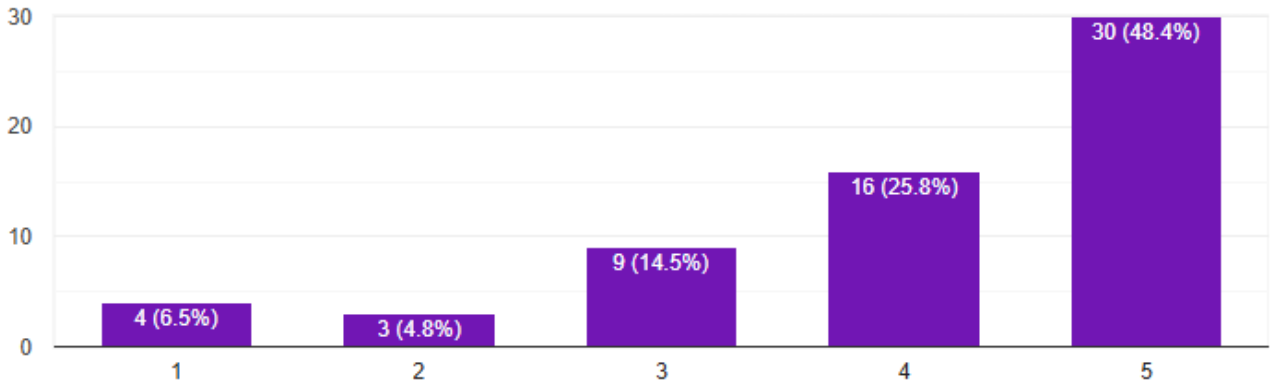
62 responses



How well did you understand the objectives and purpose of the innovative practice plan?

Copy chart

62 responses



Were the necessary resources and support provided for successful implementation?

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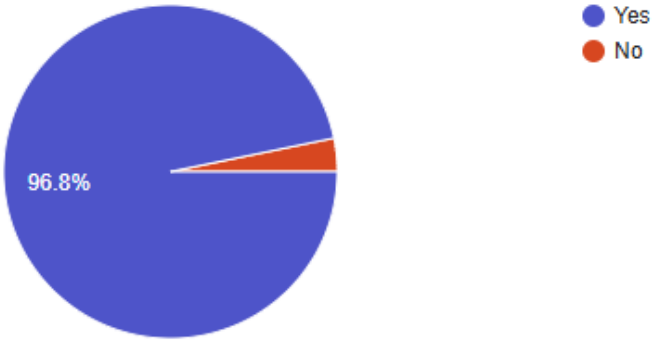

Did you notice any specific benefits or changes resulting from the plan?

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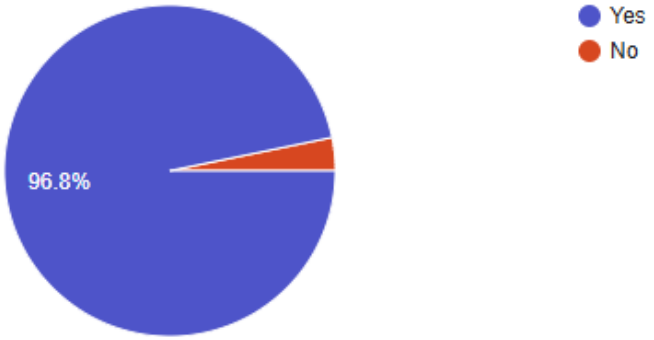

How engaged were you throughout the practice plan?

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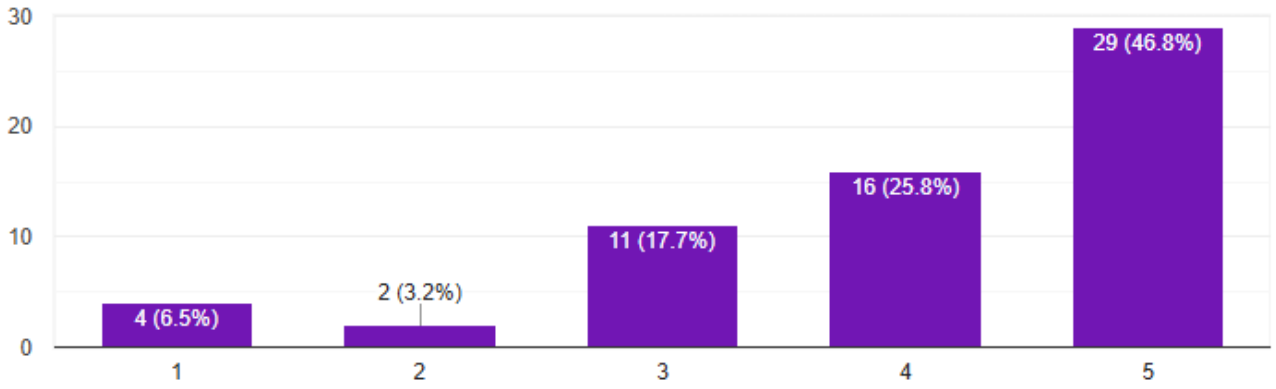
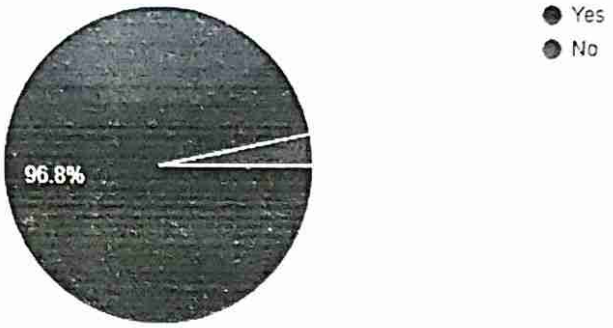
62 responses



Did the plan provide opportunities for active participation and collaboration?

62 responses



12/9/25

Signature of the Faculty Member

12/9

HoD/AD