



**Dr. D. Y. Patil**  
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**Innovations by the Faculty in Teaching and Learning:**

**Innovative Teaching Methods-2022-23**

Sr. No.	Name of Teacher	Name of Course	Semester	Innovative Category (PBL/ABL/EL/TEBL)	Innovative Method	Available on Website
1	Dr. Adsul Alpana	CC	Sem-II	ABL	Flipped Classroom	Yes
2	Mr. T. Arivanantham	WT	Sem-II	PBL	Mini Project	Yes
3	Mr. Nitish Mali	OOP	Sem-I	TEBL	Google Classroom	Yes
		SE	Sem-II	TEBL	Google Classroom	Yes
4	Mr. Sagar Dhanke	BI	Sem-I	TEBL	YouTube	Yes
		CSDf	Sem-II	TEBL	YouTube	Yes
5	Mr. Vishal Borate	ML	Sem-I	TEBL	NPTEL Video	Yes
6	Mrs. Mayuri Ghadge	BCT	Sem-I	TEBL	YouTube Video	Yes
7	Mrs. Poonam Sadafal	CNS	Sem-I	TEBL	Social media	Yes
8	Dr. Desai Latika	IOTES	Sem-I	TEBL	Multilangu age Lecture	Yes
9	Ms. Nikita Oswal	DSA	Sem-II	ABL	Mind Map	Yes
		FDS	Sem-I	ABL	Quiz	Yes
10	Mr. Rahul Salunkhe	TOC	Sem-I	ABL	Google Classroom	Yes
11	Mrs. Sarojini Naik	MP	Sem-II	TEBL	YouTube Channel	Yes

**PBL – Project Based Learning**  
**EL – Experimental Learning**

**ABL – Activity Based Learning**  
**TEBL - Technology Enhanced Blended Learning**

**Head of Department**  
**Dr. Alpana Adsul**

**Principal**  
**Dr. Suresh Mali**



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Activity Based Learning

**Title of Innovation method:** Flipped classroom (Case study analysis)

**Faculty / Inventor:** Dr. Alpana Adsul

**Course Name and Code:** Cloud Computing (410253-C)

**Class and Division:** TE (A&B)

**Goals / objective of the method:** Flipped classroom model for cloud computing is case study analysis, where students examine and discuss how various organizations and industries use cloud computing to achieve their goals and overcome their challenges

**Topic Covered:** Use of cloud computing and Adoption of cloud computing as innovation in the organization

**Description of method (8 – 10 lines):**

Faculty shares case study link related to topic to students before actual lecture. The students are provided the case study information. The case study analysis model in the flipped classroom for cloud computing immerses students in understanding how organizations leverage cloud solutions to meet goals and overcome challenges. This approach sharpens critical thinking and analytical skills by delving into real-world scenarios.

**Benefits of the method:**

Case study analysis also enables students to compare and contrast different cloud solutions, such as private cloud vs public cloud, and evaluate their trade-offs and benefits. This model helps students to develop their critical thinking and analytical skills

**For review and critique contact:** [alpana.adsul@dypatilef.com](mailto:alpana.adsul@dypatilef.com)

**Review and critique**

This approach helps in developing critical thinking and decision-making abilities, preparing students for the dynamic and evolving landscape of cloud technology. This method not only enhances technical expertise but also nurtures a holistic understanding of cloud computing in diverse organizational contexts. So students are happy to learn at home and then review or repeat this things in cloud computing lecture

**Action taken based on review and critique:** Students want more case studies for future topics.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Project Based Learning

**Title of Innovation method:** Mini Project

**Faculty / Inventor:** Mr. T. Arivanantham

**Course Name and Code:** Web Technology (310252)

**Class and Division:** TE (A)

**Goals / objective of the method:** Mini project is essential components of educational and professional development, allowing individuals and teams to engage in hands-on learning experiences.

**Description of method:**

Mini Project helps to explore and strengthen the understanding of fundamentals through practical application of theoretical concepts. Mini Project can help to boost skills and widen horizon of thinking. It acts like a beginners guide to do larger projects later in their career.

**Benefits of the method:**

Providing hands-on experience and practical application of theoretical knowledge.

Helping students apply what they have learned in real-world scenarios.

Developing problem-solving skills by tackling small, manageable tasks.

Acquiring new abilities and knowledge.

**For review and critique contact:** [t.arivanantham@dypatilef.com](mailto:t.arivanantham@dypatilef.com)



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Technology Enhanced Blended Learning

**Title of Innovation method:** Google Classroom

**Faculty / Inventor:** Mr. Nitsh Mali

**Course Name and Code:** Object Oriented Programming (210243)

**Class and Division:** SE (C)

**Goals / objective of the method:**

1. Foster interactive learning experiences
2. Promote Collaboration
3. Reduce paperwork and save time in managing classroom activities.
4. Build digital skills essential for modern learning.

**Topic covered:** Animated Videos on OOP concepts, Assignments.

**Description of method (8 – 10 lines):**

Google Classroom is an online platform intended to simplify the teaching-learning process. It helps educators to manage and enhance classroom activities, streamline communication, and create a collaborative learning environment. It allows students to submit work directly through the platform. It encourages real-time collaboration using Google Docs, Sheets, and Slides. It helps teachers to conduct quizzes and tests using Google Forms or integrated tools.

**Benefits of the method:**

- Available across devices (laptops, tablets, smartphones) and supports remote learning.
- Allows asynchronous learning, enabling students to learn at their own pace.
- Simple, intuitive interface that requires minimal technical expertise.

**For review and critique contact:** [nitsh.mali@dypatilef.com](mailto:nitsh.mali@dypatilef.com)

**Review and Critique:**

It has fostered collaboration, increased efficiency, and supported innovative teaching practices. It has enriched the learning experience for students. It made education more accessible and effective. Students had suggested continuous use of google classroom platform for notes, assignment and quizzes.

**Action taken based on review and critique:**

After getting feedback from students, google classroom becomes the continuous practice for study material, assignments and quizzes sharing.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Technology Enhanced Blended Learning

**Title of Innovation method:** Google Classroom

**Faculty / Inventor:** Mr. Nitsh Mali

**Course Name and Code:** Software Engineering (210253)

**Class and Division:** SE (C)

**Goals / objective of the method:**

1. Track student progress effectively.
2. Provide personalized learning opportunities.
3. Allow self-paced learning by giving access to resources anytime, anywhere.

**Topic covered:** Unit 1 to 6 notes, Assignments, Quiz on Agile development.

**Description of method (8 – 10 lines):**

Google Classroom is an online platform intended to simplify the teaching-learning process. It helps educators to manage and enhance classroom activities, streamline communication, and create a collaborative learning environment. It allows students to submit work directly through the platform. It encourages real-time collaboration using Google Docs, Sheets, and Slides. It helps teachers to conduct quizzes and tests using Google Forms or integrated tools.

**Benefits of the method:**

- Available across devices (laptops, tablets, smartphones) and supports remote learning.
- Allows asynchronous learning, enabling students to learn at their own pace.
- Simple, intuitive interface that requires minimal technical expertise.

**For review and critique contact:** [nitsh.mali@dypatilef.com](mailto:nitsh.mali@dypatilef.com)

**Review and Critique:**

It has fostered collaboration, increased efficiency, and supported innovative teaching practices. It has enriched the learning experience for students. Study material become easily available for students anytime, anywhere. It had minimized dependencies on other students or even faculty to access resources.

**Action taken based on review and critique:**

Students found satisfied about the resources shared and the use of Google classroom as an innovative teaching learning practice.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Technology Enhanced Blended Learning

**Title of Innovation method:** YouTube Video

**Faculty / Inventor:** Mr. Sagar Dhanake

**Course Name and Code:** Elective-VI (Business Intelligence) (410253(C))

**Class and Division:** BE (Division: A and B)

**Goals / objective of the method:** Visuals of business dashboards, datasets being cleaned, and reports being generated in real-time

**Topic covered:** Data Preparation and Process, BI Tools

**Description of method (8 – 10 lines):**

Data preparation is the foundation of effective Business Intelligence. It involves cleaning, transforming, and organizing raw data into a structured format ready for analysis. Using BI tools like Power BI, Tableau Prep, or Looker, this process becomes faster, more accurate, and user-friendly. This method ensures your data is not only clean and consistent but also optimized for generating actionable insights. By leveraging BI tools, businesses can transform raw data into visually compelling dashboards, reports, and predictive analytics with ease. Whether you're an analyst or a decision-maker, mastering this method is a game-changer for making informed, data-driven decisions.

**Benefits of the method:**

Data preparation using Business Intelligence tools offers numerous benefits that enhance efficiency, accuracy, and decision-making. Here's why this method is a game-changer for anyone working with data: Time-Saving Automation, Improved Data Accuracy, Seamless Integration of Data Sources, Enhanced Decision-Making, Scalability and Adaptability, User-Friendly Visualizations, Cost Efficiency, Regulatory Compliance and Data Governance. With these benefits, data preparation using BI tools is not just a technical necessity—it's a competitive advantage. Whether you're a data professional or a business leader, mastering this method is the key to unlocking the full potential of your data.

**For review and critique contact:** [sagar.dhanake@dypatilef.com](mailto:sagar.dhanake@dypatilef.com)

**Review and critique:**

- Integration: A flowchart of multiple data sources merging into one dataset.
- Provide quick examples of how tools like Power BI and Tableau handle cleaning, transformation, and integration.

**Action taken based on review and critique:**

- Power BI: Highlighted its automated workflows for repetitive cleaning tasks and seamless integration with large datasets.
- Handling big data efficiently using cloud-based BI tools like Snowflake integration with Power BI.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Technology Enhanced Blended Learning

**Title of Innovation method:** Introduction of Cyber Security YouTube Video

**Faculty / Inventor:** Mr. Sagar Dhanake

**Course Name and Code:** Elective-III (Cyber Security and Digital Forensics) (410244(C))

**Class and Division:** BE (Division: A and B)

**Goals / objective of the method:** To understand the basic concepts Cyber Security

**Topic covered:** Cyber Crime and Nature and Scope of Cyber Crime

**Description of method (8 – 10 lines):**

Unlock the secrets to staying safe in the digital world! In this video, we break down the basics of cybersecurity, explore common threats, and share practical tips to protect your personal and professional data. Whether you're a beginner or looking to level up your knowledge, this guide will help you take charge of your online security. Stay tuned and learn how to safeguard your digital life. This video is your perfect starting point! Learn how to protect yourself from hackers, secure your devices, and safeguard your personal data in the digital world. From understanding basic threats to adopting simple security measures, we'll guide you step-by-step. Start your journey to becoming cyber-safe today. Cybersecurity is more critical than ever in today's interconnected world. In this video, we dive into key strategies for protecting sensitive information, defending against cyber threats, and staying ahead in the ever-evolving security landscape. Ideal for IT professionals, business owners, and anyone looking to strengthen their organization's cyber resilience.

**Benefits of the method:**

YouTube is one of the largest platforms globally, with billions of active users. Sharing your cybersecurity video can help you reach a diverse audience, from beginners to professionals, across the world. Cybersecurity concepts can sometimes be abstract or technical. A YouTube video allows you to use visuals, animations, and real-world examples to make complex topics easy to understand and engaging.

**For review and critique contact:** [sagar.dhanake@dypatilef.com](mailto:sagar.dhanake@dypatilef.com)

**Review and critique:**

- Add more clarity, examples, or depth to sections viewers found confusing or underdeveloped.
- Include attention-grabbing hooks, storytelling elements, or real-life scenarios.

**Action taken based on review and critique:**

- Simplified technical jargon and explained concepts using real-life examples (e.g., comparing phishing to scam calls).
- Incorporated animations, infographics, and dynamic transitions to make explanations more visually appealing.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Technology Enhanced Blended Learning

**Title of Innovation method:** NPTEL Video Series

**Faculty / Inventor:** Mr. Vishal Kisan Borate

**Course Name and Code:** Machine Learning (410242)

**Class and Division:** BE (A & B)

**Goals / objective of the method:**

- To understand the need for Machine learning
- To study and understand classification methods
- To learn the working of clustering algorithms

**Topic covered:** Supervised Learning Algorithm- Linear Regression, Logistic Regression, K-Nearest Neighbour.

**Description of method (8 – 10 lines):**

This course provides a concise introduction to the fundamental concepts in machine learning and popular machine learning algorithms. It will cover the standard and most popular supervised learning algorithms including linear regression, logistic regression, decision trees, k-nearest neighbour, an introduction to Bayesian learning and support vector machines and kernels and neural networks.

**Benefits of the method:**

NPTEL (National Programme on Technology Enhanced Learning) offers a range of online certification courses, primarily in engineering, science, and humanities. Here are some of the key benefits of these courses:

**Quality Content:** NPTEL courses are developed by faculty from prestigious Indian Institutes of Technology (IITs) and Indian Institutes of Management (IIMs), ensuring high-quality educational content.

**Flexible Learning:** The courses are self-paced, allowing learners to study at their convenience, which is particularly beneficial for working professionals or students with busy schedules.

**Accessibility:** The courses are available online, making them accessible to anyone with an internet connection, regardless of geographical location.

**For review and critique contact:** [vishal.borate@dypatilef.com](mailto:vishal.borate@dypatilef.com)

**Review and critique received:**

Got Oral question as after certification & passing the exam whether students will get reimbursing of exam fees.

**Action taken based on review and critique:**

If students pass the exam with Elite+Gold medal then college will reimburse the 100% fees of the exam.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Technology Enhanced Blended Learning

**Title of Innovation method:** Youtube

**Faculty / Inventor:** Mrs. Mayuri Ghadge

**Course Name and Code:** Block-Chain Technology

**Class and Division:** BE (A and B)

**Goals / objective of the method:** Basic of Encryption and Decryption Techniques like Transposition and Substitution Techniques

**Topic covered:** Basic concepts Cryptography

**Description of method (8 - 10 lines):**

To understand the basic concepts of hashing key techniques. Encryption and decryption are processes used to secure and retrieve information, ensuring confidentiality and integrity of data during transmission or storage. Encryption converts plain text (readable data) into ciphertext (unreadable data) using an algorithm and a key. Decryption reverses this process, transforming the cipher text back to plaintext using a decryption key.

**Benefits of the method:**

Students are able to understand better, on the concepts. Blended Learning helps the students to understand how Transposition and Substitution Techniques are used in classical encryption for converting real text into cipher text. This helps to students to understand the subject better.

**For review and critique contact:** [mayuri.ghadge@dypcoei.com](mailto:mayuri.ghadge@dypcoei.com)



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Technology Enhanced Blended Learning

**Title of Innovation method:** Social Media

**Faculty / Inventor:** Mrs. Poonam Sadafal

**Course Name and Code:** CNS (Computer Network and Security) (310244)

**Class and Division:** TE (B)

**Goals / objective of the method:** The objective of social media platforms like WhatsApp in blended learning is to enhance communication, collaboration, and engagement among students, teachers, and peers.

**Topic covered:** Sharing the subject materials such as assignments, PPT's, Videos

**Description of method (8 – 10 lines):**

This quick communication fosters an environment where learning doesn't stop outside of classroom hours. WhatsApp enables the creation of group chats, where students can collaborate on assignments, discuss learning materials, or exchange ideas. These groups can be organized around specific topics, assignments, or project work. Teachers can share various learning materials, such as assignments, videos, PDF documents, and even voice notes through WhatsApp.

**Benefits of the method:**

1. Improved Collaboration: Group Chats
2. Instant Feedback and Support
3. Increased Engagement
4. Improved Classroom Interaction

**For review and critique contact:** [poonam.sadafal@dypcoei.com](mailto:poonam.sadafal@dypcoei.com)



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Technology Enhanced Blended Learning

**Title of Innovation method:** Multilanguage Study material-NEP-2020

**Faculty / Inventor:** Dr. Desai Latika

**Course Name and Code:** IOTES (310245A)

**Class and Division:** TE (B and C)

**Goals / objective of the method:** To understand the Definition, Characteristics, Framework and Architecture of IOT using multilanguage concept.

**Topic covered:** Definition, Characteristics, Framework and Architecture of IOT

**Description of method (8 – 10 lines):**

The National Education Policy 2020 (NEP 2020) emphasizes the importance of multilingualism as a key component of education in India. This approach aims to promote linguistic diversity, enhance cognitive abilities, and strengthen cultural identity among students. NEP 2020 recommends that wherever possible; the mother tongue, regional language, or local language should be the medium of instruction at least up to Grade 5 (preferably till Grade 8 or beyond). This approach aligns with research showing that children learn best in their native language during foundational years.

**Benefits of the method:**

- **Cognitive Development:** Multilingual education enhances problem-solving skills, creativity, and critical thinking.
- **Cultural Identity and Inclusion:** Learning in one's native language fosters a sense of belonging and pride in one's culture and heritage.
- **Global Competence:** Introducing foreign languages prepares students for international opportunities while retaining their cultural roots.
- **Educational Equity:** It bridges the gap for students from rural and regional backgrounds, providing them with a strong foundation in their native languages.

**For review and critique contact:** [desai.latika@dypatilf.com](mailto:desai.latika@dypatilf.com)

Got oral critique:

Don't understand concept in English language effectively.

**Action taken based on review and critique:**

PPT are modified and made it in multiple language i.e. English and hindi.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Activity Based Learning

**Title of Innovation method:** Mind Map

**Faculty / Inventor:** Ms Nikita Oswal

**Course Name and Code:** (Data Structures and Algorithms) (210252)

**Class and Division:** SE (B&C)

**Goals / objective of the method:** Mind Map Framework

**Topic covered:** All Unit Notes Syllabus.

**Description of method (8 – 10 lines):**

A Mind Map Framework is a visual tool designed to organize, structure, and represent information in a hierarchical and interconnected manner. It provides a central concept or idea as the starting point, with related ideas branching out in a tree-like structure. This framework is highly effective for brainstorming, planning, problem-solving, and learning.

**Benefits of the method:**

1. Visual representation makes it easier to remember and recall information.
2. Effective for group brainstorming sessions and sharing ideas.
3. Applicable in education, work, and personal development.

**For review and critique contact:** nik.jain235@gmail.com

**Action taken based on review and critique:**

Analysis of Feedback taken on the innovative teaching methods

We have designed a mind map specifically for students to help them visualize and organize their learning more effectively. This mind map simplifies complex topics by breaking them down into manageable sections, allowing students to grasp concepts more clearly. It promotes a structured yet creative approach to understanding and retaining information, making learning more interactive and engaging. By using this tool, students can better connect ideas, enhance their problem-solving skills, and improve overall academic performance.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Activity Based Learning

**Title of Innovation method:** Quiz(offline)

**Faculty / Inventor:** Ms Nikita Oswal

**Course Name and Code:** Fundamentals of Data Structure (410242)

**Class and Division:** SE

**Goals / objective of the method:** To understand the basic concepts of Data Structure

**Topic covered:** Basic concepts of FDS

**Description of method (8 – 10 lines):**

Reading information as a way of learning does have its uses. But reading information and then taking a quiz is much more effective. Forcing brain to retrieve data ensures that it becomes 'embedded' for use in the future. So, quizzes help to retain information. Quizzes can promote deeper engagement with the content, further the development of important learning skills, and provide teachers and students with feedback that promotes learning.

**Benefits of the method:**

A quiz is a quick and informal assessment of student knowledge. Quizzes are often used to briefly test a students' level of comprehension regarding course material, providing teachers with insights into student progress and any existing knowledge gaps.

**For review and critique contact:** [nik.jain235@gmail.com](mailto:nik.jain235@gmail.com)

**Action taken based on review and critique:**

Analysis of Feedback taken on the innovative teaching methods

1. Increase the number of quiz question.
2. Increase the difficulty level.
3. Add more brain teaser question.
4. Add code related questions.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Activity Based Learning

**Title of Innovation method:** Enhancing technology through Google Classroom

**Faculty / Inventor:** Mr. Rahul Salunkhe

**Course Name and Code:** Theory of Computation (310242)

**Class and Division:** TE (B)

**Goals / objective of the method:** To study abstract computing models to provide a formal connection between algorithmic problem solving and the theory of languages

**Topic covered:** Turning Machine

**Description of method (8 – 10 lines):**

Google Classroom has become an essential tool in modern education, offering a streamlined, digital environment for educators and students to work together effectively. Teachers can grade assignments directly on the platform and give feedback to students. Google Classroom automatically organizes assignments and grades, making it easy to track progress.

Teachers can create assignments, set deadlines, and distribute them digitally. Students can complete tasks and submit them through the platform.

**Benefits of the method:**

Google Classroom is accessible from any device with an internet connection—smartphones, tablets, and computers making it flexible for remote learning, hybrid classrooms, or on-the-go access to learning materials.

**For review and critique contact:** [rahul.salunkhe@dypatilef.com](mailto:rahul.salunkhe@dypatilef.com)

**Action taken based on Review and Critique:**

**Review:** Google Classroom has become a popular platform in education, particularly for remote, hybrid, and blended learning environments. Here's a breakdown of its features, strengths, and areas that could be improved based on user feedback

**Critique:**

Google Classroom is tightly integrated with Google Workspace tools (Docs, Sheets, Slides, Drive, etc.), allowing for seamless file sharing, document editing, and real-time collaboration. This integration is a major strength for educators and students who are already accustomed to Google's ecosystem.



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### **Innovations by the Faculty in Teaching and Learning**

**Category of Innovation method:** Technology Enhanced blended learning

**Title of Innovation method:** Use of YouTube Channel to understand the concept.

**Faculty / Inventor:** Mrs. Sarojini Naik

**Course Name and Code:** Microprocessor (210254)

**Class and Division:** SE (B&C)

**Goals / objective of the method:** The goal is to make learning process more effective relevant and enjoyable leading to higher achievement and better preparation for real world challenges. Also fostering skills that extend beyond academic knowledge.

**Topic covered:** Introduction of 80386

**Description of method (8 – 10 lines):**

The objective of this teaching method is to provide students with an in-depth understanding of the 80386 microprocessors with its architecture.

We followed following steps for explaining with YouTube videos.

- 1) Provided pre-video brief explanation.
- 2) High quality YouTube videos were selected based on relevant content.
- 3) Watching videos in segments taking small pauses.
- 4) Post video discussion was held to reinforce key concepts.
- 5) Quiz, assessments given and MCQ conducted to encourage deeper understanding of concept.
- 6) Students are encouraged to do further exploration

**Benefits of the method:**

- 1) Visual learning-The video provides visual explanation of concepts making it easier to understand.
- 2) Engagement-It gives student more engaged making learning process more interactive.
- 3) Flexible learning -Students can access the videos outside of class anywhere anytime.
- 4) Wide the range of content -YouTube offers a vast array of videos from different educators gives students multiple perspectives on the same topic

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