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Department of Artificial Intelligence and Data Science

Academic Year 2025 – 2026 (Even Semester)

Degree, Semester & Branch: B.Tech, VI & Artificial Intelligence and Data Science

Course Code & Title: CCS369 & Text and Speech Analysis - 'B'

Name of the Faculty member (s): Dr. S. Selva Birunda, ASP - I/AD

Innovative Practice Description

- **Unit / Topic:** Unit I / Natural Language Processing
- **Course Outcome:** CO1
- **Topic Learning Outcome:** 1a
 - ❖ **Activity Chosen:** Flipped Classroom

- **Justification:**

Flipped classroom is an instructional approach that reverses the traditional teaching model. In this method, direct instruction is moved outside the classroom through readings and pre-recorded video lectures, allowing students to engage with course content at their own pace. Classroom time is then used for interactive activities such as, discussions, and collaborative tasks. This approach enables instructors to redesign in-class learning experiences, incorporate practice-based activities, and actively engage students while addressing individual learning needs.

Time Allotted for the Activity: 45 Minutes

- **Details of the Implementation:**

- Before the class, students were provided with online learning resources and pre-recorded videos covering fundamental Natural Language Processing concepts, such as text pre-processing, tokenization, stop-word removal, stemming and lemmatization, vectorization techniques, and NLP applications
- Students were instructed to review these materials in advance and prepare questions or discussion points.
- They were encouraged to identify key concepts, reflect on the pre-class content, and formulate queries or observations related to NLP techniques.



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- During the class, students were divided into groups, with 6 to 7 members in each group.
- Each group was assigned a real-world problem related to Natural Language Processing, such as sentiment analysis of product reviews, text classification of news articles, and keyword extraction from documents.
- The groups collaboratively analysed the problem, selected appropriate NLP techniques, and discussed implementation strategies.
- One member from each group then presented their findings to the class, explaining their chosen NLP approach, pre-processing techniques used, and implementation challenges encountered in addressing the assigned problem.

• **Images / Screenshot of the practice:**





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- **Reflective Critique:**

- ❖ *Feedback of practice from students and other stakeholders:*

- ✓ Students valued the flexibility to learn at their own pace, as they could revisit pre-recorded videos and reading materials multiple times for better understanding.
- ✓ Students expressed higher satisfaction and better conceptual clarity.

- ❖ *Benefit of the practice:*

- ✓ Promotes self-paced and self-directed learning, allowing students to revisit learning materials anytime.
- ✓ Improves student engagement and participation during in-class sessions.
- ✓ Teachers can focus more on guiding and supporting students through activities, rather than simply delivering content.

- ❖ *Challenges faced in implementation:*

- ✓ Some students resist due to unfamiliarity with self-directed learning methods.
- ✓ Varied learning pace and motivation levels among students.
- ✓ The time and effort required from a teacher's perspective initially when creating the flipped class material is higher than for a traditional class.

References:

1. <https://www.taotesting.com/blog/5-examples-of-flipped-learning-for-your-classroom/>
2. <https://uwaterloo.ca/centre-for-teaching-excellence/catalogs/tip-sheets/class-activities-and-assessment-flipped-classroom>



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FEEDBACK

Active Learning Best practices: Flash Cards Active Learning Technique

Degree, Semester & Branch : B. Tech, VI Semester & AI / DS
Course Code & Title : CCS369 & Text and Speech Analysis - 'B'
Name of the Faculty member (s) : Dr. S. Selva Birunda, ASP - I/AD

Theme of discussion: Natural Language Processing

Date and Time: 24.01.2026 & 2.40 pm to 3.25 pm

Feedback collected in class and also through online

Feedback Questionnaire:

1. How clear were the pre-class learning materials?

Very Clear **Clear** **Unclear**

2. In-class activities helped me apply the concepts learned before class.

Strongly Agree **Agree** **Disagree**

3. How clear were the fundamental NLP concepts (tokenization, stemming, lemmatization, etc.)?

Very Clear **Clear** **Unclear**



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Feedback Analysis:

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Feedback Analysis:

Attempts: 17 out of 17 -0.89

How clear were the pre-class learning materials (videos/notes)?

Very clear	85%	85% answered correctly
Clear	15%	
Unclear	0%	
	0%	

Attempts: 17 out of 17 -0.88

In-class activities helped me apply the concepts learned before class.

Strongly agree	72%	72% answered correctly
Agree	28%	
Disagree	0%	
	0%	

Attempts: 17 out of 17 -0.83

How clear were the fundamental NLP concepts (tokenization, stemming, lemmatization, etc.)?

Very clear	88%	88% answered correctly
Clear	12%	
Unclear	0%	
	0%	


Faculty in-charge


HoD/AD

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