Department of Computer Science and Engineering

Academic Year: 2024- 2025 (Odd Semester)

Degree, Semester & Branch: III Semester B.E. CSE
Course Code & Title: CS3352 & Foundations of Data Science
Name of the Faculty member (s): Dr.M.Swarna Sudha

Innovative Practice Description

Unit / Topic: Unit I / Data Warehousing and Data Mining

Course Outcome: CO 1

Topic Learning Outcome: TLO 02

Activity Chosen: Learning by Teaching

Date of Implementation: 20.09.2024

Justification:

Data Warehousing and Data Mining are essential concepts in Data Science with wide-ranging applications in engineering and business. When students take on the role of teachers, they delve deeply into the topics, engage in discussions, and share their knowledge with peers. This peer-to-peer learning model strengthens their understanding, promotes critical thinking, and encourages collaborative problem-solving.

Time Allotted for the Activity: 35 minutes

Details of the Implementation:

Preparation: Before the class, the teacher inquired about the students' interest in teaching the topics of Data Warehousing and Data Mining. Some students expressed their interest.

Topic Assignment: Based on their interest, Lakshitha S and Asma M were assigned subtopics related to Data Warehousing and Data Mining. Adequate preparation time was given as the topics were allocated a day before the session.

Presentation:

Lakshitha S and Sri Prishigaa R Presented the concept of Data Warehousing using real-world applications, explaining how data warehouses are used in business intelligence and decision-making.

M. Asma used visual aids, such as flowcharts and diagrams, to demonstrate the process of data extraction, transformation, and loading (ETL), showcasing its importance in building and maintaining data warehouses.

R.HemaMalini : Delivered an engaging presentation on Data Mining techniques, utilizing

animated videos to explain clustering, classification, and association rule mining, offering a dynamic and interactive way to grasp abstract concepts.

CO – PO / PSO mapping:

CO	PO1	PO2	PO4	PO9	PO10	PSO1
CO 3	2	2	1	1	1	1

(1 – Low 2 – Moderate 3 High)

PO / PSO mapped:

Innovative practice	**PO1**	**PO2**	**PO4**	**PO9**	**PO10**	**PSO1**
	2	2	1	1	1	1
Justification for correlation	.Apply mathematical and scientific concepts to analyze and design solutions for Data Warehousing and Data Mining.	.Develop the ability to identify and address engineering problems related to managing and analyzing large datasets.	Analyze and propose solutions for challenges in extracting meaningful patterns from data.	Work effectively in teams, contributing as members or leaders to accomplish tasks collaboratively.	Communicate complex data science concepts effectively.	Excel in software development tasks involving data analysis and decision-making.

Images / Screenshot of the practice:

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Figure 1 :Lakshitha S and Sri Prishigaa R explaining real-world applications of Data Warehousing


Figure 2 Asma and Hemamalini R Using animated ppt to teach Data Mining techniques.

Reflective Critique:

Feedback of practice from students and other stakeholders:

- Students actively listened to the presentations and found the sessions engaging.
- They reported that the activity helped them understand and retain the topics more effectively.
- Students shared that taking on the teaching role boosted their confidence and knowledge.
- Participants felt that this activity improved their communication skills, particularly in presenting technical concepts clearly and concisely

Benefit of the practice:

Students gained a deeper understanding through active participation.

- The activity encouraged self-learning and preparation, leading to improved retention of key concepts.
- Communication skills and teamwork were enhanced as students collaborated to present their topics.
- The peer-teaching model fostered a supportive learning environment and inspired students to share knowledge.

Challenges faced in implementation:

- Motivating students who were hesitant to participate due to shyness or lack of confidence was challenging. Efforts were made to encourage them to engage actively.
- Additional time was required for planning and executing the interactive teaching sessions compared to conventional methods. However, the outcomes justified the effort

Reference

1. https://effectiviology.com/protege-effect-learn-by-teaching
2. https://www.researchgate.net/publication/351905566_Impact_of_Seminars_on_Student_S oft_Skills_Development
3. https://teaching.cornell.edu/teaching-resources/active-collaborative-learning/collaborative-learning