CREATING DYNAMIC CLASS – ASSIGNMENT 2

Subject : Strength of Materials I
Discipline : Civil Engineering
Class/Semester : II year / 3rd Semester
Faculty Name : Mr.G.Karthikeyan, Assistant Professor (SG)

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1.Activity to promote Intellectual Excitement

Experimental Learning

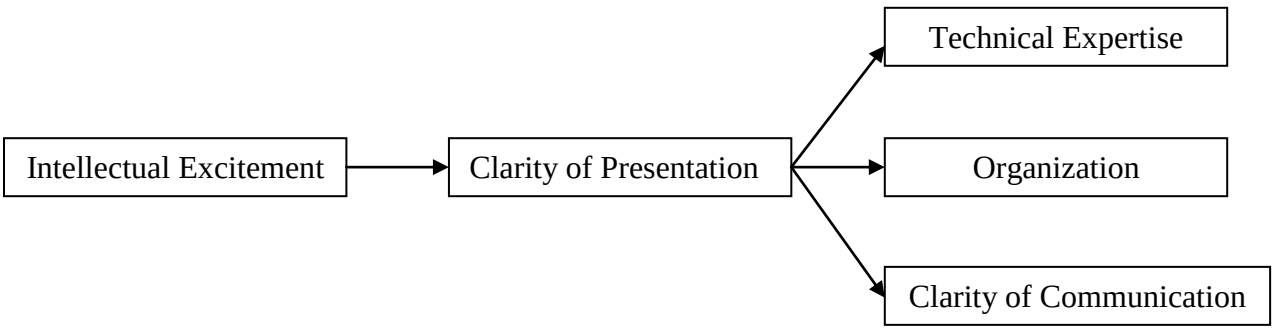
Topic : Torsion and springs
Learning objective : To apply torsion in circular shafts and helical springs
Learning outcome : Students will be able to apply basic equation of torsion in design of circular shafts and helical springs.

Design and Implementation of the activity for promoting Intellectual Excitement

Activity : Experimental Learning
Aim : To find the twisting moment and deflection of spring
Size : 4 Members per group
Time : 15 minutes

- In my lecture, last 15 minutes I have arranged Strength of Materials Laboratory visit for Experimental learning activity.
- Simple experiment is chosen for activity to learn the concepts easily.
- In first 5 minutes, I have explained to find the torque and deflection of spring using Torsion test.
- Students are arranged as a group of 4 members.
- Individual group practiced the experiment and produced the results in the last 10 minutes.

How does the activity meet IE?



Intellectual Excitement means teaching with energy and enthusiasm and presenting content in a clear and engaging way so that it is memorable.

Clarity of Presentation

Technical Expertise

- I have prepared the lecture using the following two **standard text books.**

1. Rajput.R.K. "Strength of Materials", S.Chand and Co, New Delhi, 2015.
2. Bansal. R.K. "Strength of Materials", Laxmi Publications Pvt. Ltd., New Delhi, 2010

- I have referred the online course video from **NPTEL.**

https://nptel.ac.in/courses/105/105/105105108/

- I have completed the online course Mechanics of Materials I from **Coursera – Georgia Tech** before handling the subject.
- I have organized and attended Anna University approved **Faculty Development Training Programme** on Strength of Materials I.
- Also I have worked as **Design Engineer** in this subject area.

Hence I have strong technical and practical knowledge of this subject for clear presentation to the students.

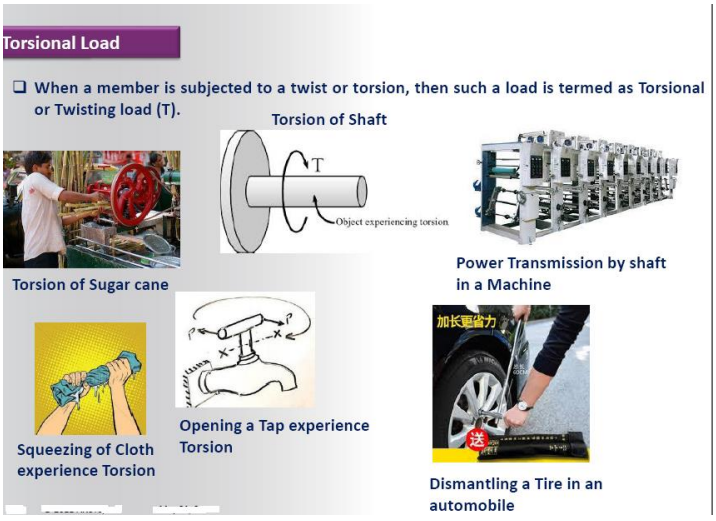
Organization

- I have prepared lecture from the above references.
- I have planned to deliver the topic innovatively by the way of connecting the topic with real world applications.

About the lecture:

Torsion – It is the twisting of an object due to an applied torque.

Application:

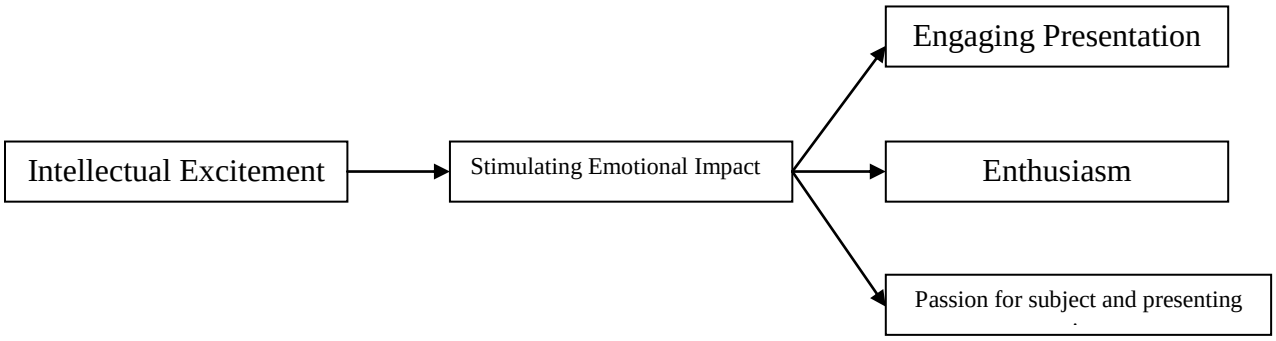


- I have derived the torsion equation and solved the application problems.
- To ease the derivation I have used **mind map technique** for memorize the steps.

Clarity of Communication

- I have demonstrated the topic in laboratory to find the torque in a given steel rod
- I have discussed the poll question about torsion for knowing the student understanding level.

Assessment of students' response to the activity for promoting IE



a) It's Engaging

- When performed effectively, this activity opens a spirit of **investigation, experimentation, curiosity, problem-solving** and **creativity** — all elements seen as fundamental to the process of experiential learning.
- This activity also encourages students to **take responsibility** for the discussion of their own learning.
- **Practical work makes them engaged** intellectually and emotionally.
- This activity is an excellent example of how experiential learning activities can help students or memorable content in a lesson.

b) It's create enthusiasm

- This activity will help teachers learn more about students.
- It helps students stay on track and own progress**,** further improving participation and interest**.**
- It will help the student for doing their project work.
- It will stimulate the learning process by keeping students interested in the content

c) Passion for subject

- The activity encourages them to explore their interest and how it might have a connection to the real world.
- Student can answer the following questions after performing activity.
  What will I learn?
  What will I solve?
  What will I create?
- The activity makes learning meaningful.
- I Show Them, Help Them and Let Them do the experiment to make passion to the subject

Finally I Developed Passionate Learners.

 Torsion experiment is demonstrated	 Spring experiment is demonstrated
 Students are performing in a group	 Students doubt is clarified
 Torsion experiment is demonstrated	 Torsion experiment is demonstrated

2.Strategy to promote Interpersonal Rapport

Strategy : **Student Mentor Record**
Objective : To develop harmonious understanding and good relationship with students
Outcome : Students will be able to feel their own interest and learning with faculty to increase their perceptions of the quality of the program.

Design and Implementation of the activity for promoting Interpersonal Rapport

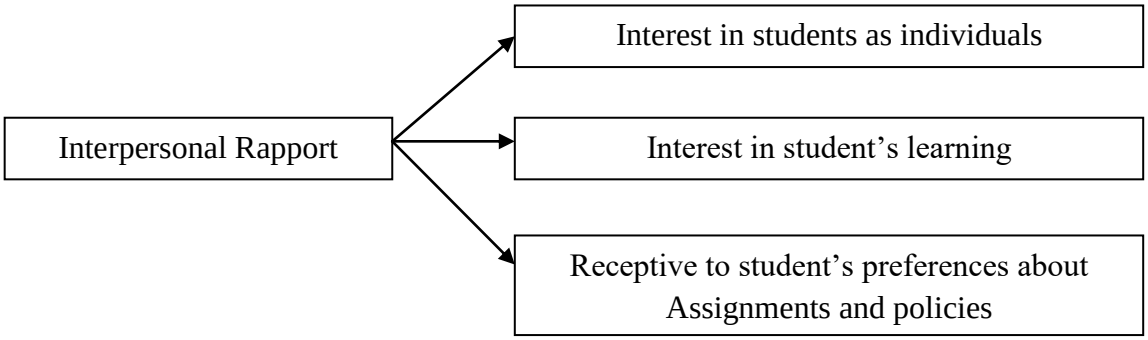
Strategy : Student Mentor Record
Aim : To share a special bond and good relationship with students
Size : Class strength
Time : 10 minutes/daily to each student

Implementation

- Student mentor record is issued to all students.
- Student's personal information, their academic history, their achievement, and counselling are recorded in that.
- I discussed about their family, their hobbies and their problems for developing positive environment with them.

Plan

- Already this strategy is followed in my institution. With that I have a plan to add some more information for better understanding of students.
- Daily I will allot 10 minutes to each student.
- I will ask students to come after college time for mentoring.



Interpersonal Rapport

It is the process of connecting relationship with students to create a positive environment.

Interest in students as individuals

To create interest in students as individuals,

- I asked students write out their expectations for the course and their own goals for learning.
- I planned variety in methods of presentation every class.
- I shared my philosophy of teaching with my students.
- I formed a student panel to present alternative views of the same concept.
- I told about my current research interests and how I got there from my own beginnings in the discipline.

From this, my students will see the enthusiasm that I have in my subject and my love of learning.

Interest in student's learning

To create interest in student's learning,

- I allowed students to demonstrate progress in learning: summary quiz over the day's work, a written reaction to the day's material.
- I used non-graded feedback to let students know how they are doing
- I rewarded behavior as praise, stars, honor roll and personal note.
- I used multiple examples, in multiple media, to illustrate key points and important concepts.
- I made appointments with all students (individually or in small groups).
- I used task groups to accomplish specific objectives.
- I graded quizzes and exercises in class as a learning tool.
- I encouraged students to bring current news items to class which relate to the subject matter and post these on a bulletin board nearby.

Receptive to student's preferences about assignments and policies

- I have to aware of students preferences while giving activity for better rapport.

- I set up a buddy system/social media group. So students can contact each other about assignments and coursework.
- I have to build student friendly environment.
- I will create student receptive policy inside the class to follow.

Assessment of students' response to the strategy for promoting IR

- Their learning skill is increased
- They ready to share any problems without hesitation with me
- Their own interest is revealed
- They are living in a positive environment
- They developed their interpersonal skill
- Their engagement in subject is improved