| | Jai Sri Gurudev | |
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2025)

TITLE OF INNOVATION: THINK PAIR SHARE

COURSE FACULTY: Dr.S.BHARGAVI

DESIGNATION: PROFESSOR

COURSE NAME & CODE: COMPUTER AND NETWORK SECURITY(BEC613A)

SEMESTER & SECTION: 7th A

OBJECTIVE OF THE METHOD: TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY

TOPIC COVERED: "ACTIVE AND PASSIVE ATTACKS"

CONDUCTION DATE: 26.08.2025

DESCRIPTION OF THE METHOD:

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Think-Pair-Share (TPS) is a cooperative learning activity that can work in varied size classrooms and in any subject. Instructors pose a question, students first THINK to themselves prior to being instructed to discuss their response with a person sitting near them (PAIR).

Think-pair-share is a technique that encourages and allows for individual thinking, collaboration, and presentation in the same activity. Students must first answer a prompt on their own, then come together in pairs or small groups, then share their discussion and decision with the class. Discussing an answer first with a partner before sharing maximizes participation, and helps to focus attention on the prompt given. Using the think-pair-share technique allows students time for individual reflection, thinking, and processing new

information before they may be influenced by other students' answers. This process also teaches students how to explain their thoughts first to a peer, and then to a larger audience (the entire class).

Faculty explains the technique to the students before beginning the exercise: describe the purpose, set discussion guidelines and time limits, and model the strategy to ensure that students know what is expected of them.

Step 1: Think

Begin with a specific question, and give students time to individually think about an answer, and document their responses on their own. Students can be given 1-3 minutes for this part of the exercise.

Step 2: Pair

Students now get into pairs. Ask the students to share what they came up with, with their partners and discuss. This part of the activity can take at least 5 minutes.

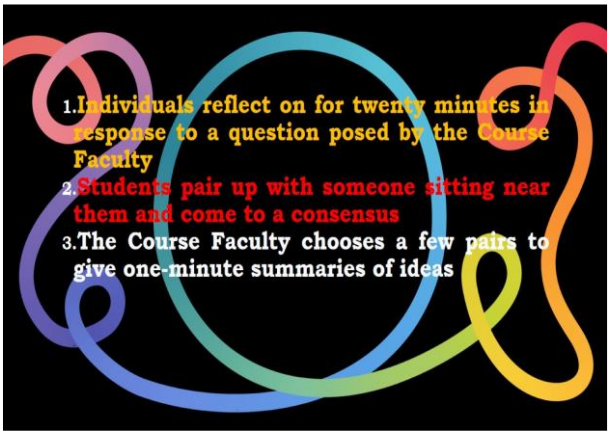
Step 3: Share

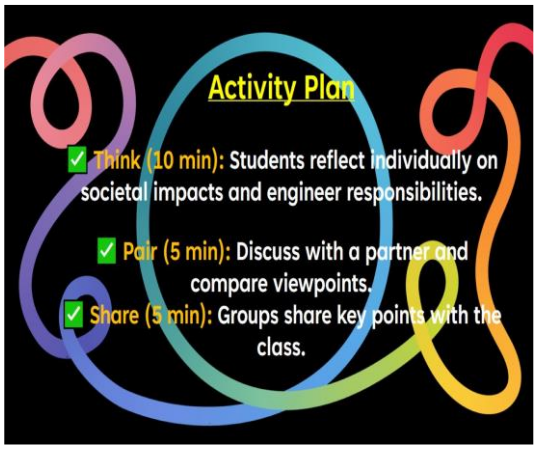
For this part, come back together as a class and have a whole class discussion. We can either choose to have one person from each pair share with the class, or the discussion can be more open. Students can also share with the class what their partner said.

BENEFITS OF THE METHOD:

- **It enhances students' critical thinking skills, improves listening and reading comprehension**
- **It helps students to get collaboration and presentation skills.**
- **It benefits the students who are typically shy may feel more comfortable sharing with the class after sharing with a partner,**
- **It promotes students who are outspoken to get benefit from first listening to others before sharing their own opinion.**
- **It helps students to think individually about a topic or answer to a question.**
- **It teaches students to share ideas with classmates and builds oral communication skills.**
- **It helps focus attention and engage students in comprehending the reading material.**

ACTIVITY DETAILS:





Topic:

Compare Active Attacks

&

Passive Attacks?

Reflections: **Well accepted**

AKSHITHA M & CHANDINI T D won the I prize


Compare
Active Attacks
&
Passive Attacks
GPS Map Camera
Kothanoor, Karnataka, India
9pwh+3hf, Kothanoor, Karnataka 562103, India
Lat 13.395213° Long 77.729026°
26/08/2025 10:52 AM GMT +05:30
Google


Compare
Active Attacks
&
Passive Attacks
GPS Map Camera
Kothanoor, Karnataka, India
9pwh+3hf, Kothanoor, Karnataka 562103, India
Lat 13.395198° Long 77.728987°
26/08/2025 10:52 AM GMT +05:30
Google


Compare
Active Attacks
&
Passive Attacks
GPS Map Camera
Kothanoor, Karnataka, India
9pwh+3hf, Kothanoor, Karnataka 562103, India
Lat 13.395112° Long 77.72872°
26/08/2025 10:54 AM GMT +05:30
Google


Compare
Active Attacks
&
Passive Attacks
GPS Map Camera
Kothanoor, Karnataka, India
9pwh+3hf, Kothanoor, Karnataka 562103, India
Lat 13.395207° Long 77.729025°
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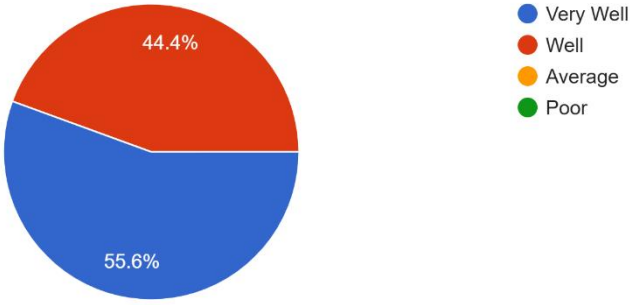
STUDENTS FEEDBACK:

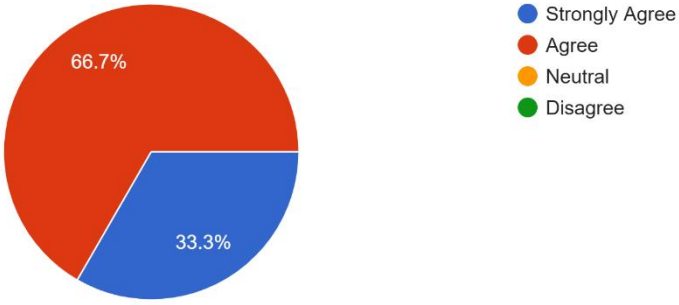
How well did you understand the Security Attacks after this activity?

18 responses



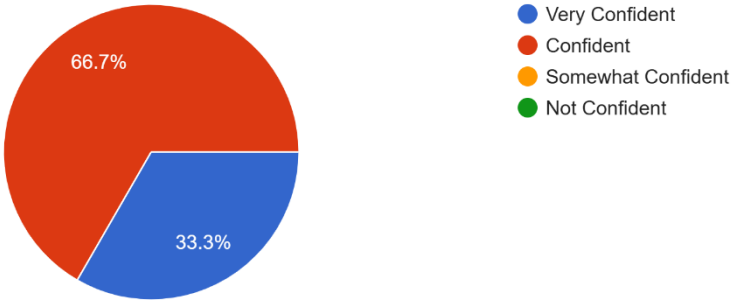
Did the Think-Pair-Share activity help you discuss and learn from your peers?

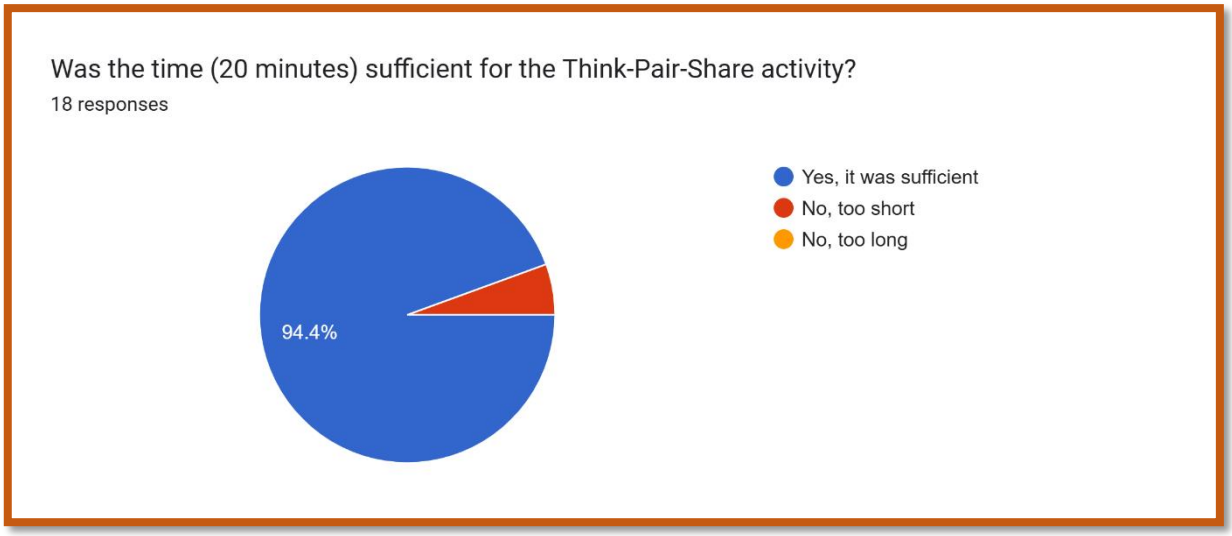
18 responses

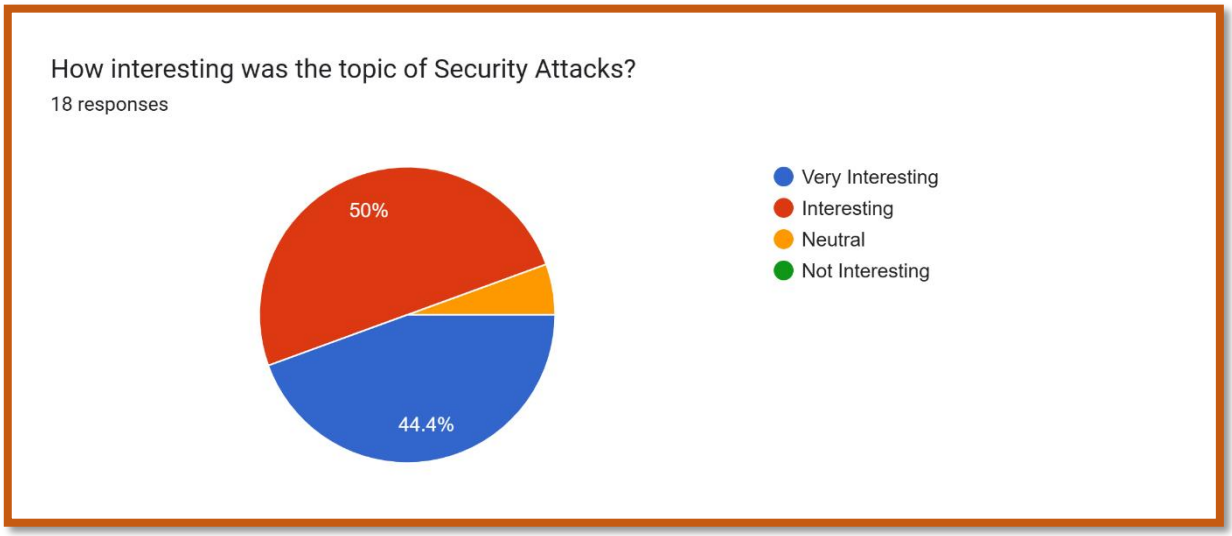


How confident are you in explaining the Passive attacks & Active attacks with examples and comparison?

18 responses







Signature of Course Faculty

Signature of HOD

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2025)

TITLE OF INNOVATION:	**QUIZ**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**COMPUTER AND NETWORK SECURITY(BEC613A)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"MALICIOUS LOGIC & VULNERABILITY ANALYSIS"**
CONDUCTION DATE:	**06.10.2025**

DESCRIPTION OF THE METHOD:

A quiz refers to a fast and information evaluation of the knowledge of students. Teachers often give a quiz within a learning environment to assess how the learners understand a concept. Therefore, it serves as a process to understand students' insight into the subject matter. In the process, the teachers can detect any possible knowledge gaps. quizzes can help teachers assess the effectiveness of their instruction, as well as student understanding of the concepts taught.

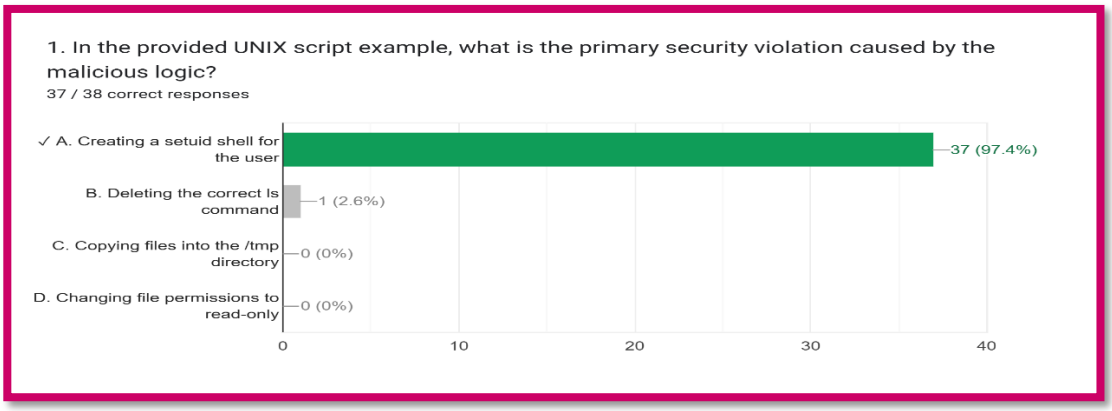
In general, a quiz tests the knowledge of the students or learners in a class in a short period. The questionnaire usually consists of minimum ten questions. The format of the quiz may vary. It might include MCQs, fill in the blanks, short answers, and true or false. Compared to traditional exams, they are much shorter.

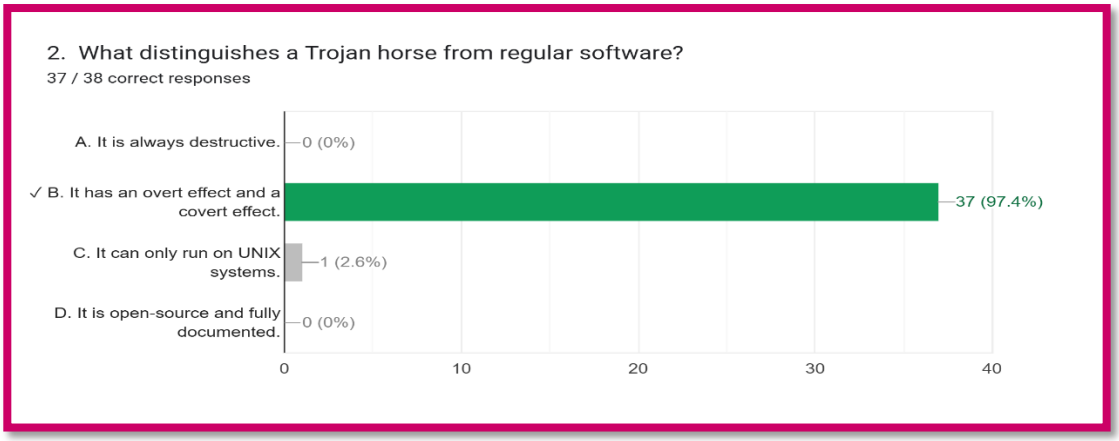
BENEFITS OF THE METHOD:

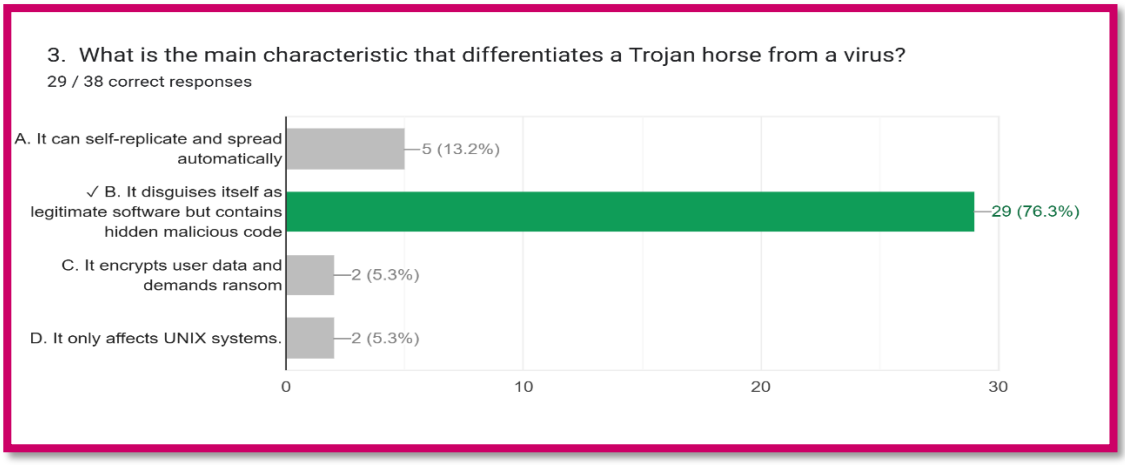
- **Students tend to read the material.**

- **Students show up for class on time since the quiz always comes first.**
- **Students are placed in the right attitude for learning.**
- **Students feel more confident to discuss the material.**
- **Students raise their grades by simply reading the material.**
- **Students have a healthy debate amongst participants in order to learn from each other**

ACTIVITY DETAILS:

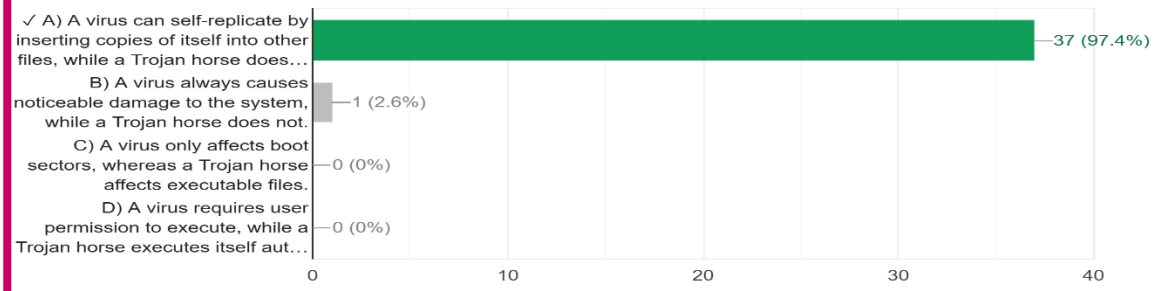






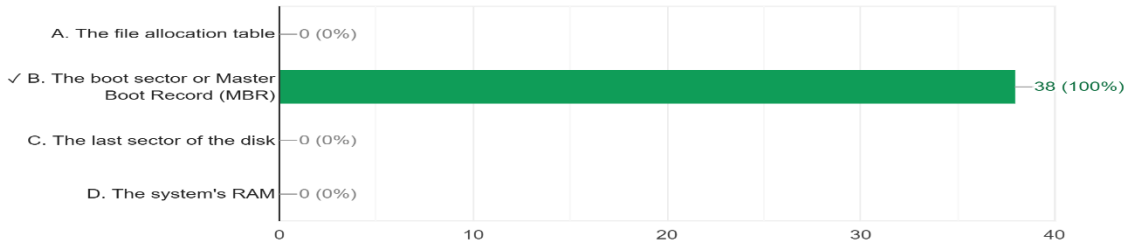
4. What is the primary characteristic that differentiates a computer virus from a Trojan horse?

37 / 38 correct responses



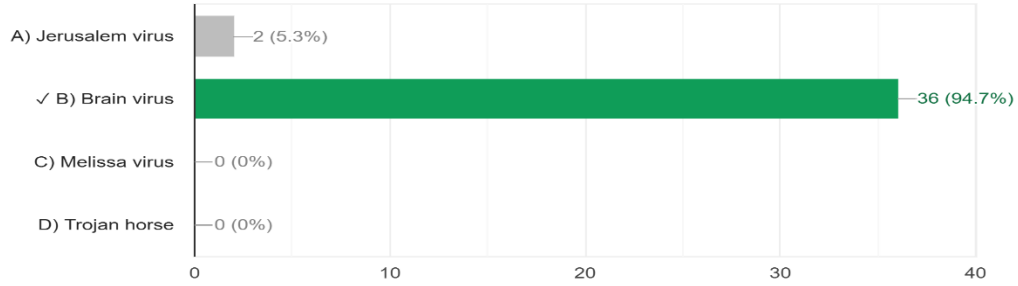
5. What part of a disk does a boot sector virus infect?

38 / 38 correct responses



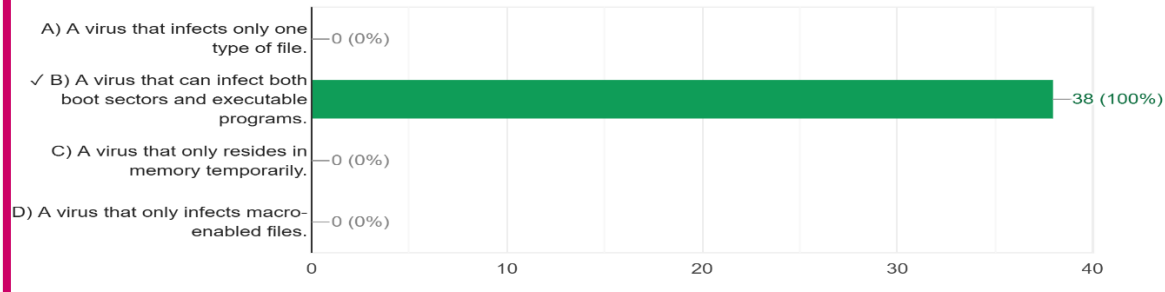
6. Which of the following viruses is an example of a boot sector infector?

36 / 38 correct responses



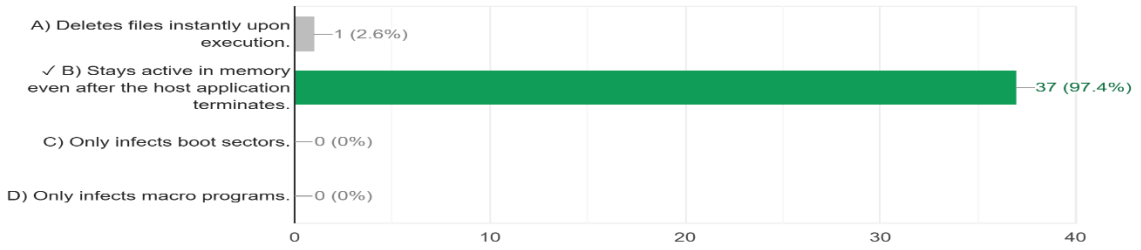
7. What is a multipartite virus?

38 / 38 correct responses



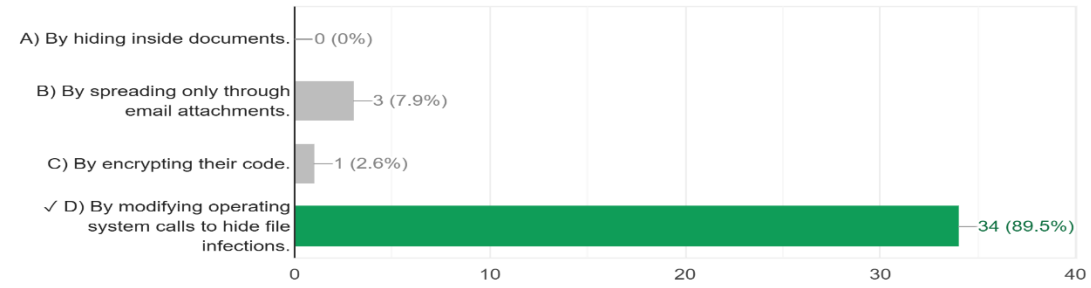
8. What does a TSR (Terminate and Stay Resident) virus do?

37 / 38 correct responses



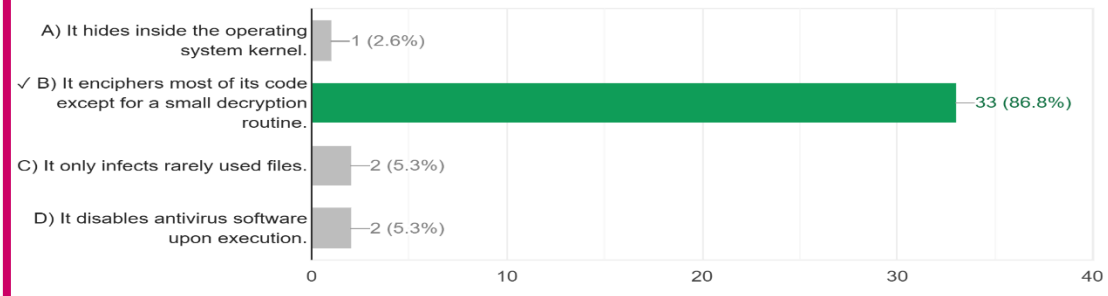
9. How do stealth viruses avoid detection?

34 / 38 correct responses



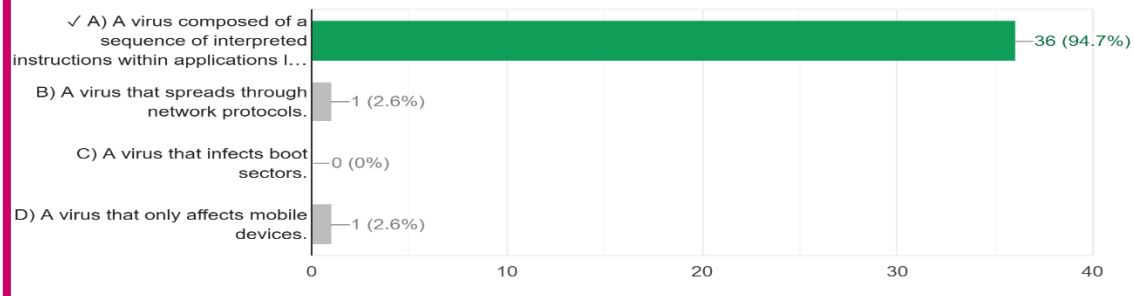
10. What makes an encrypted virus difficult to detect?

33 / 38 correct responses



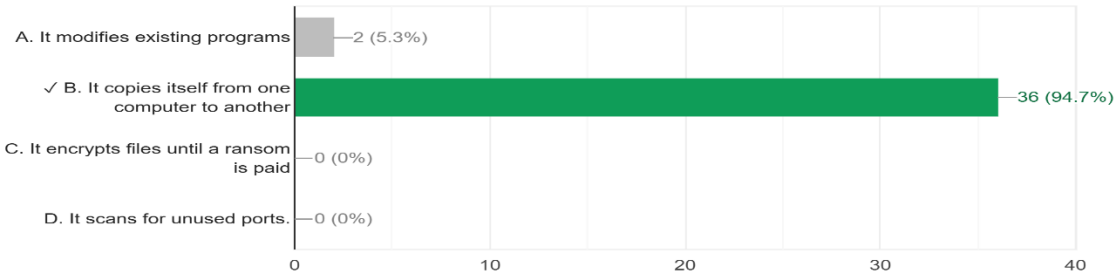
11. What is a macro virus?

36 / 38 correct responses



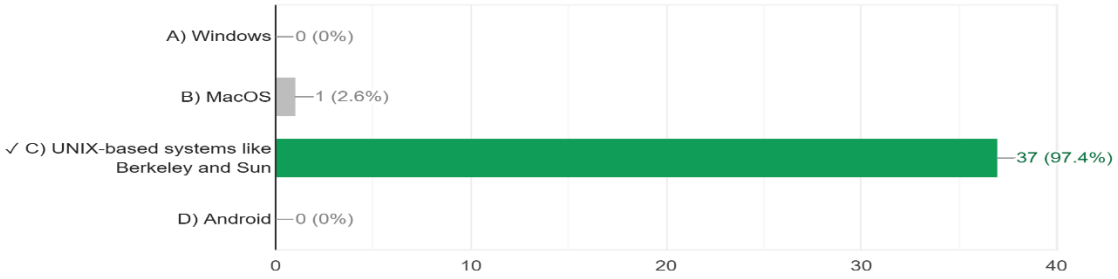
12. What is the primary characteristic of a computer worm?

36 / 38 correct responses



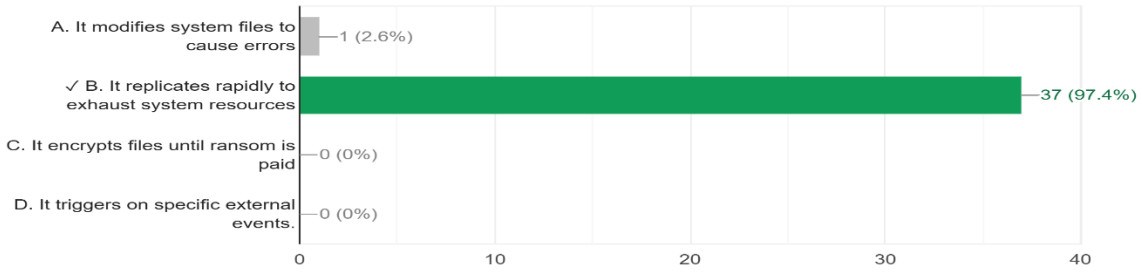
13. The 1988 Internet worm primarily targeted which type of operating systems?

37 / 38 correct responses



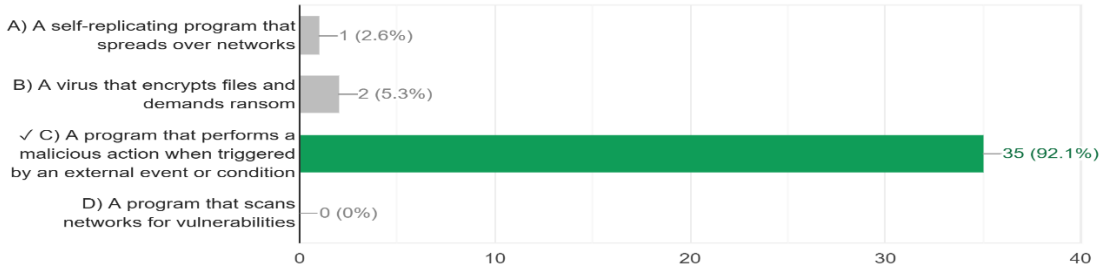
14. What is the primary effect of a 'bacterium' or 'rabbit' program?

37 / 38 correct responses



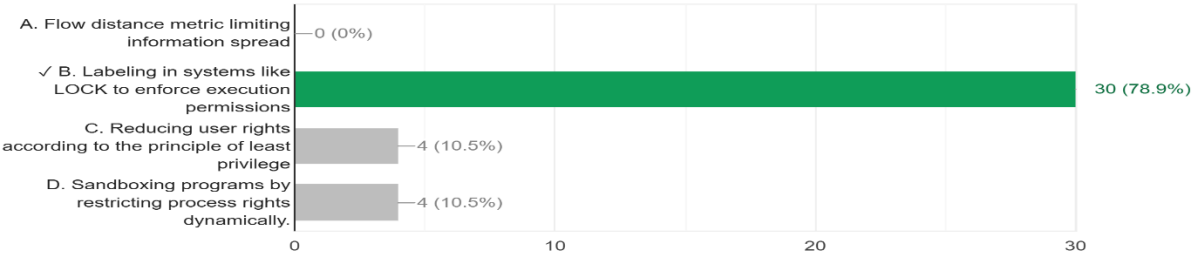
15. What is a logic bomb in the context of computer security?

35 / 38 correct responses



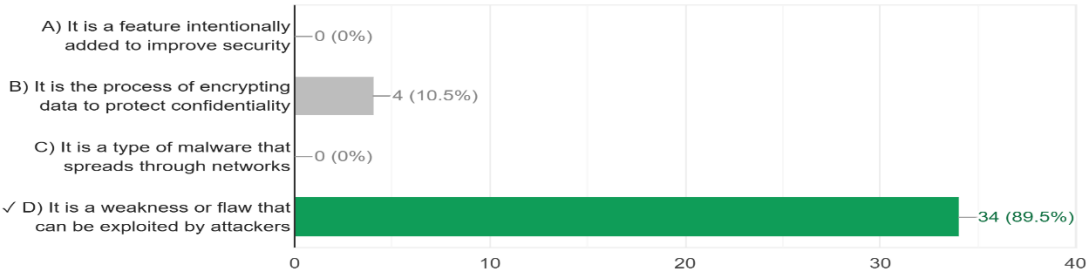
16. Which defense mechanism treats programs as data until certified to be executable, thereby preventing virus infection by separating data and instructions?

30 / 38 correct responses



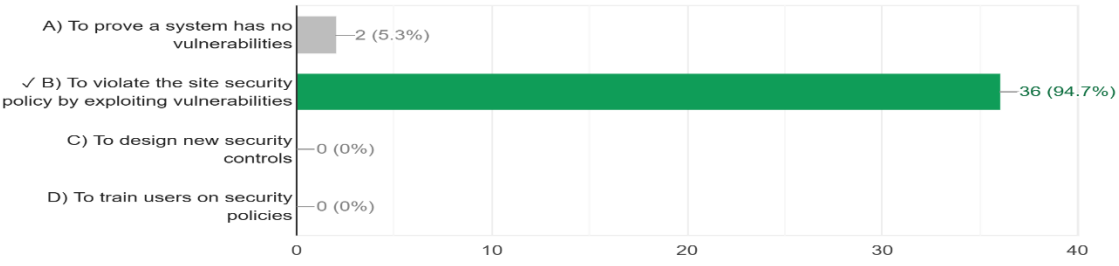
17. What is a key characteristic of a vulnerability in a computer system?

34 / 38 correct responses



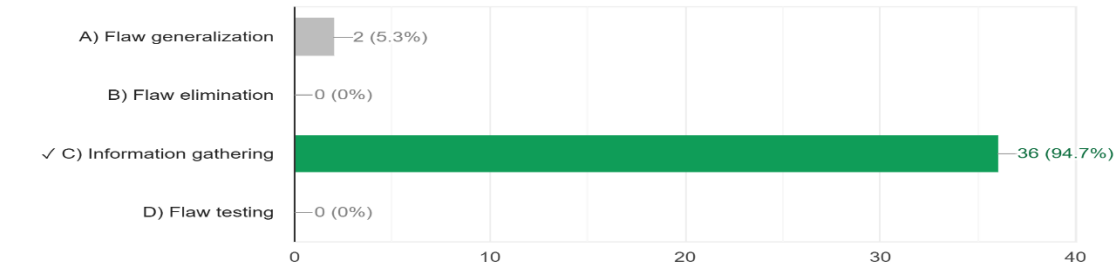
18. What is the primary goal of a penetration study?

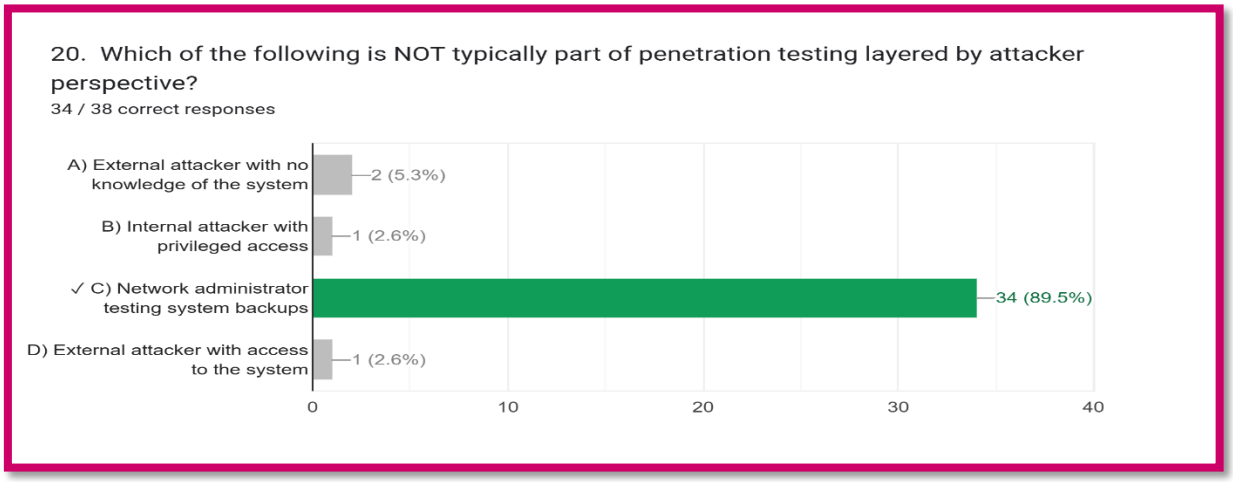
36 / 38 correct responses



19. In the Flaw Hypothesis Methodology, what is the first step?

36 / 38 correct responses





QUIZ SCORES:

Email	Score / 20
chandinitdchandinitd@gmail.com	19
hithadayanand@gmail.com	20
harshithashashikumar99@gmail.com	20
bhavyasa9945@gmail.com	20
bhoomikagowdajan5@gmail.com	20
gunashreeds29@gmail.com	20
ychandushree@gmail.com	18
sabaanbar368@gmail.com	19
harshithan827@gmail.com	20
chandanarchandana12@gmail.com	20
hamsakshamsaks227@gmail.com	10
ambikayash126@gmail.com	18
anuanushree547@gmail.com	19

Email	Score / 20
akshuakshaya848@gmail.com	20
bm9180496@gmail.com	16
druthiga@gmail.com	20
mayesha27970@gmail.com	16
akshim44@gmail.com	20
gg9674432@gmail.com	20
ddachhu53@gmail.com	20
ananyaamananyaam@gmail.com	19
goolephot9@gmail.com	19
anilkumarkkpalli13@gmail.com	19
dhanushmohan1982@gmail.com	17
sreevidyasreevidya38@gmail.com	7
harshithkumar438@gmail.com	20
bhumikasurpur@gmail.com	19
srinivasareddyhcs803@gmail.com	19
hemanthkumar130511@gmail.com	20
govardhanvkgokul@gmail.com	20
bhuvangowdaa029@gmail.com	20
chandangurs@gmail.com	19
deepika12022005@gmail.com	15

Email	Score / 20
ayushmanjunathas@gmail.com	20
shekharchandru.2003@gmail.com	20
bujjimpl2005@gmail.com	19
hemanthkumarmp534@gmail.com	20

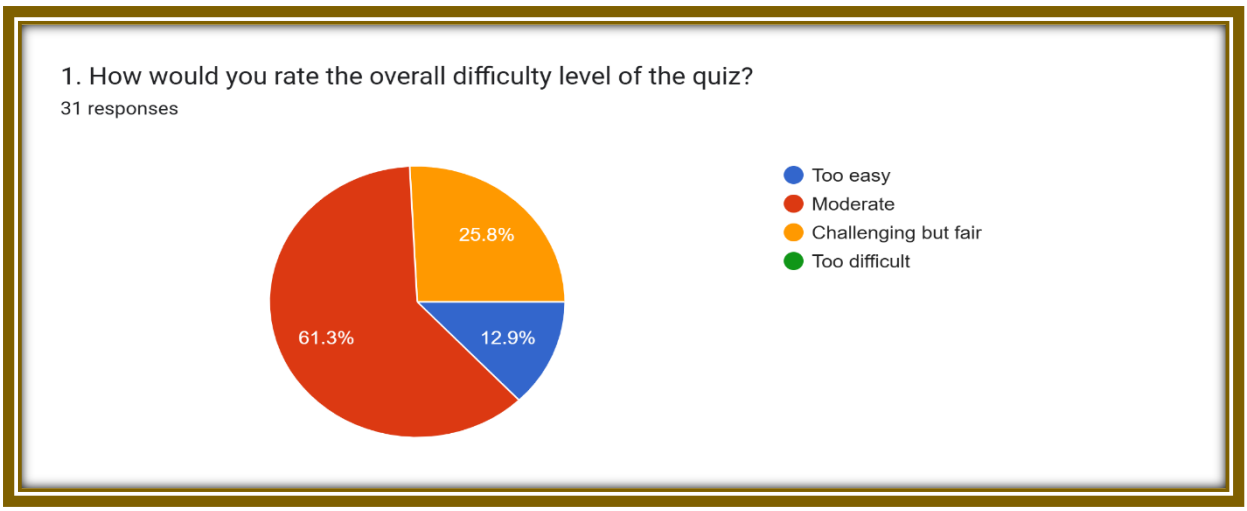
Topic: "MALICIOUS LOGIC & VULNERABILITY ANALYSIS"

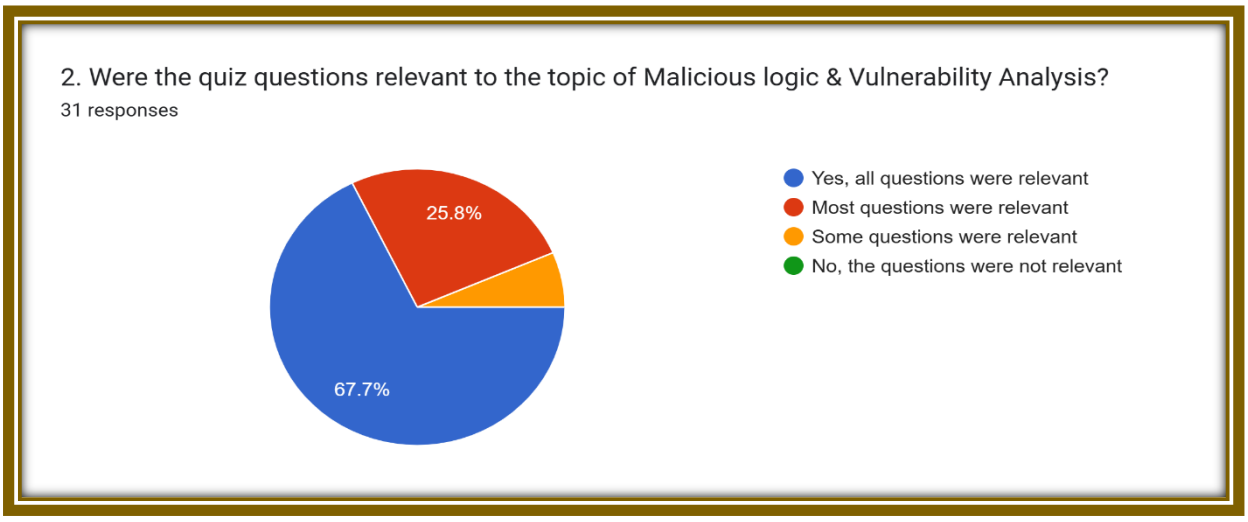
Reflections:

- Well, accepted
- Time taken is 20min
- OnlineQuiz conducted
- Given 20 questions to answer

AKSHAYA K S, BHOOMIKA G, BHUMIKA, CHANDANA & GUNASHREE D S won the I Prize

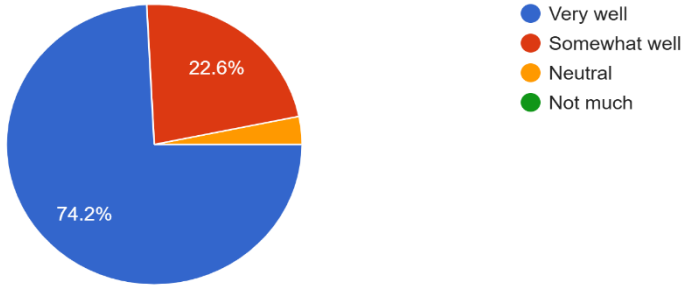
STUDENTS FEEDBACK:





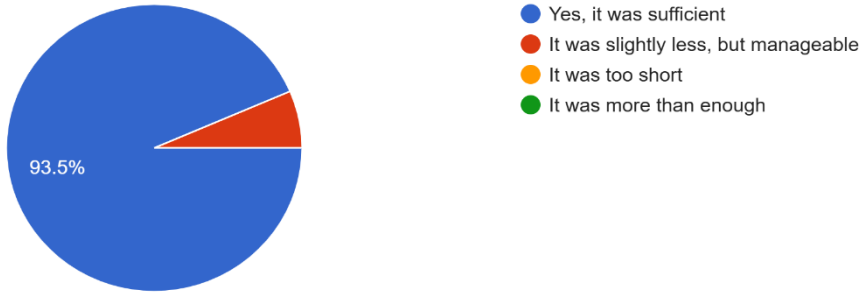
3. How well did the quiz help in reinforcing your understanding of Malicious logic & Vulnerability Analysis ?

31 responses



4. Was the time allotted for the quiz sufficient?

31 responses



5. Would you like more innovative activities like this quiz to be conducted in class?

31 responses

Signature of Course Faculty Signature of HOD

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2025)

TITLE OF INNOVATION: FLIPPED CLASSROOM

COURSE FACULTY: Dr.S.BHARGAVI

DESIGNATION: PROFESSOR

COURSE NAME & CODE: COMPUTER AND NETWORK SECURITY(BEC613A)

SEMESTER & SECTION: 7th A

OBJECTIVE OF THE METHOD: TO CREATE INTERACTIVE LEARNING AMONG STUDENTS.

TOPIC COVERED: "MODELS AND ARCHITECTURE OF IDS"

CONDUCTION DATE: 13.10.2025

DESCRIPTION OF THE METHOD:

The Flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. The term is widely used to describe almost any class structure that provides pre-recorded lectures followed by in-class exercises. The flipped classroom is an easy model. A means to INCREASE interaction and personalized contact time between students and teachers. An environment where students take responsibility for their own learning.

Flipped classrooms provide a good alternative teaching platform. Teacher provides the content to the students in form of videos, references to websites, digital content, etc. The students go through the content in a given time frame. The learners are asked to go through a few lecture videos that create the platform for discussion in the next

class. The class room is reserved for discussions on the topic and to enhance in-depth understanding of the topic, by the students. Classroom is open for discussions, where the topics are explored further, with students contributing significantly to the discussions.

This method adds a new element to help students learn with each other. The class starts with a student explaining the concept covered before class. In a flipped classroom, the teacher does not give direct instruction but provides all the help and material for students to present their work. The flipped class creates a learning space that students can explore.

BENEFITS OF THE METHOD:

- **The students will be able to learn at their own pace with more one-to-one interaction between teacher and student.**
- **This method provides more collaboration time for students. Moreover, flipped classroom changes the traditional learning culture into a learner-centered class.**
- **It helps the instructor to change from the conventional mode of teaching to newer modes, which capture the interest of the students and hold their attention.**
- **Students are given equal opportunity to share their view and ideas.**
- **Students can have prior preparation for the class.**

KEY ELEMENTS:

- **Arrange for an opportunity for students to gain first exposure prior to class.**
- **Offer an incentive for students to prepare for class.**
- **Provide a mechanism to assess student understanding**
- **Run in-class activities that focus on higher level cognitive activities.**

ACTIVITY DETAILS:

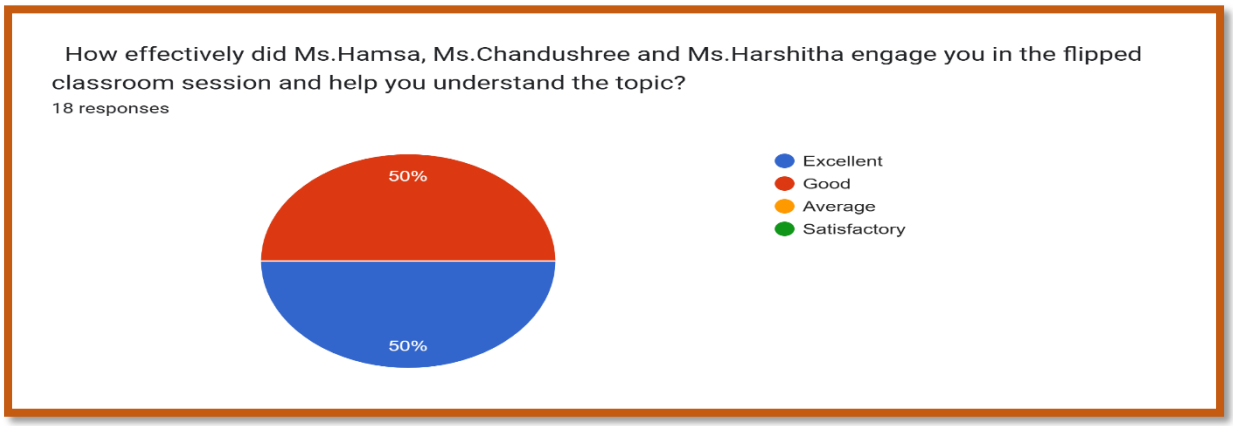
Topic: "MODELS AND ARCHITECTURE OF IDS"

Reflections: **Well accepted**

- **Time taken is 60min**
- **Seminar conducted**
- **Given them two questions to write**

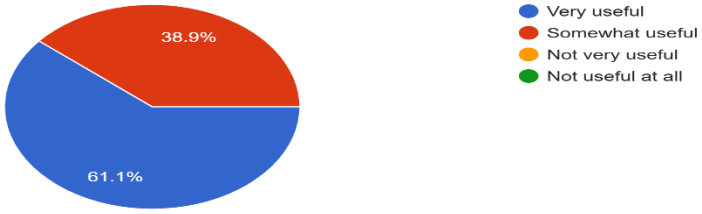
HAMSA K S, CHANDU SHREE Y C & HARSHITHA given the Seminar

STUDENTS FEEDBACK:



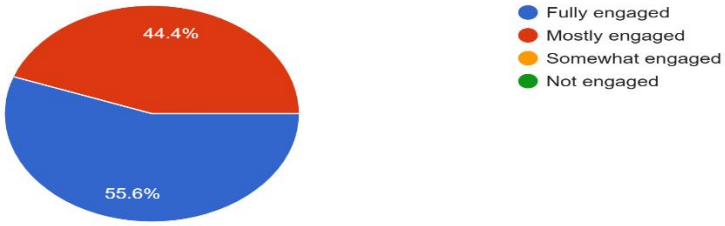
How useful was the pre-class material in helping you understand the topic before the class session?

18 responses



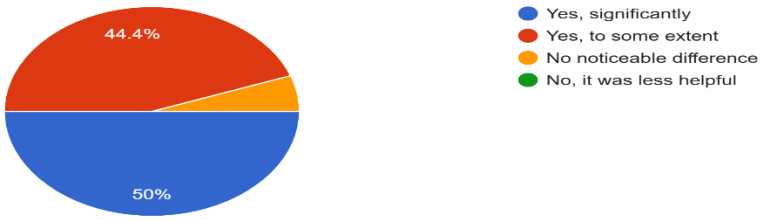
How engaged did you feel during the in-class flipped activity?

18 responses



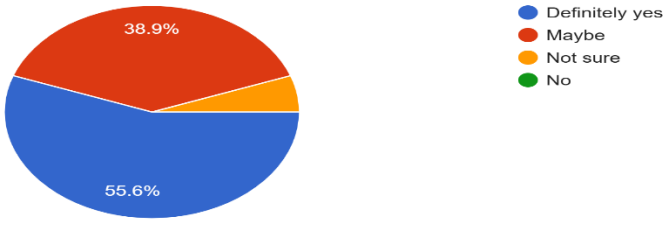
Did the flipped class approach help improve your understanding of the topic compared to traditional lectures?

18 responses



Would you like to have more flipped classroom sessions in the future?

18 responses



Signature of Course Faculty

Signature of HOD

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2025)

TITLE OF INNOVATION:	**THINK PAIR SHARE**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION (BEC613A)**
SEMESTER & SECTION:	**6th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"MULTIMEDIA COMMUNICATION TECHNOLOGIES"**
CONDUCTION DATE:	**05.03.2025**

DESCRIPTION OF THE METHOD:

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Think-Pair-Share (TPS) is a cooperative learning activity that can work in varied size classrooms and in any subject. Instructors pose a question, students first THINK to themselves prior to being instructed to discuss their response with a person sitting near them (PAIR).

Think-pair-share is a technique that encourages and allows for individual thinking, collaboration, and presentation in the same activity. Students must first answer a prompt on their own, then come together in pairs or small groups, then share their discussion and decision with the class. Discussing an answer first with a partner before sharing maximizes participation, and helps to focus attention on the prompt given. Using the think-pair-share technique allows students time for individual reflection, thinking, and processing new

information before they may be influenced by other students' answers. This process also teaches students how to explain their thoughts first to a peer, and then to a larger audience (the entire class).

Faculty explains the technique to the students before beginning the exercise: describe the purpose, set discussion guidelines and time limits, and model the strategy to ensure that students know what is expected of them.

Step 1: Think

Begin with a specific question, and give students time to individually think about an answer, and document their responses on their own. Students can be given 1-3 minutes for this part of the exercise.

Step 2: Pair

Students now get into pairs. Ask the students to share what they came up with, with their partners and discuss. This part of the activity can take at least 5 minutes.

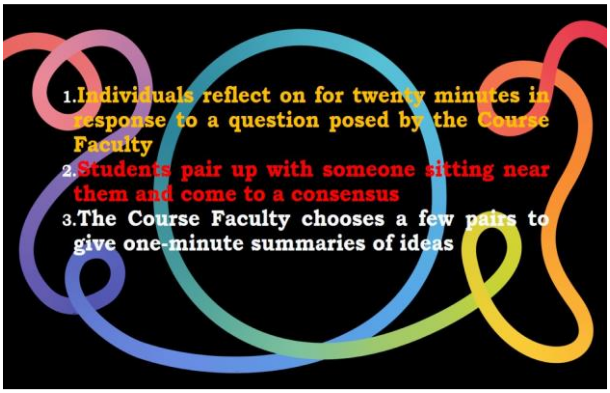
Step 3: Share

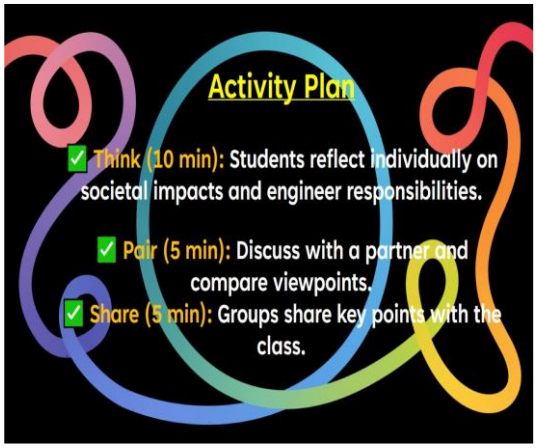
For this part, come back together as a class and have a whole class discussion. We can either choose to have one person from each pair share with the class, or the discussion can be more open. Students can also share with the class what their partner said.

BENEFITS OF THE METHOD:

- **It enhances students' critical thinking skills, improves listening and reading comprehension**
- **It helps students to get collaboration and presentation skills.**
- **It benefits the students who are typically shy may feel more comfortable sharing with the class after sharing with a partner,**
- **It promotes students who are outspoken to get benefit from first listening to others before sharing their own opinion.**
- **It helps students to think individually about a topic or answer to a question.**
- **It teaches students to share ideas with classmates and builds oral communication skills.**
- **It helps focus attention and engage students in comprehending the reading material.**

ACTIVITY DETAILS:



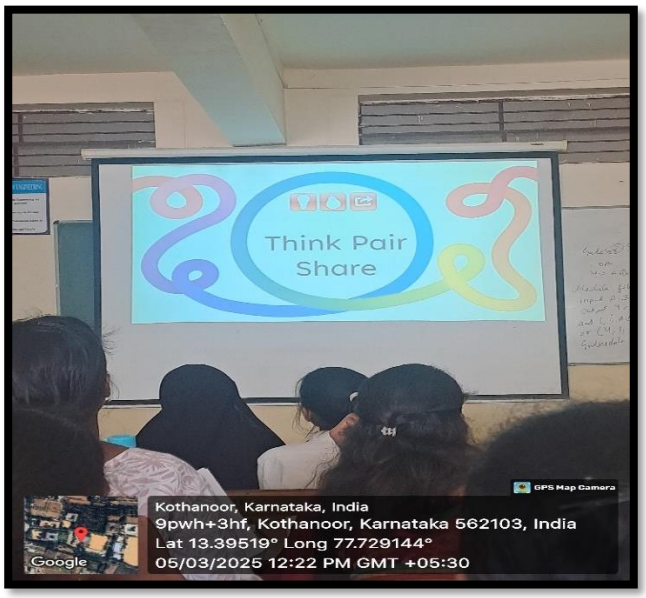


Topic:

"Discuss how multimedia communication technologies (like social media, video conferencing, and online streaming) impact society. What are the responsibilities of engineers in ensuring these technologies are accessible, safe, and beneficial to all?"

Reflections: Well accepted

CHANDU SHREE & CHANDANA V R the I prize


Think Pair Share
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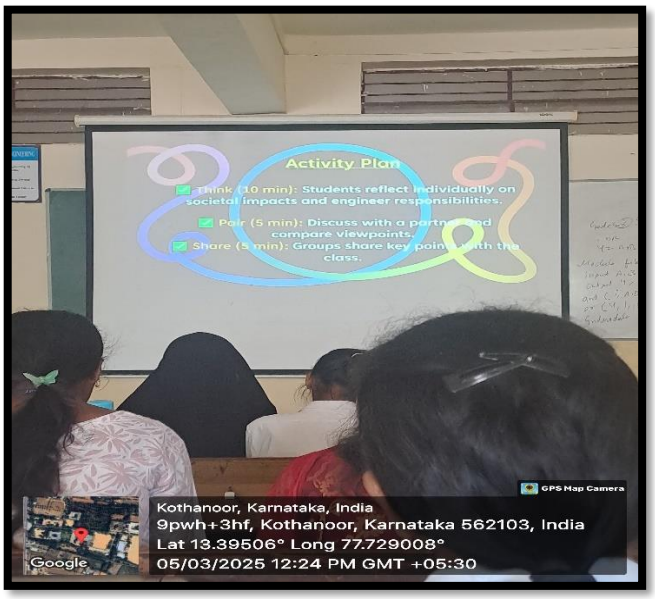
Activity Plan
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Thank You
EDUCATION IS NOT ABOUT PASSING AN EXAMINATION. EDUCATION IS ABOUT LEARNING
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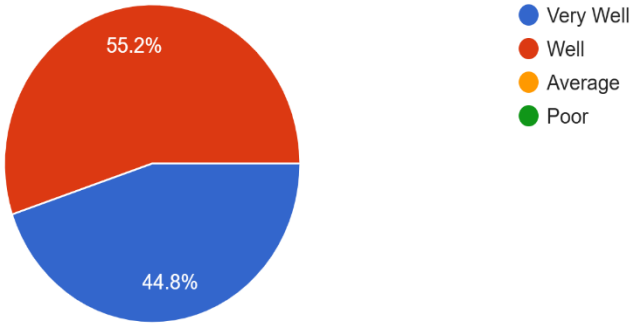
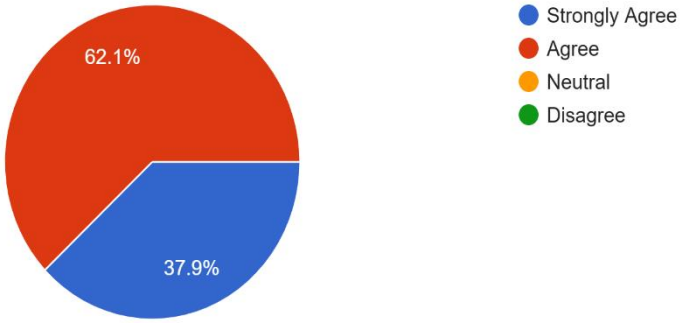
How well did you understand the social impact of multimedia communication after this activity?

29 responses



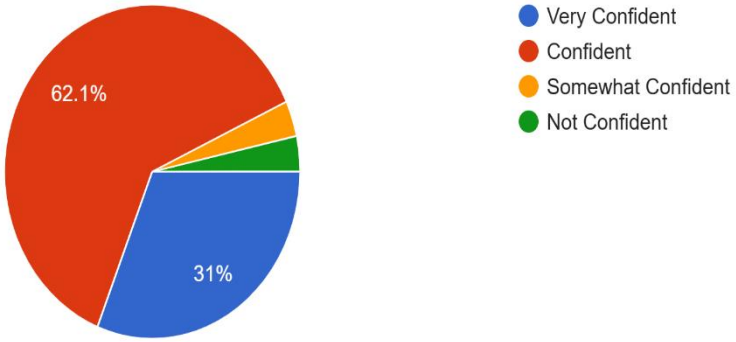
Did the Think-Pair-Share activity help you discuss and learn from your peers?

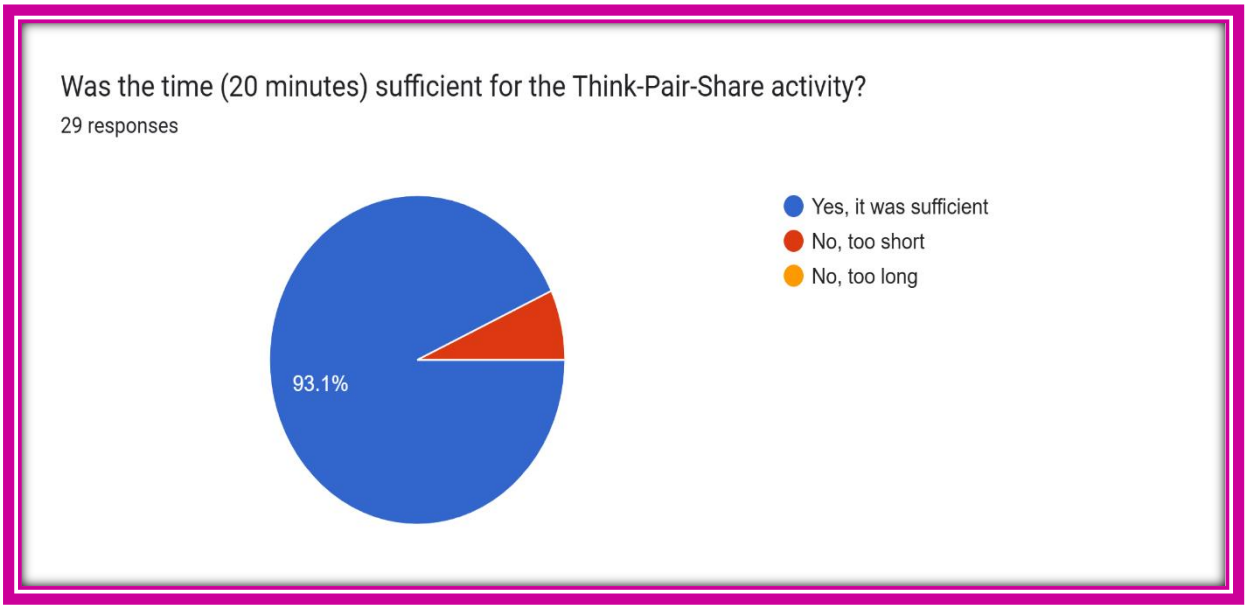
29 responses

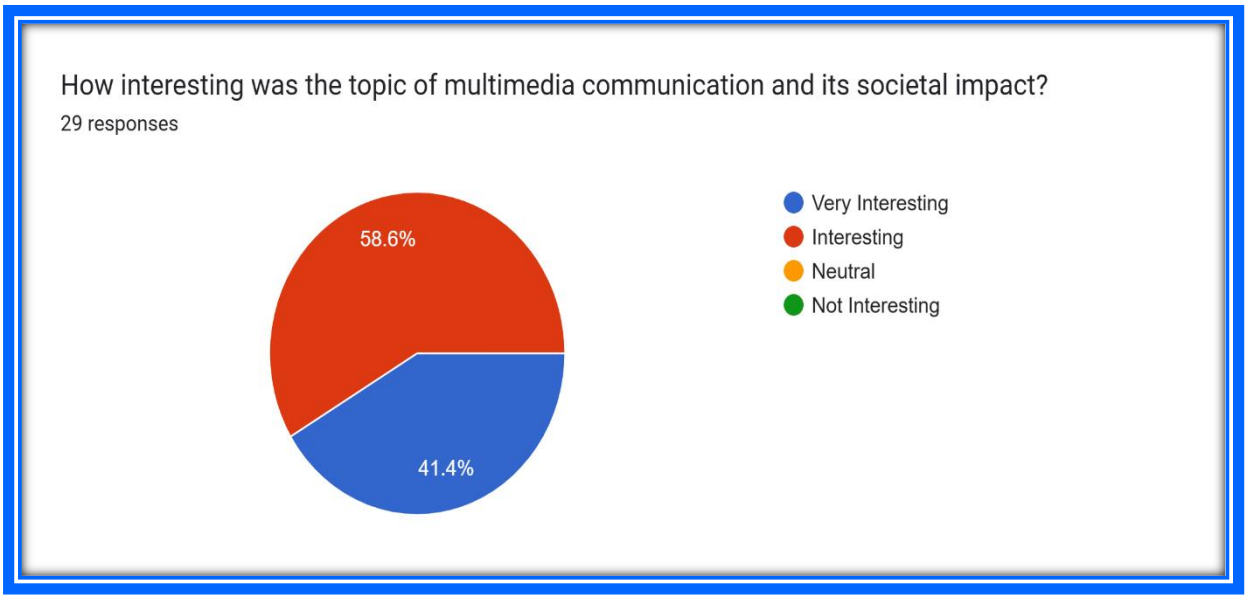


How confident are you in explaining the responsibilities of engineers in multimedia system design?

29 responses







Signature of Course Faculty Signature of HOD

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2025)

TITLE OF INNOVATION:	**QUIZ**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION(BEC613A)**
SEMESTER & SECTION:	**6th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"MULTIMEDIA INFORMATION REPRESENTATION"**
CONDUCTION DATE:	**27.03.2025**

DESCRIPTION OF THE METHOD:

A quiz refers to a fast and information evaluation of the knowledge of students. Teachers often give a quiz within a learning environment to assess how the learners understand a concept. Therefore, it serves as a process to understand students' insight into the subject matter. In the process, the teachers can detect any possible knowledge gaps. quizzes can help teachers assess the effectiveness of their instruction, as well as student understanding of the concepts taught.

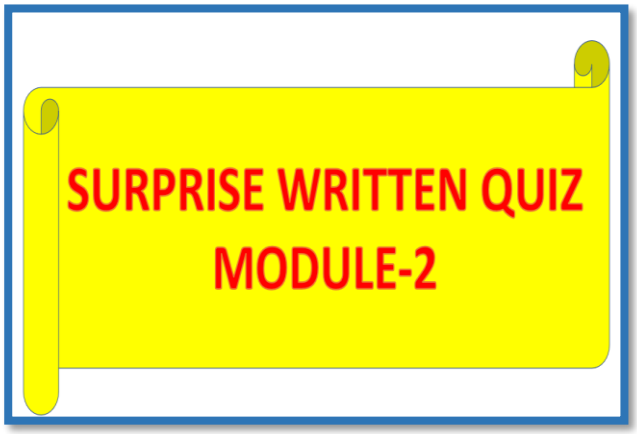
In general, a quiz tests the knowledge of the students or learners in a class in a short period. The questionnaire usually consists of minimum ten questions. The format of the quiz may vary. It might include MCQs, fill in the blanks, short answers, and true or false. Compared to traditional exams, they are much shorter.

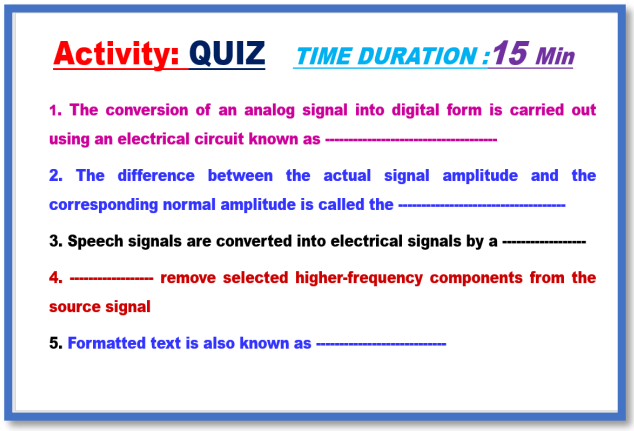
BENEFITS OF THE METHOD:

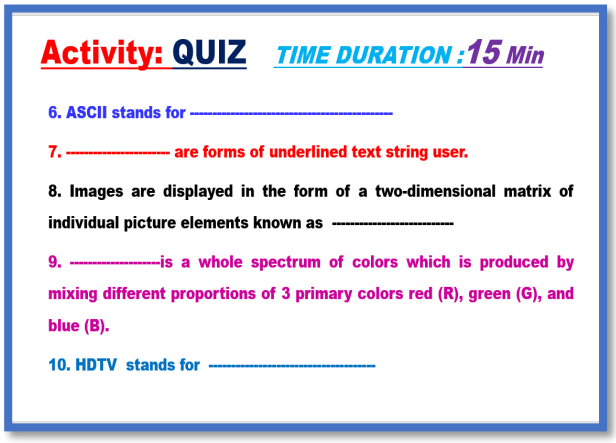
- **Students tend to read the material.**

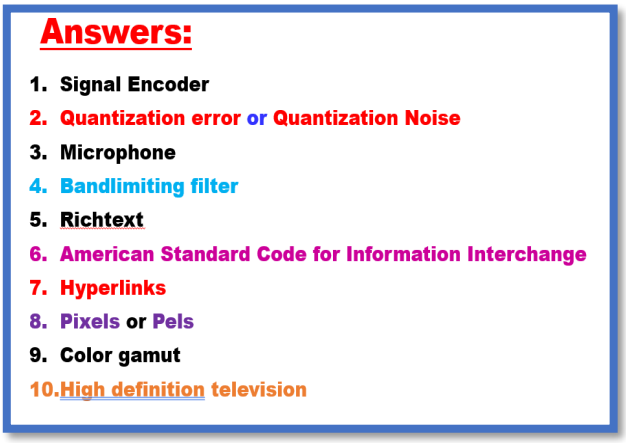
- Students show up for class on time since the quiz always comes first.
- Students are placed in the right attitude for learning.
- Students feel more confident to discuss the material.
- Students raise their grades by simply reading the material.
- Students have a healthy debate amongst participants in order to learn from each other

ACTIVITY DETAILS:









Topic: "Multimedia Information Representation"

Reflections:

- Well, accepted
- Time taken is 15min
- Quiz conducted
- Given 10 questions to answer

Deeksha Reddy M won the I Prize

Amaresh H & Anbar Sabahath won the II Prize


SURPRISE WRITTEN QUIZ
MODULE-2
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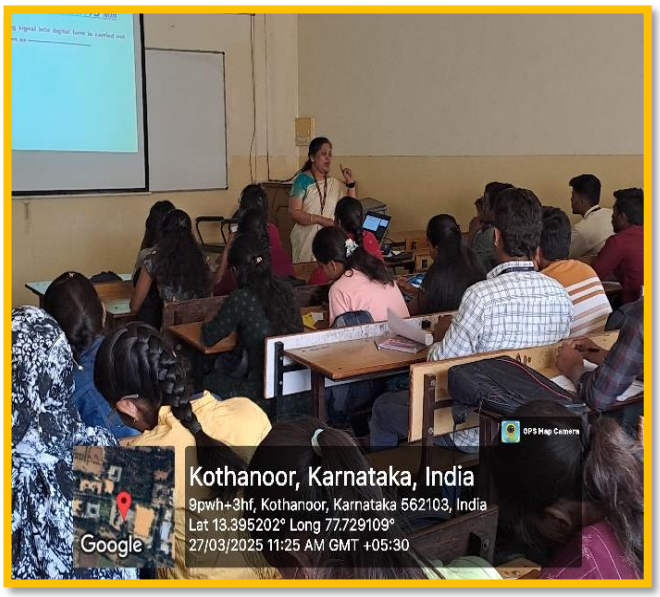
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ANY QUERIES?????
THANKS FOR YOUR ACTIVE PARTICIPATION
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ANY QUERIES?????
ANKS FOR YOUR ACTIVE PARTICIPATION
No work is stressful.
It is your inability to
manage your body,
mind, and emotions
that makes it stressful.
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9pwh+3hf, Kothanoor, Karnataka 562103, India
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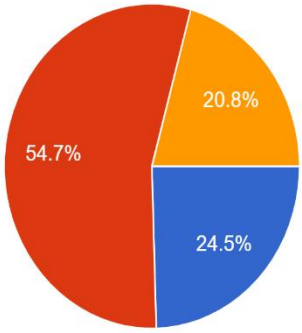
1. How would you rate the overall difficulty level of the quiz?

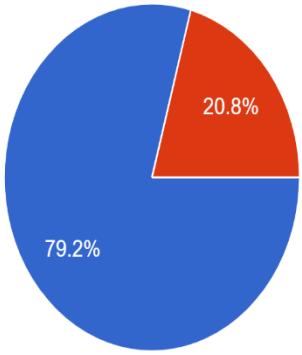
53 responses



- Too easy
- Moderate
- Challenging but fair
- Too difficult

2. Were the quiz questions relevant to the topic of Information Representation?

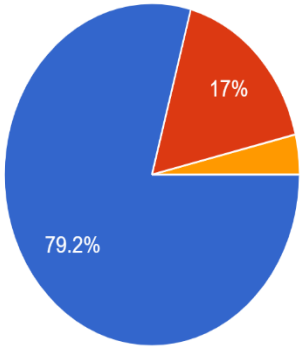
53 responses



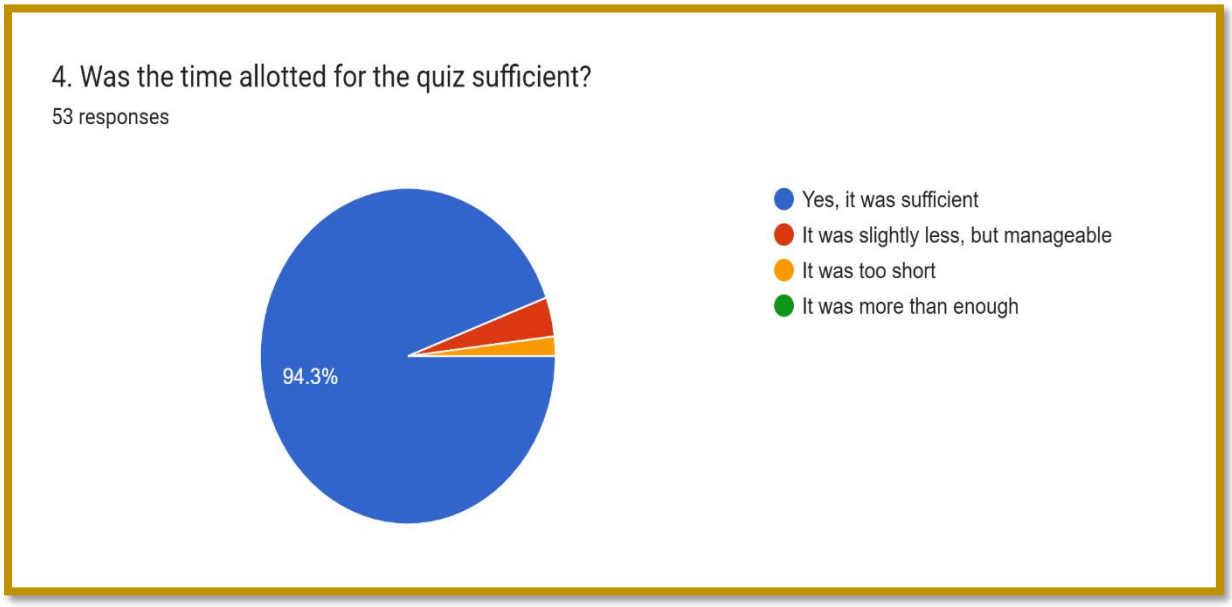
- Yes, all questions were relevant
- Most questions were relevant
- Some questions were relevant
- No, the questions were not relevant

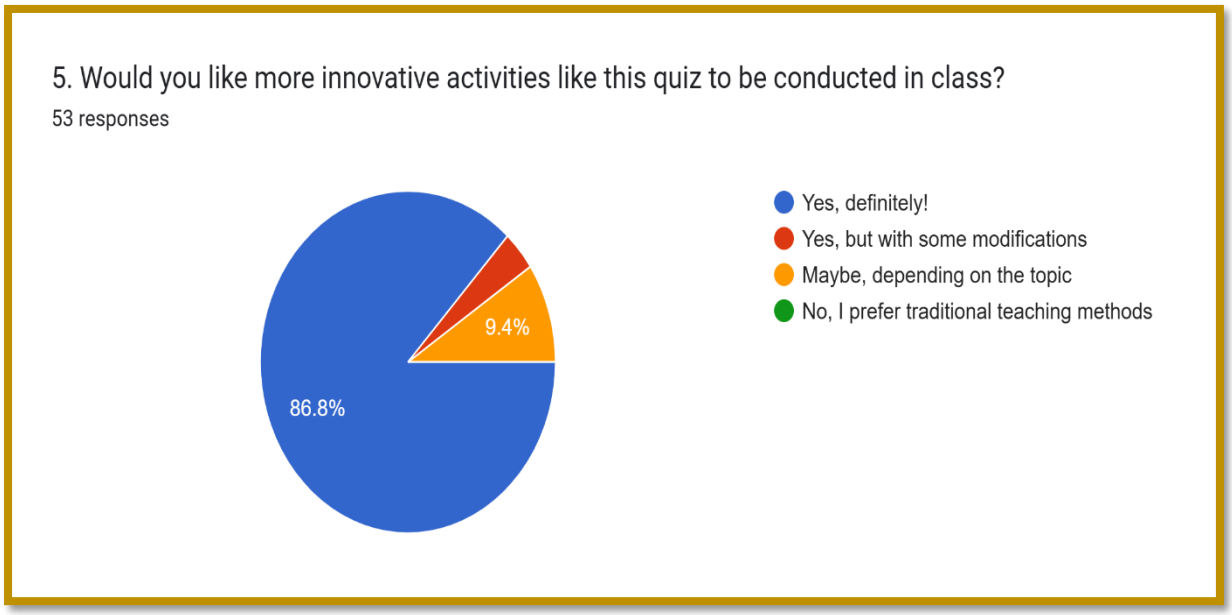
3. How well did the quiz help in reinforcing your understanding of Information Representation?

53 responses



- Very well
- Somewhat well
- Neutral
- Not much





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Signature of HOD

| |Jai Sri Gurudev| |
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2025)

TITLE OF INNOVATION:	**PEER TEACHING**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION(BEC613A)**
SEMESTER & SECTION:	**6th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY OTHER PEERS**
TOPIC COVERED:	**HUFFMAN CODING**
CONDUCTION DATE:	**02.04.2025**

DESCRIPTION OF THE METHOD:

PEER TEACHING is all about teaching peers and learning from their peers, which involves learners and teachers of the same or different, age groups or levels of intelligence. This assisted teaching helps the students to enhance their teaching skills.

The idea of peer learning in the workplace is quite simple. It is when colleagues work together to share their expertise and knowledge to learn a new skill, concept, or process. Peer learning can be formal or informal, but it always involves some sort of collaboration between two or more peers.

Peer teaching is an instructional strategy where students teach other students under the guidance of a teacher. This method encourages active learning, enhances understanding, and builds communication and leadership skills among students. The peer teacher reinforces their own knowledge by teaching, while the learners benefit from explanations in a relatable and often simplified manner. It fosters collaboration, increases student engagement, and can be particularly effective in clarifying difficult concepts through peer interaction.

BENEFITS OF THE METHOD:

- **Peer teaching is one of the strongest ways to accelerate student development.**
- **It provides relationship among pers.**
- **To make students learn the concept by other peer**
- **To boost peer engagement and collaboration while also encouraging learning and development.**
- **Knowledge sharing among peers**
- **It improves the quality of class discussion**

ACTIVITY DETAILS:

First-year M.Tech students Mrs. Anitha N and Mrs. Bhargavi Vasudev D from the Digital Communication and Networking program conducted a peer teaching session on Huffman coding for Sixth Semester A Section Students. They explained how Huffman coding compresses data by assigning shorter codes to more frequent characters, making data storage and transmission more efficient. Using simple examples, they demonstrated building a Huffman tree and encoding messages. This peer-led session helped the undergraduate students grasp the concept more easily, as learning from fellow students can make complex topics more approachable. Additionally, teaching the topic reinforced Anitha and Bhargavi's own understanding and boosted their confidence.

Topic: Huffman Coding

Reflections: Well accepted

Peer Students: Mrs. Anitha N &

Mrs. Bhargavi Vasudev D

(I Sem M.Tech DCN)


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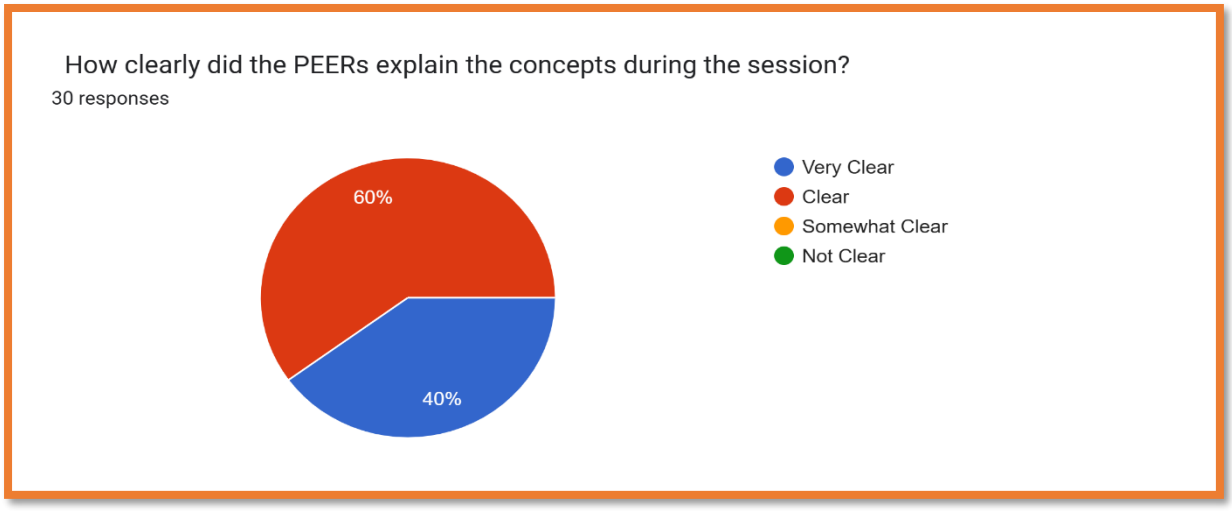
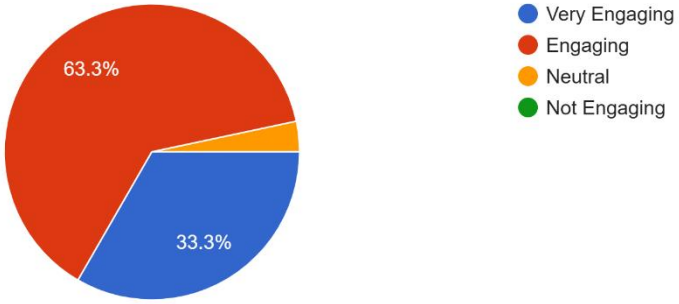

How clearly did the PEERs explain the concepts during the session?
30 responses
60%
40%
Very Clear
Clear
Somewhat Clear
Not Clear

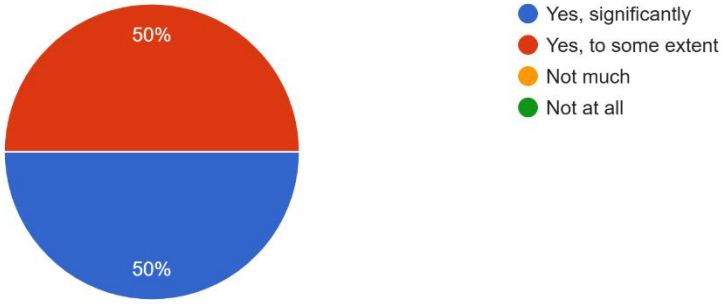
How engaging and interactive was the PEER teaching session?

30 responses



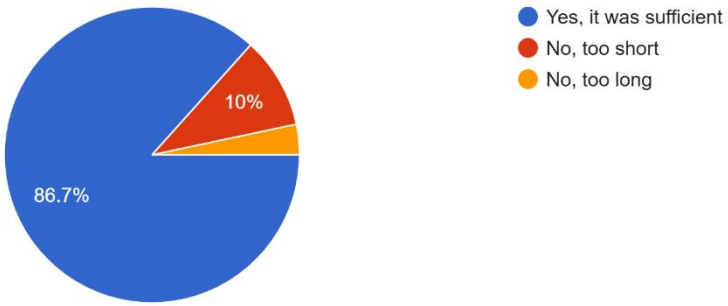
Did the session by the PEERs improve your understanding of the topic?

30 responses



Do you feel the time allotted for the PEER teaching activity was sufficient?

30 responses



Signature of Course Faculty

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2025)

TITLE OF INNOVATION:	**TAPPS (Think-Aloud Pair Problem-Solving)**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION(BEC613A)**
SEMESTER & SECTION:	**6th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"PROBLEMS ON HUFFMAN CODING, ARITHMETIC CODING, LZ & LZW CODING"**
CONDUCTION DATE:	**10.04.2025**

DESCRIPTION OF THE METHOD:

Many educators today agree that students learn more in an active learning environment than they do in a passive learning environment. Active Learning is a process wherein students are actively engaged in building understanding of facts, ideas, and skills through the completion of instructor directed tasks and activities. It is any type of activity that gets students involved in the learning process. While strong conceptual understanding is important in solving analytical problems, it is also essential for the students to learn how to use their knowledge effectively in solving problems.

Thinking aloud pair problem solving, which was first developed by Arthur Whimbey, aims to better understand thinking among the students. As the name suggests, this involves students working in pairs. One student (the problem solver) is required to read the problem aloud and think aloud during

the problem solving process, which includes verbalizing everything they are thinking and doing. Another student (the listener) attends to the problem solver's thinking and reminds him/ her to keep saying aloud what he or she is thinking or doing, while also asking for clarifications and pointing out errors being made.

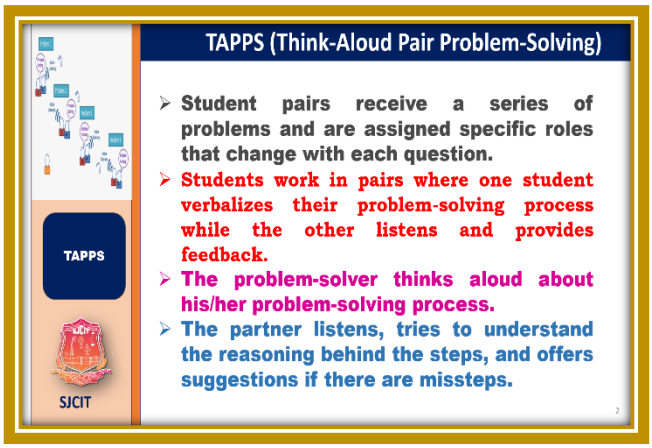
Student pairs receive a series of problems and are assigned specific roles that change with each question. Students work in pairs where one student verbalizes their problem-solving process while the other listens and provides feedback. The problem-solver thinks aloud about his/her problem-solving process. The partner listens, tries to understand the reasoning behind the steps, and offers suggestions if there are missteps.

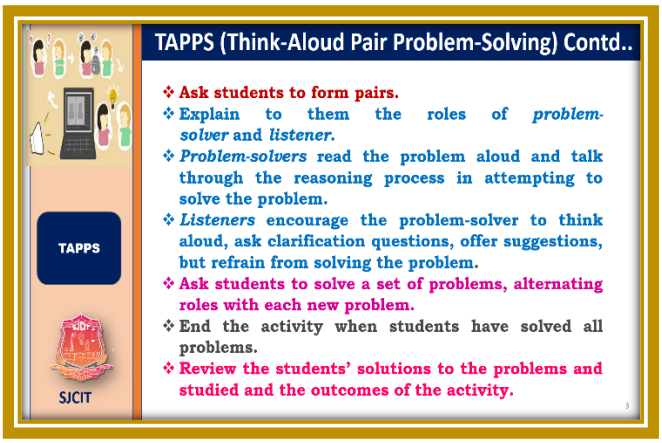
Ask students to form pairs. Explain to them the roles of *problem-solver* and *listener*. *Problem-solvers* read the problem aloud and talk through the reasoning process in attempting to solve the problem. *Listeners* encourage the problem-solver to think aloud, ask clarification questions, offer suggestions, but refrain from solving the problem. Ask students to solve a set of problems, alternating roles with each new problem. End the activity when students have solved all problems. Review the students' solutions to the problems and studied and the outcomes of the activity.

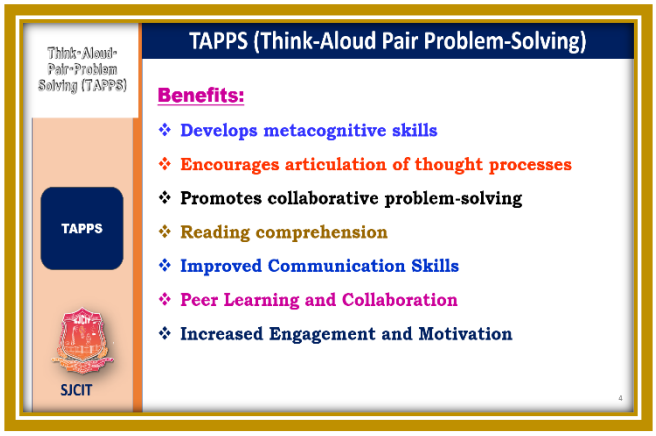
BENEFITS OF THE METHOD:

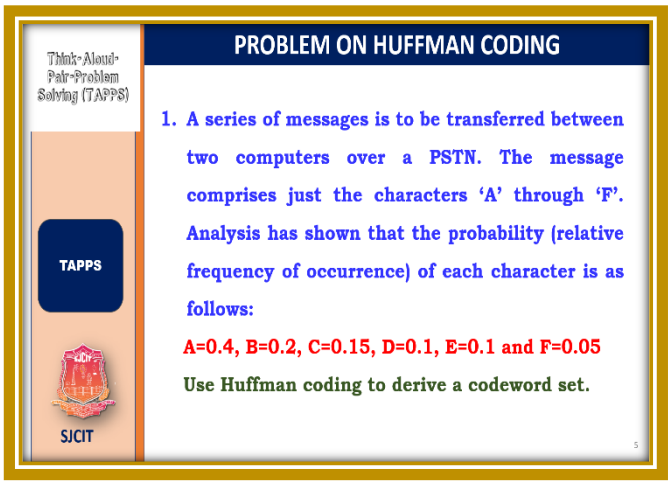
- **Develops metacognitive skills**
- **Encourages articulation of thought processes**
- **Promotes collaborative problem-solving**
- **Reading comprehension**
- **Improved Communication Skills**
- **Peer Learning and Collaboration**
- **Increased Engagement and Motivation**

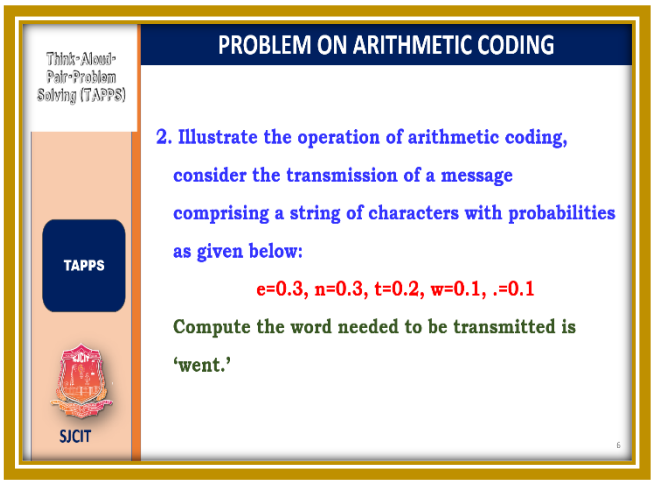
ACTIVITY DETAILS:

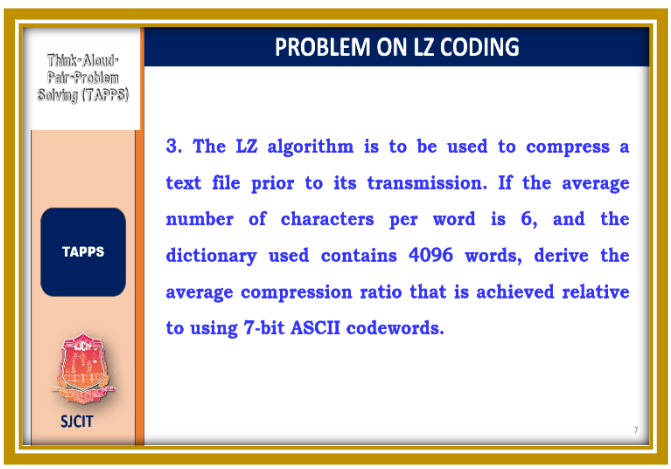


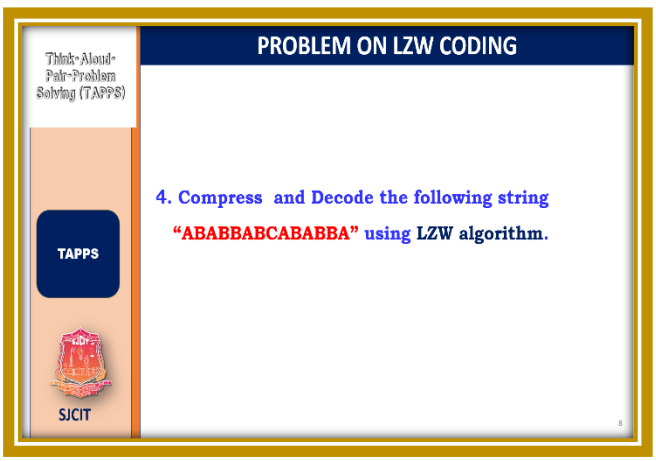












Topic: **Problems on Huffman Coding, Arithmetic Coding, LZ & LZW Coding**

Reflections:

- **Well, accepted**
- **Time taken is 50min**
- **Given 4 problems to solve**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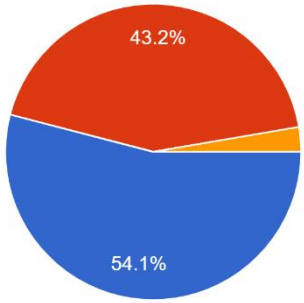
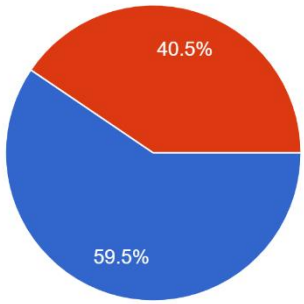
How effectively did the TAPPS activity help you understand compression coding techniques?

37 responses



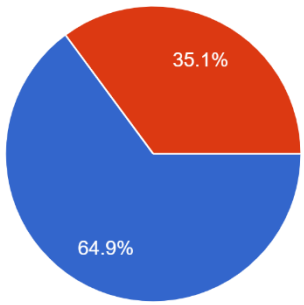
How well did you and your partner collaborate during the activity?

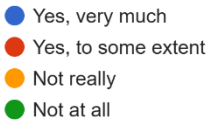
37 responses

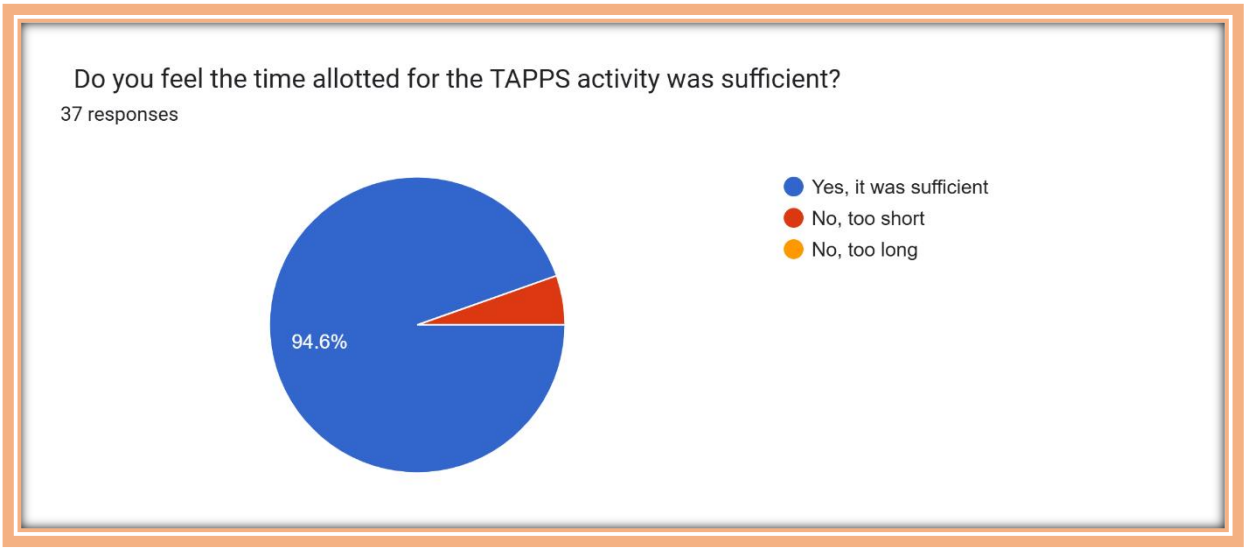


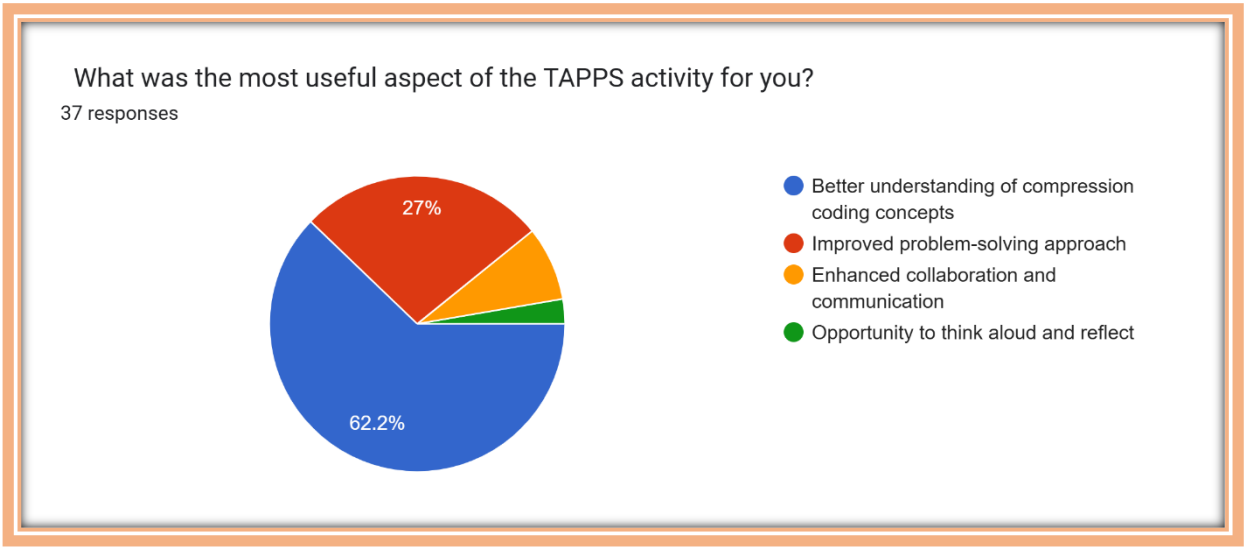
Did the “think aloud” method help in identifying and solving problems in compression coding?

37 responses









Signature of Course Faculty

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2025)

TITLE OF INNOVATION:	**FLIPPED CLASSROOM**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION (BEC613A)**
SEMESTER & SECTION:	**6th A**
OBJECTIVE OF THE METHOD:	**TO CREATE INTERACTIVE LEARNING AMONG STUDENTS.**
TOPIC COVERED:	**"MPEG & TOKEN RING"**
CONDUCTION DATE:	**12.05.2025**

DESCRIPTION OF THE METHOD:

The Flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. The term is widely used to describe almost any class structure that provides pre-recorded lectures followed by in-class exercises. The flipped classroom is an easy model. A means to INCREASE interaction and personalized contact time between students and teachers. An environment where students take responsibility for their own learning.

Flipped classrooms provide a good alternative teaching platform. Teacher provides the content to the students in form of videos, references to websites, digital content, etc. The students go through the content in a given time frame. The learners are asked to go through a few lecture videos that create the platform for discussion in the next

class. The class room is reserved for discussions on the topic and to enhance in-depth understanding of the topic, by the students. Classroom is open for discussions, where the topics are explored further, with students contributing significantly to the discussions.

This method adds a new element to help students learn with each other. The class starts with a student explaining the concept covered before class. In a flipped classroom, the teacher does not give direct instruction but provides all the help and material for students to present their work. The flipped class creates a learning space that students can explore.

BENEFITS OF THE METHOD:

- **The students will be able to learn at their own pace with more one-to-one interaction between teacher and student.**
- **This method provides more collaboration time for students. Moreover, flipped classroom changes the traditional learning culture into a learner-centered class.**
- **It helps the instructor to change from the conventional mode of teaching to newer modes, which capture the interest of the students and hold their attention.**
- **Students are given equal opportunity to share their view and ideas.**
- **Students can have prior preparation for the class.**

KEY ELEMENTS:

- **Arrange for an opportunity for students to gain first exposure prior to class.**
- **Offer an incentive for students to prepare for class.**
- **Provide a mechanism to assess student understanding**
- **Run in-class activities that focus on higher level cognitive activities.**

ACTIVITY DETAILS:

Topic: "MPEG & TOKEN RING"

Reflections: **Well accepted**

- **Time taken is 60min**
- **Seminar conducted**
- **Given them two questions to write**

HEMANTH, SIDDARTH, BHAVANA, ABHI, HARSHITHA & NISARGA given the Seminar


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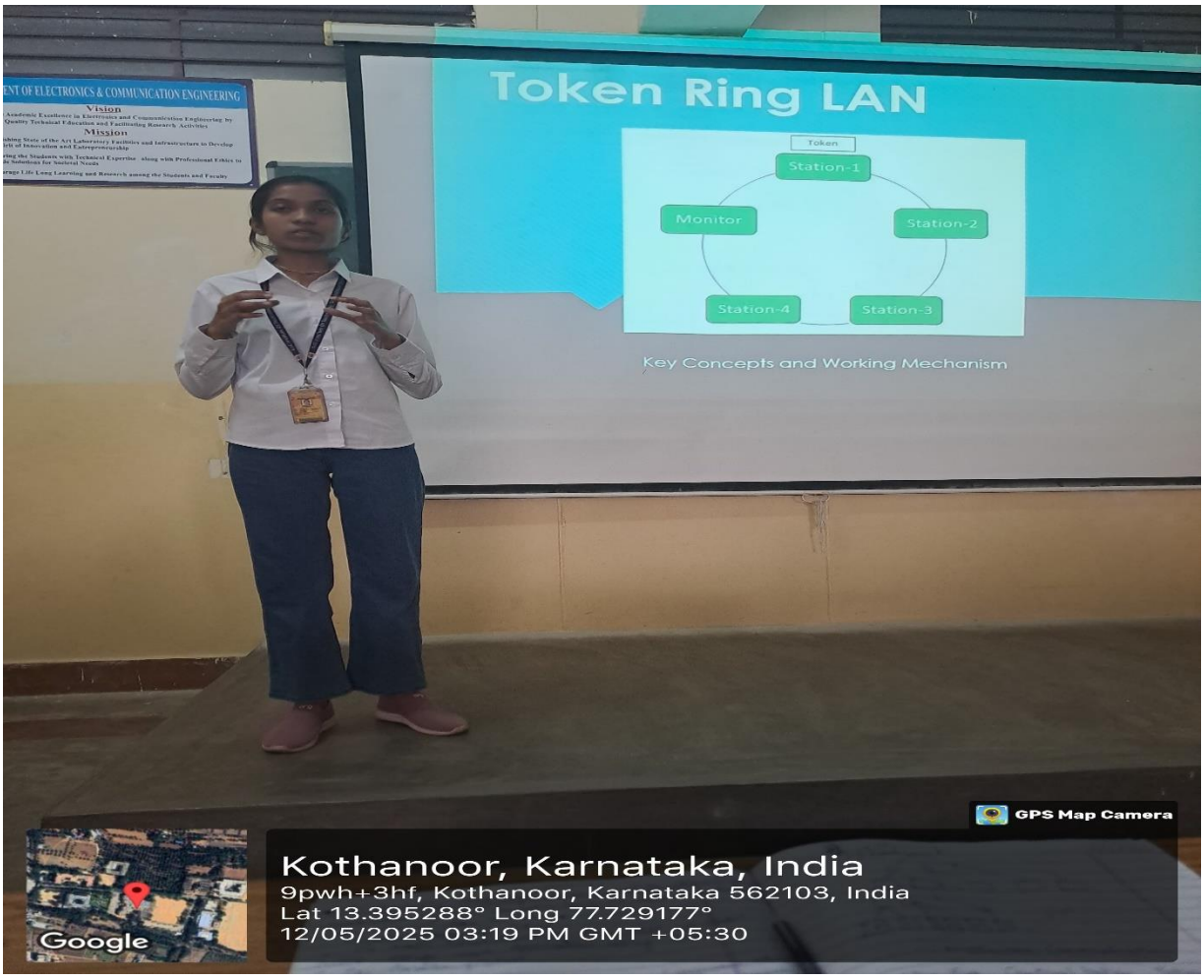
Token Ring LAN
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Monitor
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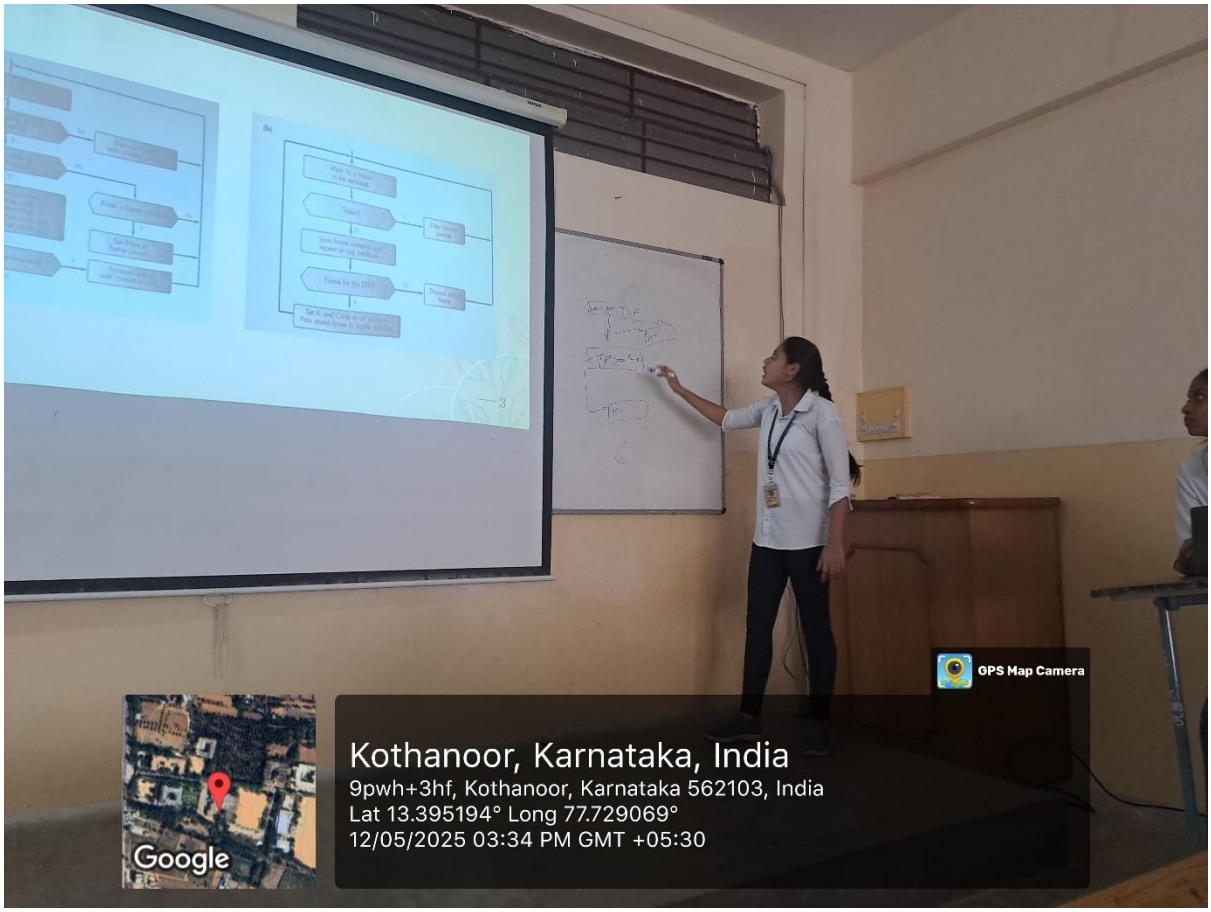
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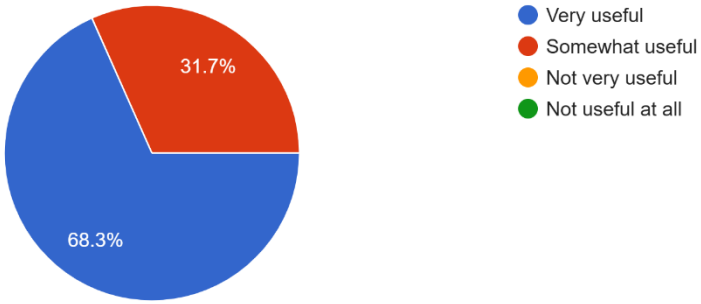
STUDENTS FEEDBACK:

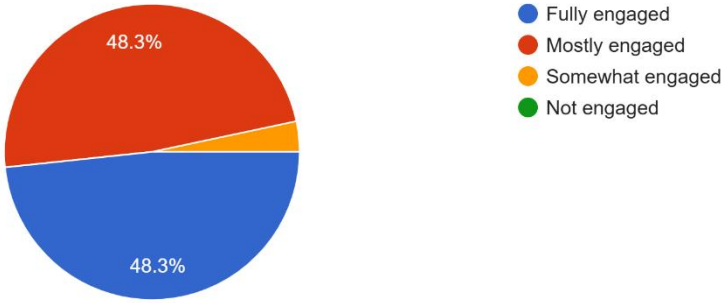
How useful was the pre-class material in helping you understand the topic before the class session?

60 responses



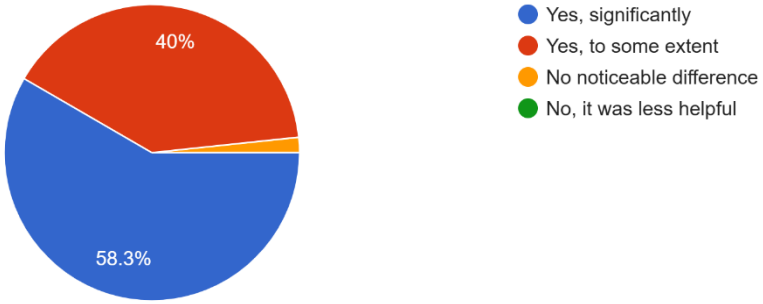
How engaged did you feel during the in-class flipped activity?

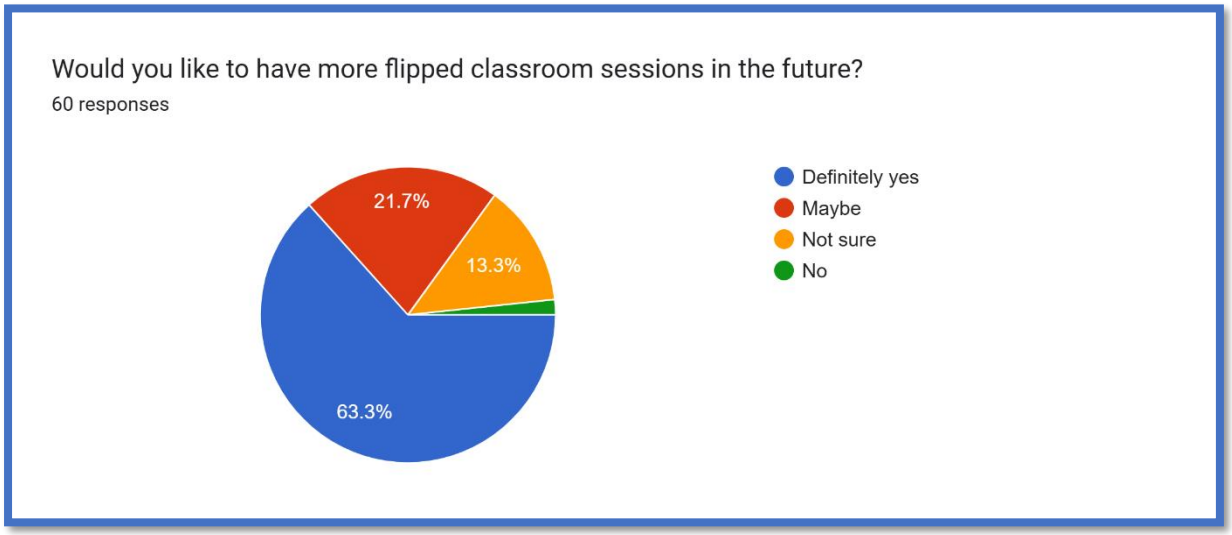
60 responses



Did the flipped class approach help improve your understanding of the topic compared to traditional lectures?

60 responses





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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2025)

TITLE OF INNOVATION:	**ROUND ROBIN DISCUSSION**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION (BEC615A)**
SEMESTER & SECTION:	**6th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"MULTIMEDIA INFORMATION NETWORKS"**
CONDUCTION DATE:	**22.05.2025**

DESCRIPTION OF THE METHOD:

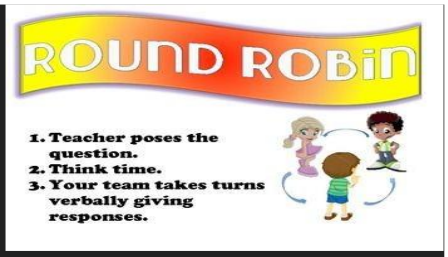
- **The Round Robin strategy is a brainstorming strategy where students are situated around a table in an academic discussion.**
- **By this technique, the students can increase their understanding of the material that delivered by the teacher and discusses it with their group.**
- **Students generate ideas on a specific topic or question.**
- **The most effective thing about this strategy is that each student within the group has an equal opportunity to participate in the discussion.**
- **Round-Robin Brainstorming is a useful tool for having team generate ideas, without being influenced unduly by others in the group.**
- **This method also ensures that everyone on team gets an equal say in the ideas that they generate. We can use either the written and verbal variations of this technique.**

- **In small groups of 3 to 5 students, pose a problem or question and have the students go around the circle quickly sharing their ideas or answers. This technique is a good one to use for brainstorming or to elicit quick responses from students.**

BENEFITS OF THE METHOD:

- **Round robin brainstorming has the distinct advantage of encouraging contributions from all participants, including those who typically remain silent**
- **It also provides each participant an equal opportunity to voice their thoughts, and a space to present their ideas without undue influence by potentially overly-assertive**
- **It helps students to get collaboration and presentation skills.**
- **It helps students to think individually about a topic or answer to a question.**
- **It teaches students to share ideas with classmates and builds oral communication skills.**
- **It helps focus attention and engage students in comprehending the reading material.**
- **In round robin technique all students have responsibility to give contribution in doing the assignment. So, none will do nothing.**
- **Since each student answers the question, his/her understanding towards the task will be observed. The rest of the group members also can build new knowledge or concept from the previous thoughts from different members.**
- **The use of round robin technique in teaching learning process also can help the students create positive peer response groups. Students can learn how to respect their friends' thoughts and opinions.**
- **This technique is useful for reviewing materials delivered by the teacher. Students do not only get the information from the teacher but also from their peers.**

ACTIVITY DETAILS:



ACTIVITY
Round Robin Discussion
(Module – 5)

- The Round Robin strategy is a brainstorming strategy where students are situated around a table in an academic discussion.
  By this technique, the students can increase their understanding of the material that delivered by the teacher and discusses it with their group.

- Students generate ideas on a specific topic or question.
  The most effective thing about this strategy is that each student within the group has an equal opportunity to participate in the discussion

Instructions

1. Six students in a team with one team leader(Mentor)
2. Each team will be given one topic and members have to discuss it in a time span of 20 minutes.
3. Any member from the team will be randomly picked by the faculty and that member should explain the topic
4. For each team five minutes time will be given to explain.
5. The best team will be awarded.

Topics

- LANs (Team 1)
- Ethernet (Team 2)
- Ethernet Frame format and Operational Parameters(Team 3)
- Token Ring (Team 4)
- Token Ring Frame Transmission & Reception(Team 5)
- Bridges (Team 6)
- FDDI (Team 7)

GOOD LUCK

Time Starts Now

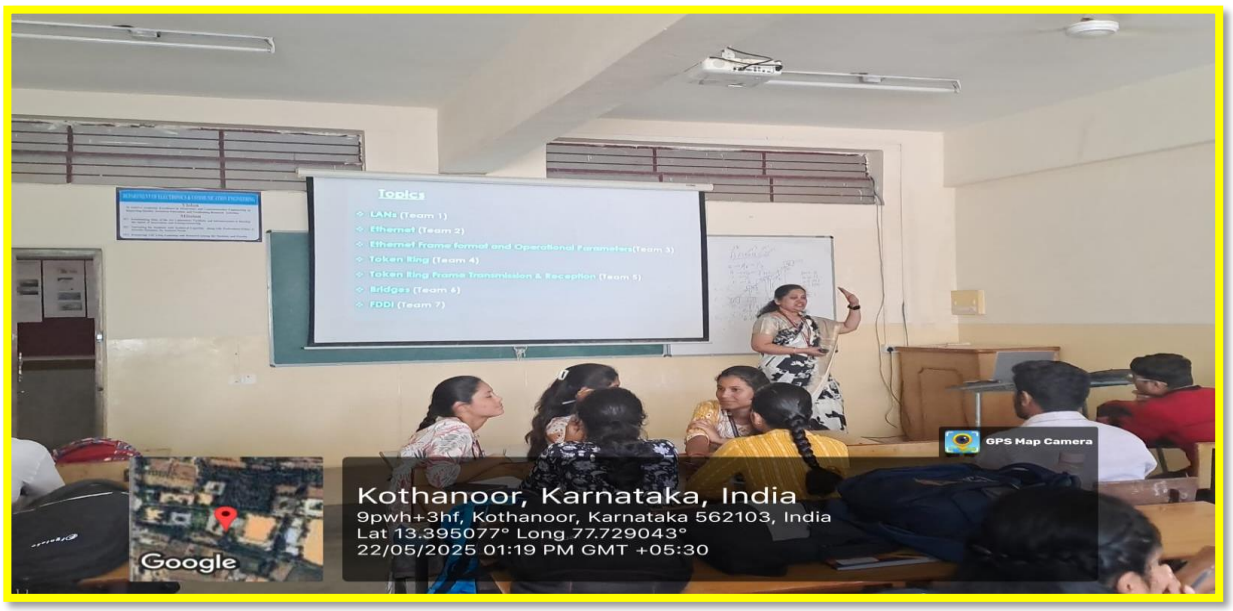
The Winners are

Bhavana & Team – First Prize

Hemanth Kumar & Team – Second Prize

Chandan G & Team – Second Prize

ACTIVITY PHOTOS

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Topics
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Ethernet (Team 2)
Ethernet Frame format and Operational Parameters(Team
Token Ring (Team 4)
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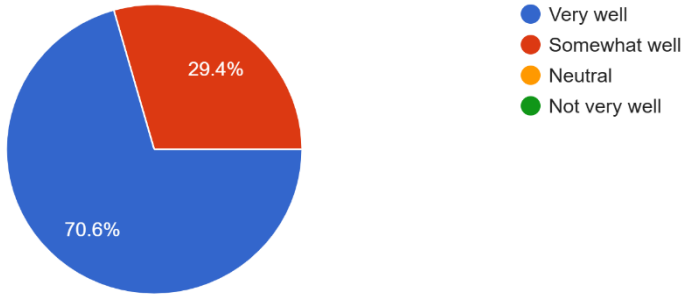
STUDENTS FEEDBACK

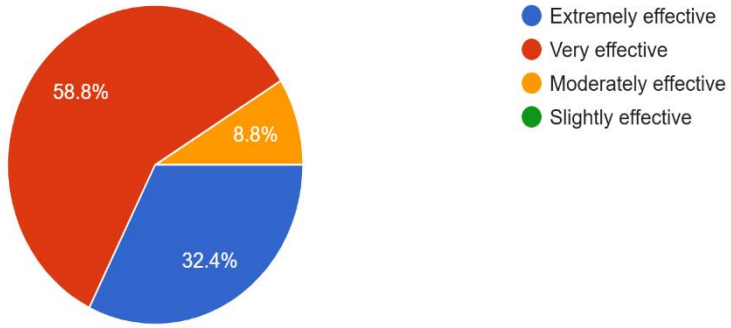
1. How well did you understand the topic discussed during the Round Robin activity?

34 responses



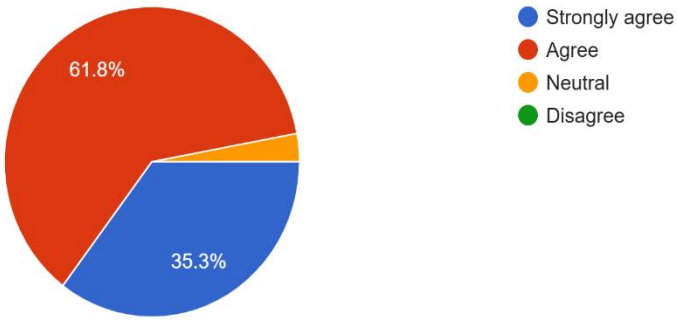
2. How effectively did your team collaborate during the discussion?

34 responses



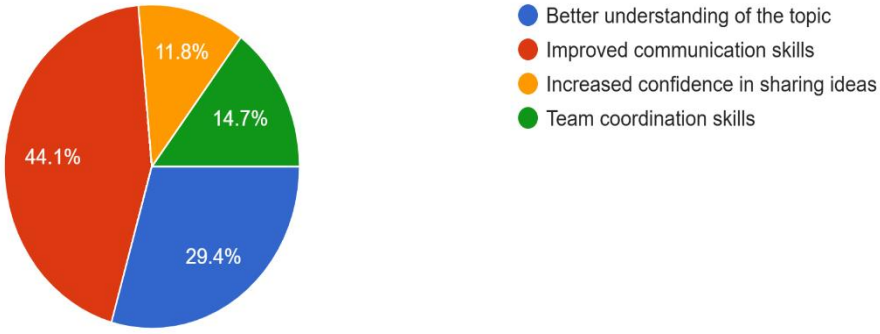
3. Did the Round Robin format allow everyone in the group to contribute equally?

34 responses



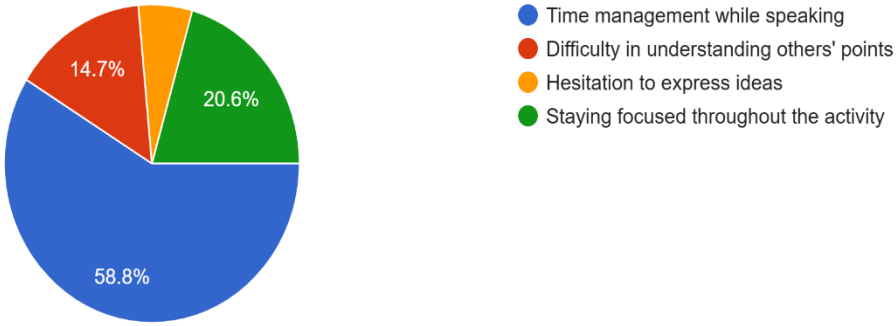
4. What was the most valuable outcome of this activity for you?

34 responses



5. What challenge did you face the most during the Round Robin Discussion?

34 responses



Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2025)

TITLE OF INNOVATION:	**Think Pair Share**
COURSE FACULTY:	**Dr Deepthi Prakash**
DESIGNATION:	**ASSISTANT PROFESSOR**
COURSE NAME & CODE:	**COMPUTER AND NETWORK SECURITY (BEC714B)**
SEMESTER & SECTION:	**7th C**
OBJECTIVE OF THE METHOD:	**TO CREATE COLLABORATIVE LEARNING AMONG STUDENTS.**
TOPIC COVERED:	**"Active and Passive Attacks"**
CONDUCTION DATE:	**10.09.2025**

DESCRIPTION OF THE METHOD:

Think-Pair-Share is a collaborative learning strategy where individuals first think about a question, then pair with a partner to discuss their ideas, and finally share their combined thoughts with the larger class. The benefits include increased student participation, deeper understanding of concepts, improved critical thinking and communication skills, and greater student confidence, especially for those who are typically hesitant to speak up in large groups. This strategy provides a structured way for students to process information, verbalize their thinking, and learn from their peers in a low-stakes environment.

1. **Think: The instructor poses a question or problem, and students take a few moments to think about it individually.**
2. **Pair: Students pair up with a classmate to discuss their ideas and compare their answers.**
3. **Share: The pairs share their findings with the rest of the class, leading to a larger discussion.**

BENEFITS OF THE METHOD:

- **Increased Engagement and Participation: It ensures every student has time to process the material before being expected to contribute, and the pair-share phase gives even shy students a comfortable forum to voice their ideas**
- **Improved Understanding: Students develop a deeper comprehension by articulating their thoughts to a peer, which helps them clarify their own understanding and identify misconceptions.**
- **Boosted Confidence: The initial "think" and "pair" phases allow students to build confidence in their answers before sharing them with the entire class.**
- **Develops Collaboration Skills: It provides a structured and safe environment for students to practice communication, active listening, and collaborative dialogue.**
- **It helps the instructor to change from the conventional mode of teaching to newer modes, which capture the interest of the students and hold their attention.**
- **Students are given equal opportunity to share their views and ideas.**

KEY ELEMENTS:

- **Arrange for an opportunity for students to gain their first exposure prior to class.**
- **Provide a mechanism to assess student understanding**
- **Run in-class activities that focus on higher-level cognitive activities.**

ACTIVITY DETAILS:

Topic: "Active and Passive Attacks"

Reflections: Well, accepted

- **Time taken is 40min**
- **Think Pair Share conducted**
- **Given one topic to present**

Signature of the Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2025)

TITLE OF INNOVATION:	**Panel Discussion**
COURSE FACULTY:	**Dr Deepthi Prakash**
DESIGNATION:	**ASSISTANT PROFESSOR**
COURSE NAME & CODE:	**COMPUTER AND NETWORK SECURITY (BEC714B)**
SEMESTER & SECTION:	**7th C**
OBJECTIVE OF THE METHOD:	**TO CREATE COLLABORATIVE LEARNING AMONG STUDENTS.**
TOPIC COVERED:	**"Different types of Malicious Logic"**
CONDUCTION DATE:	**17.09.2025**

DESCRIPTION OF THE METHOD:

A classroom panel discussion is a teaching method where a small group of students (the panel) discusses a topic in front of their peers, who then ask questions. It benefits students by promoting higher-order thinking, improving communication and presentation skills, and fostering social learning. The activity helps students develop critical skills, such as respectful disagreement, problem-solving, and tolerating different viewpoints.

- **A group of 4 to 8 students discusses an assigned topic in front of an audience (the rest of the class).**
- **It typically includes a moderator, the panellists who are knowledgeable about the topic, and an audience that can ask questions.**
- **The panel discusses the topic from different perspectives, and the audience gets to ask questions and gain knowledge from the discussion.**

BENEFITS OF THE METHOD:

- **Develops critical thinking: Students are encouraged to analyze information and develop logical explanations rather than just memorizing facts.**
- **Improves communication skills: Students learn to present their ideas clearly and listen to and understand different viewpoints.**
- **Encourages social learning: Students work together and learn from each other in a way that fosters a more dynamic learning environment.**
- **Promotes respect for others: Students learn to handle disagreements respectfully and appreciate diverse perspectives.**
- **Builds confidence: The activity can help students become more confident in expressing themselves in a group setting.**
- **Provides real-world experience: It offers students a chance to participate in authentic, panel-based activities that are common in many professions.**

KEY ELEMENTS:

- **Arrange for an opportunity for students to gain their first exposure in the class.**
- **Provide a mechanism to assess student understanding.**
- **Run in-class activities that focus on higher-level cognitive activities.**

ACTIVITY DETAILS:

Topic: "Different forms of Malicious Logic"

Reflections: Well, accepted

- **Time taken is 40min**
- **Discussion conducted**
- **Given one topic to present views**

Signature of Course Faculty

|| Jai Sri Gurudev||

S J C Institute of Technology, Chickballapur – 562101

Report Date: 22.11.2024

Demonstration of gates and adders in Analog and Digital lab was organized on 22nd November 2024 in Department of Electronics & Communication Engineering

Prof Savitha M M, Prof Vishala I L and Instructor Manoj conducted this program

Highlights of the program:

1. IC gates of AND, OR, NOT, NAND, NOR, XOR and XNOR
2. Half adder
3. Full adder

All the first semester students of CS-A section attended this program from 10.00AM to 12.00AM at Analog and Digital lab, EC Department

Prepared by: Savitha M M

Signature of HOD

Photos:


GPS Map Camera
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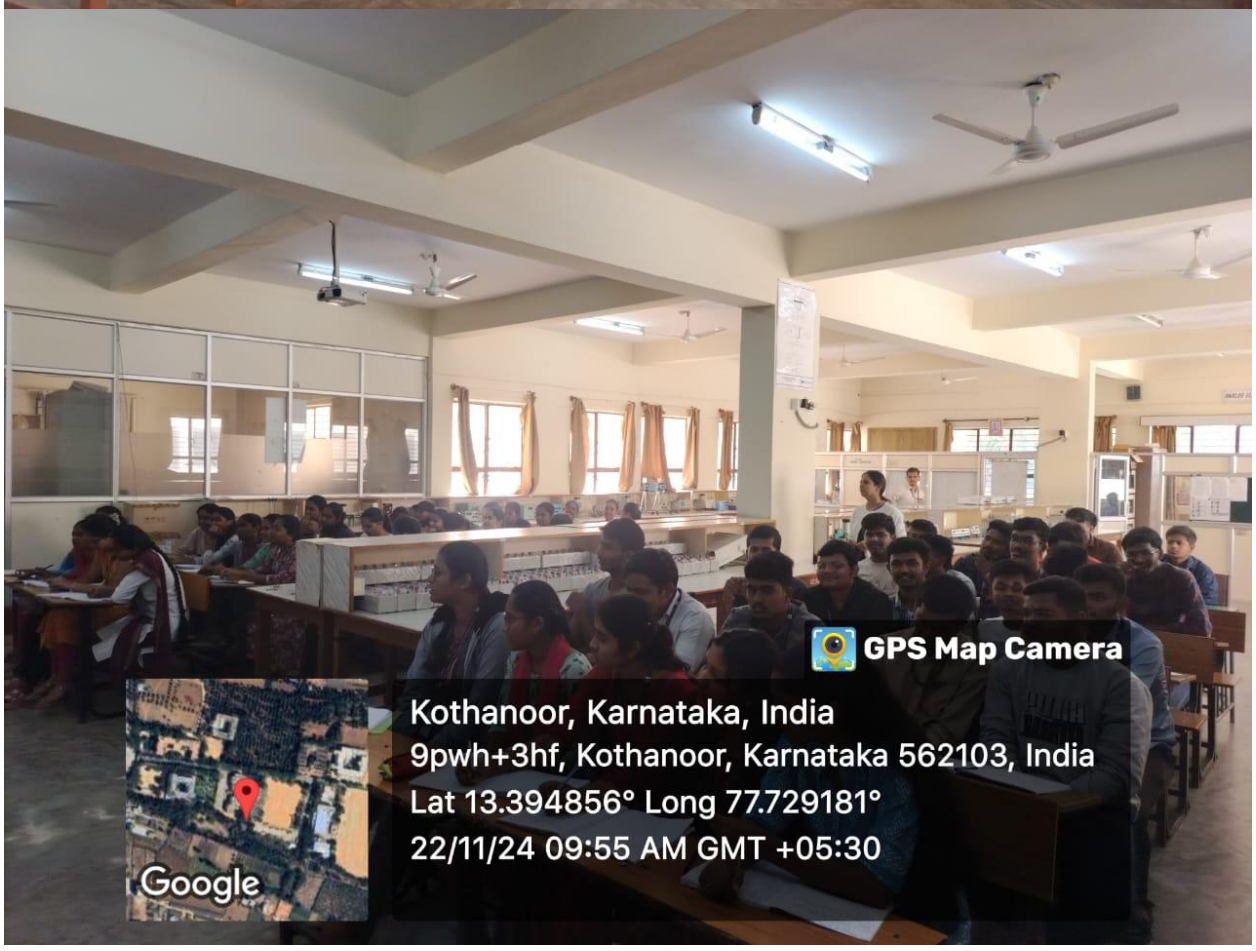
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|JAI SRI GURUDEV||

SJC INSTITUTE OF TECHNOLOGY, CHICKBALLAPUR

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Date: 19.1.2024

Name of the Course Faculty: RAVI M V

Course: COMPUTER COMMUNICATION NETWORKS **Code:** 21EC53

Semester: V **Section/s:** A

Problem solving exercise

P11-1. Byte-stuff the following frame payload in which E is the escape byte, F is the flag byte, and D is a data byte other than an escape or a flag character.

D	E	D	D	F	D	D	E	E	D	F	D

P11-2. Unstuff the following frame payload in which E is the escape byte, F is the flag byte, and D is a data byte other than an escape or a flag character.

E	E	D	E	F	D	D	E	F	E	E	D	D	D	

P12-14. In a bus CSMA/CD network with a data rate of 10 Mbps, a collision occurs 20 µs after the first bit of the frame leaves the sending station. What should the length of the frame be so that the sender can detect the collision?

P12-15. Assume that there are only two stations, A and B, in a bus CSMA/CD network. The distance between the two stations is 2000 m and the propagation speed is 2×10^8 m/s. If station A starts transmitting at time t_1:

a. Does the protocol allow station B to start transmitting at time $t_1 + 8$ µs? If the answer is yes, what will happen?

b. Does the protocol allow station B to start transmitting at time $t_1 + 11$ µs? If the answer is yes, what will happen?

P12-16. There are only two stations, A and B, in a bus 1-persistence CSMA/CD network with $T_p = 25.6$ µs and $T_{fr} = 51.2$ µs. Station A has a frame to send to station B. The frame is unsuccessful two times and succeeds on the third try. Draw a time line diagram for this problem. Assume that the R is 1 and 2 respectively and ignore the time for sending a jamming signal (see Figure 12.13).

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2025)

TITLE OF INNOVATION:	**FLIPPED CLASSROOM**
COURSE FACULTY:	**Dr. Deepthi Prakash**
DESIGNATION:	**ASSISTANT PROFESSOR**
COURSE NAME & CODE:	**COMPUTER NETWORK & SECURITY (BEC714B)**
SEMESTER & SECTION:	**7th C**
OBJECTIVE OF THE METHOD:	**TO CREATE INTERACTIVE LEARNING AMONG STUDENTS.**
TOPIC COVERED:	**"INTRUSION DETECTION SYSTEM"**
CONDUCTION DATE:	**18.10.2025**

DESCRIPTION OF THE METHOD:

The Flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. The term is widely used to describe almost any class structure that provides pre-recorded lectures followed by in-class exercises. The flipped classroom is an easy model. A means to INCREASE interaction and personalized contact time between students and teachers. An environment where students take responsibility for their own learning.

Flipped classrooms provide a good alternative teaching platform. Teacher provides the content to the students in form of videos, references to websites, digital content, etc. The students go through the content in a given time frame. The learners are asked to go through a few lecture videos that create the platform for discussion in the next class. The class room is reserved for discussions on the topic and to enhance in-depth understanding of the topic, by the students. Classroom is open for discussions, where the topics are explored further, with students contributing significantly to the discussions.

This method adds a new element to help students learn with each other. The class starts with a student explaining the concept covered before class. In a flipped classroom, the teacher does not give direct instruction but provides all the help and material for students to present their work. The flipped class creates a learning space that students can explore.

BENEFITS OF THE METHOD:

- **The students will be able to learn at their own pace with more one-to-one interaction between teacher and student.**
- **This method provides more collaboration time for students. Moreover, flipped classroom changes the traditional learning culture into a learner-centered class.**
- **It helps the instructor to change from the conventional mode of teaching to newer modes, which capture the interest of the students and hold their attention.**
- **Students are given equal opportunity to share their view and ideas.**
- **Students can have prior preparation for the class.**

KEY ELEMENTS:

- **Arrange for an opportunity for students to gain first exposure prior to class.**
- **Offer an incentive for students to prepare for class.**
- **Provide a mechanism to assess student understanding**
- **Run in-class activities that focus on higher level cognitive activities.**

ACTIVITY DETAILS:

Topic: "INTRUSION DETECTION SYSTEM"

Reflections: **Well accepted**

- **Time taken is 40min**
- **Seminar conducted**
- **Given topics to present**


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Signature of Course Faculty

|| Jai Sri Gurudev ||

Adichunchanagiri Shikshana Trust (R.)

SJC INSTITUTE OF TECHNOLOGY

P.B. No. 20, B.B. Road, Chickaballapur- 562101, Karnataka.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REPORT: FLIPPED CLASSROOM ON OSI/TCP-IP LAYERS, ADDRESSING, AND PROTOCOL LAYERS

1. **Introduction**

The flipped classroom design for OSI/TCP-IP layers, addressing, and protocol layers centers on active, student-led learning. Students independently review foundational material before class, freeing in-class time for collaborative exercises, simulators, and deep analysis. This modernizes network concepts teaching and maximizes engagement and application.

2. **Pre-Class Learning Activities**

Students are assigned short videos and OER modules that explain the OSI seven-layer model and TCP/IP four-layer model, with clear visual aids and real-world analogies.

Study tasks include:

Identifying and summarizing the function and protocols of each OSI and TCP/IP layer.

Comparing how data travels in both models.

Reviewing interactive animations or packet tracing demonstrations (e.g., viewing how an HTTP request is encapsulated and travels across layers).

Students answer quiz questions and reflect on addressing (IP, MAC) and addressing protocols (ARP, DHCP) in discussion forums, preparing doubts for class discussion.

3. **In-Class Collaborative Activities** Protocol Layer Mapping: Peers collaborate to match protocols (e.g., HTTP, DNS, TCP, IP, ARP, Ethernet) to the correct OSI and TCP/IP layers. Instructors clarify misconceptions interactively.

Layered Packet Analysis: Using tools like Wireshark or Packet Tracer, students step through live or simulated network captures: Trace encapsulation/decapsulation as data flows from application to physical layers, observing actual packet details (MAC, IP, TCP/UDP headers). Visualize ARP and DHCP operations in local network simulations.

Case Study Discussion: Teams analyse packet journey scenarios and debate layer-wise responsibilities, including addressing, routing, error control, and session management.

Q&A and Misconception Correction: Active student questioning is encouraged, targeting protocol assignments, addressing types, and how TCP/IP maps to OSI for modern networking.

4. **Assessment and Feedback Short**, formative quizzes on layer roles, protocol assignments, and addressing schemes immediately follow activities. Students submit concise reflective summaries or one-page “packet journey” walkthroughs to reinforce understanding. Peer

instruction and group discussion effectiveness are gauged with brief surveys and knowledge checks.

5. **Learning Outcomes** Mastery of OSI and TCP/IP layer structures, their respective functions, and interrelationships. Ability to accurately classify networking protocols at each layer. Practical understanding of addressing concepts and the processes by which data is encapsulated, transported, and delivered across networks.

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2024)

TITLE OF INNOVATION:	**THINK PAIR SHARE**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION (21EC745)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"COMPARISION BETWEEN CIRCUIT SWITCHING & PACKET SWITCHING"**
CONDUCTION DATE:	**08.10.2024**

DESCRIPTION OF THE METHOD:

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Think-Pair-Share (TPS) is a cooperative learning activity that can work in varied size classrooms and in any subject. Instructors pose a question, students first THINK to themselves prior to being instructed to discuss their response with a person sitting near them (PAIR).

Think-pair-share is a technique that encourages and allows for individual thinking, collaboration, and presentation in the same activity. Students must first answer a prompt on their own, then come together in pairs or small groups, then share their discussion and decision with the class. Discussing an answer first with a partner before sharing maximizes participation, and helps to focus attention on the prompt given. Using the think-pair-share technique allows students time for individual reflection, thinking, and processing new information before they may be influenced by other students' answers. This

process also teaches students how to explain their thoughts first to a peer, and then to a larger audience (the entire class).

Faculty explains the technique to the students before beginning the exercise: describe the purpose, set discussion guidelines and time limits, and model the strategy to ensure that students know what is expected of them.

Step 1: Think

Begin with a specific question, and give students time to individually think about an answer, and document their responses on their own. Students can be given 1-3 minutes for this part of the exercise.

Step 2: Pair

Students now get into pairs. Ask the students to share what they came up with, with their partners and discuss. This part of the activity can take at least 5 minutes.

Step 3: Share

For this part, come back together as a class and have a whole class discussion. We can either choose to have one person from each pair share with the class, or the discussion can be more open. Students can also share with the class what their partner said.

BENEFITS OF THE METHOD:

- It enhances students' critical thinking skills, improves listening and reading comprehension
- It helps students to get collaboration and presentation skills.
- It benefits the students who are typically shy may feel more comfortable sharing with the class after sharing with a partner,
- It promotes students who are outspoken to get benefit from first listening to others before sharing their own opinion.
- It helps students to think individually about a topic or answer to a question.
- It teaches students to share ideas with classmates and builds oral communication skills.
- It helps focus attention and engage students in comprehending the reading material.

ACTIVITY DETAILS:

Topic:

"COMPARISION BETWEEN CIRCUIT SWITCHING & PACKET SWITCHING"

Reflections: Well accepted

CHELUVAMBA N R & HARINI M S won the I prize

Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2024)

TITLE OF INNOVATION:	**QUIZ**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION(21EC745)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"MULTIMEDIA INFORMATION REPRESENTATION"**
CONDUCTION DATE:	**08.11.2024**

DESCRIPTION OF THE METHOD:

A quiz refers to a fast and information evaluation of the knowledge of students. Teachers often give a quiz within a learning environment to assess how the learners understand a concept. Therefore, it serves as a process to understand students' insight into the subject matter. In the process, the teachers can detect any possible knowledge gaps. quizzes can help teachers assess the effectiveness of their instruction, as well as student understanding of the concepts taught.

In general, a quiz tests the knowledge of the students or learners in a class in a short period. The questionnaire usually consists of minimum ten questions. The format of the quiz may vary. It might include MCQs,

fill in the blanks, short answers, and true or false. Compared to traditional exams, they are much shorter.

BENEFITS OF THE METHOD:

- **Students tend to read the material.**
- **Students show up for class on time since the quiz always comes first.**
- **Students are placed in the right attitude for learning.**
- **Students feel more confident to discuss the material.**
- **Students raise their grades by simply reading the material.**
- **Students have a healthy debate amongst participants in order to learn from each other**

ACTIVITY DETAILS:

Topic: "Multimedia Information Representation"

Reflections:

- **Well, accepted**
- **Time taken is 20min**
- **Quiz conducted**
- **Given 15 questions to answer**

Chandrakanth won the I Prize

Ashritha won the II Prize

Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2024)

TITLE OF INNOVATION:	**FLIPPED CLASSROOM**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION (21EC745)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO CREATE INTERACTIVE LEARNING AMONG STUDENTS.**
TOPIC COVERED:	**"HUFFMAN CODING"**
CONDUCTION DATE:	**15.11.2024**

DESCRIPTION OF THE METHOD:

The Flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. The term is widely used to describe almost any class structure that provides pre-recorded lectures followed by in-class exercises. The flipped classroom is an easy model. A means to INCREASE interaction and personalized contact time between students and teachers. An environment where students take responsibility for their own learning.

Flipped classrooms provide a good alternative teaching platform. Teacher provides the content to the students in form of videos, references to websites, digital content, etc. The students go through the content in a given time frame. The learners are asked to go through a few lecture videos that create the platform for discussion in the next class. The class room is reserved for discussions on the topic and to enhance in-depth understanding of the topic, by the students. Classroom is open for discussions, where the topics are explored further, with students contributing significantly to the discussions.

This method adds a new element to help students learn with each other. The class starts with a student explaining the concept covered before class. In a flipped classroom, the teacher does not give direct instruction but provides all the help and material for students to present their work. The flipped class creates a learning space that students can explore.

BENEFITS OF THE METHOD:

- **The students will be able to learn at their own pace with more one-to-one interaction between teacher and student.**
- **This method provides more collaboration time for students. Moreover, flipped classroom changes the traditional learning culture into a learner-centered class.**
- **It helps the instructor to change from the conventional mode of teaching to newer modes, which capture the interest of the students and hold their attention.**
- **Students are given equal opportunity to share their view and ideas.**
- **Students can have prior preparation for the class.**

KEY ELEMENTS:

- **Arrange for an opportunity for students to gain first exposure prior to class.**
- **Offer an incentive for students to prepare for class.**
- **Provide a mechanism to assess student understanding**
- **Run in-class activities that focus on higher level cognitive activities.**

ACTIVITY DETAILS:

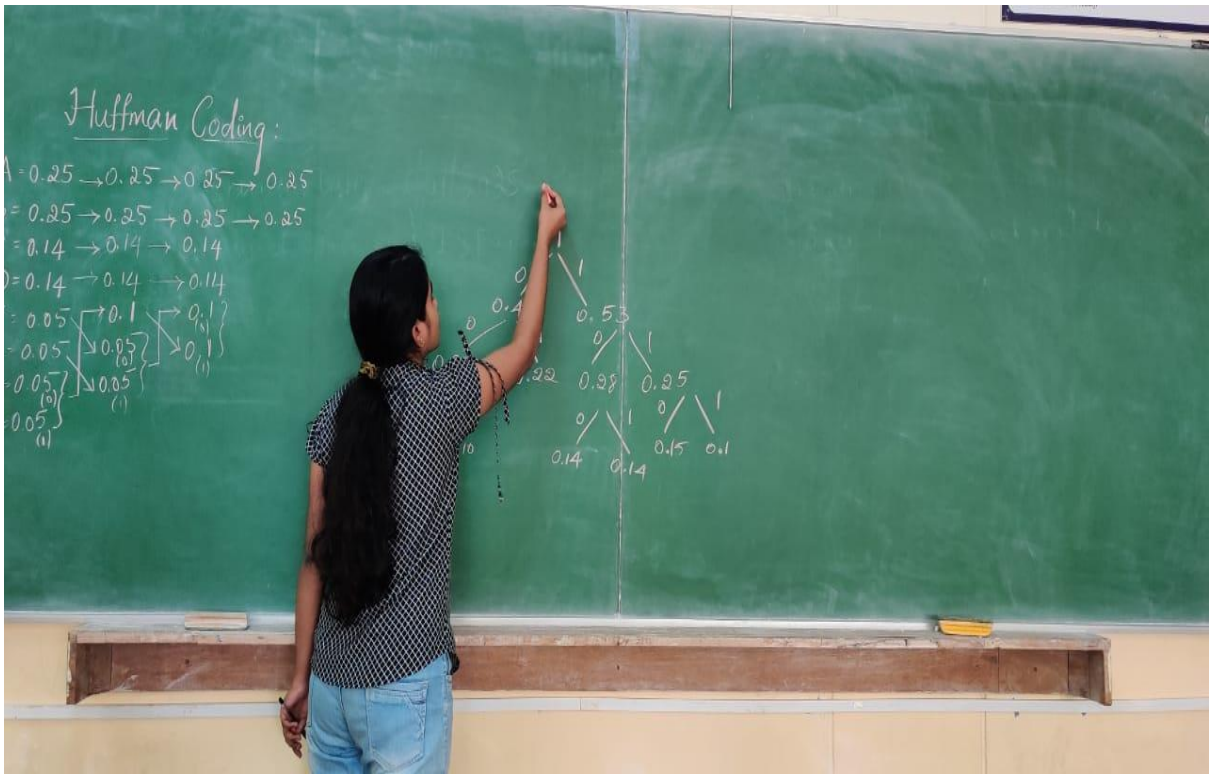
Topic: "HUFFMAN CODING"

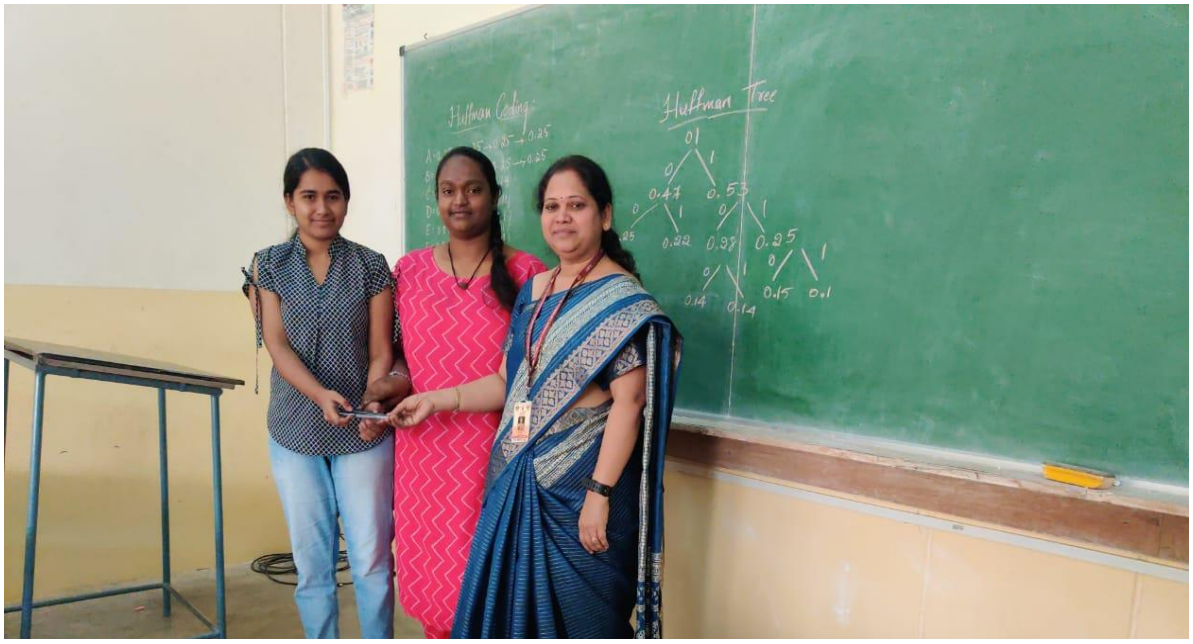
Reflections: Well accepted

- **Time taken is 30min**
- **Seminar conducted**
- **Given one problem to solve**

CHANDRIKA K P & ANKITHA D S given the Seminar


Huffman Coding:





Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2024)

TITLE OF INNOVATION:	**STAD**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION (21EC745)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN TO BE FORMED INTO GROUPS OF FOUR OR FIVE MEMBERS REPRESENTING THE STUDENTS WITH THE SKILLS AND DIFFERENT GENDERS.**
TOPIC COVERED:	**AUDIO AND VIDEO COMPRESSION**
CONDUCTION DATE:	**06.12.2024**

DESCRIPTION OF THE METHOD:

STAD stands for STUDENT TEAM ACHIEVEMENT DIVISIONS, it is a collaborative learning strategy in which small groups of learners with different levels of ability work together to accomplish a shared learning goal.

STAD is one of the systems of collaborative learning in which students learn to be formed into groups of four or five members representing the students with the skills and different genders. The teacher gives a lesson and then students work in each group to ensure that all group members have mastered the lessons given.

The complete class group of students were divided into four small groups, and the activity is conducted in the form of content focus, Group Discussion, Problem solving, Quiz, Test, Team study etc.

BENEFITS OF THE METHOD:

- **Collaborative learning Environment.**
- **Enhancing learning achievement and increasing social skills**
- **As the more students work together in collaborative groups, the more they understand, retain, and feel better about themselves and their peers.**
- **Encourages student responsibility for learning.**
- **Leadership and Self-Management Skills.**
- **Wider Range of Knowledge and Skill Acquisition.**
- **Improved Student Relationships.**
- **Better Concept Retention.**
- **Promotes Active Listening and Critical Thinking.**
- **Establish group goals and values.**

ACTIVITY DETAILS:

Topic: "VIDEO COMPRESSION STANDARDS"

Reflections: Well accepted

- **Time taken is 30min**
- **Group Discussion conducted**

Mallikarjuna Reddy Team won the First Prize

Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2024)

TITLE OF INNOVATION:	**ROUND ROBIN DISCUSSION**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION (21EC745)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"MULTIMEDIA INFORMATION NETWORKS"**
CONDUCTION DATE:	**17.12.2024**

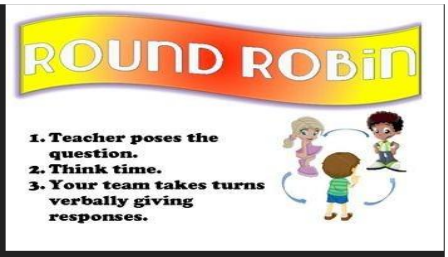
DESCRIPTION OF THE METHOD:

- The Round Robin strategy is a brainstorming strategy where students are situated around a table in an academic discussion.
- By this technique, the students can increase their understanding of the material that delivered by the teacher and discusses it with their group.
- Students generate ideas on a specific topic or question.
- The most effective thing about this strategy is that each student within the group has an equal opportunity to participate in the discussion.
- Round-Robin Brainstorming is a useful tool for having team generate ideas, without being influenced unduly by others in the group.
- This method also ensures that everyone on team gets an equal say in the ideas that they generate. We can use either the written and verbal variations of this technique.
- In small groups of 3 to 5 students, pose a problem or question and have the students go around the circle quickly sharing their ideas or answers. This technique is a good one to use for brainstorming or to elicit quick responses from students.

BENEFITS OF THE METHOD:

- Round robin brainstorming has the distinct advantage of encouraging contributions from all participants, including those who typically remain silent
- It also provides each participant an equal opportunity to voice their thoughts, and a space to present their ideas without undue influence by potentially overly-assertive
- It helps students to get collaboration and presentation skills.
- It helps students to think individually about a topic or answer to a question.
- It teaches students to share ideas with classmates and builds oral communication skills.
- It helps focus attention and engage students in comprehending the reading material.
- In round robin technique all students have responsibility to give contribution in doing the assignment. So, none will do nothing.
- Since each student answers the question, his/her understanding towards the task will be observed. The rest of the group members also can build new knowledge or concept from the previous thoughts from different members.
- The use of round robin technique in teaching learning process also can help the students create positive peer response groups. Students can learn how to respect their friends' thoughts and opinions.
- This technique is useful for reviewing materials delivered by the teacher. Students do not only get the information from the teacher but also from their peers.

ACTIVITY DETAILS:



ACTIVITY
Round Robin Discussion
(Module – 5)

- The Round Robin strategy is a brainstorming strategy where students are situated around a table in an academic discussion.
  By this technique, the students canincrease their understanding of the material that delivered by the teacher and discusses it with their group.

- Students generate ideas on a specific topic or question.
  The most effective thing about this strategy is that each student within the group has an equal opportunity to participate in the discussion

Instructions

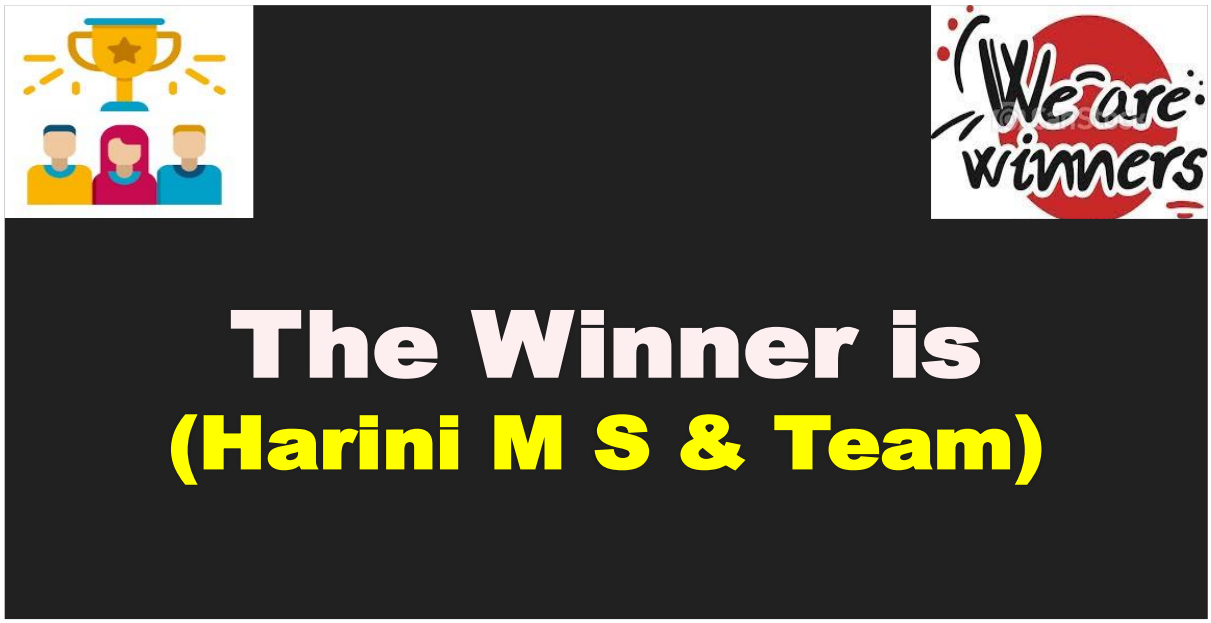
1. Five students in a team with one team leader(Mentor)
2. Each team will be given one topic and members have to discuss it in a time span of 20 minutes.
3. Any member from the team will be randomly picked by the faculty and that member should explain the topic.
4. For each team five minutes time will be given to explain.
5. The best team will be awarded.

Topics

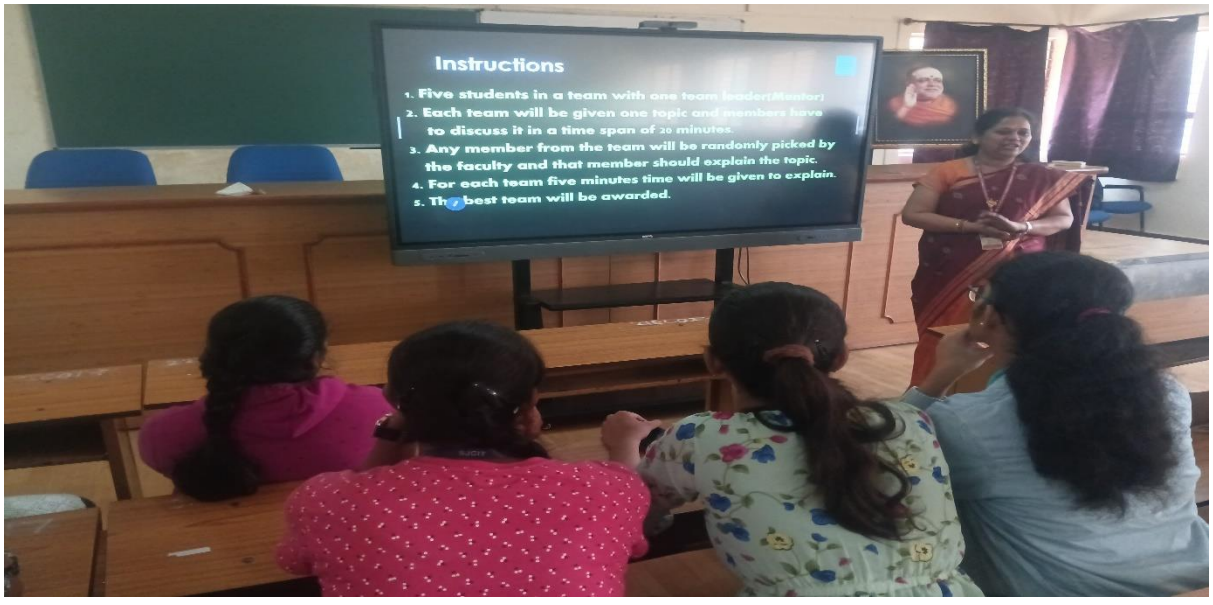
- LANs (Team 1)
- Ethernet (Team 2)
- Token Ring (Team 3)
- Bridges (Team 4)
- FDDI (Team 5)
- High-speed LANs (Team 6)
- LAN protocol(Team 7)

GOOD LUCK

Time Starts Now



ACTIVITY PHOTOS

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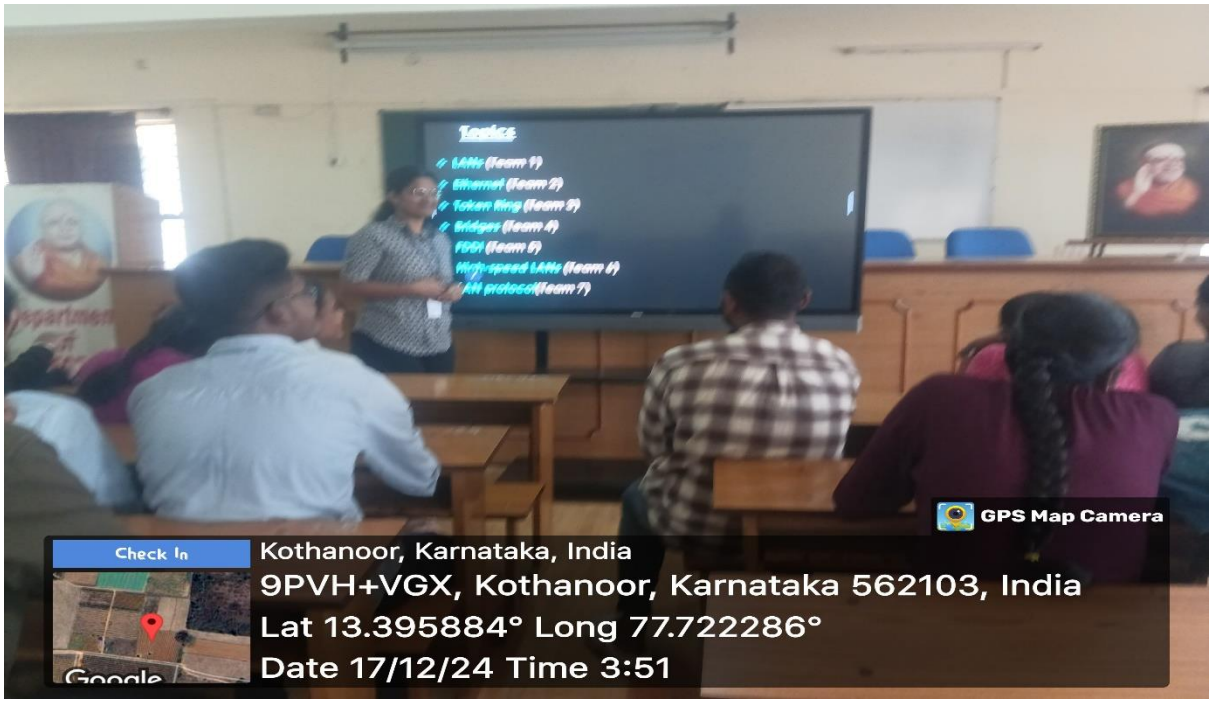
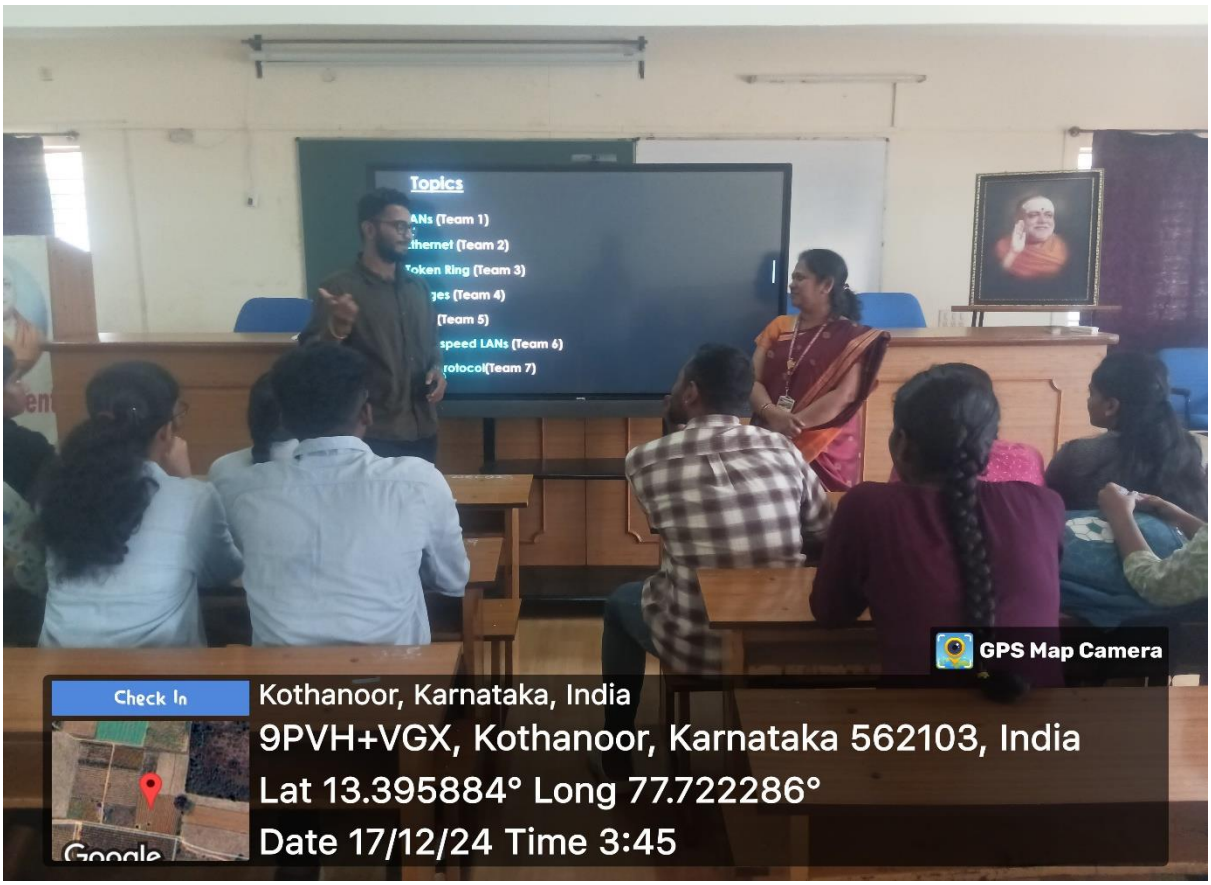




Signature of Course Faculty

|| Jai Sri Gurudev ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

BRIEF HANDS-ON TRAINING REPORT ON "MULTIMEDIA COMPRESSION TECHNIQUES USING PYTHON PROGRAMMING "

SJC Institute of Technology - Department of Electronics And Communication Engineering, has organized a Hands-On Training on "MULTIMEDIA COMPRESSION TECHNIQUES USING PYTHON PROGRAMMING" for Seventh Semester ECE Students on 7th December 2024 at 12.00PM in Einstein Lab. The program was organized to give the awareness on Programming of Multimedia Compression Techniques using Python to the students. The Resource Person for the session is Dr. Sudhir P from Department of Electronics and Communication Engineering, SJC Institute of Technology, Chickballapur. The Resource person interacted with the students, discussed different Compression techniques used for text, image, audio and video in Multimedia communication and Python programming concepts for Multimedia Compression.

The following topics were discussed.

- Introduction to Multimedia Compression
- Python for Multimedia Compression
- Hands-On Activities:
    - Text Compression
    - Image Compression
    - Audio Compression
    - Video Compression
- Applications

OUTCOMES:

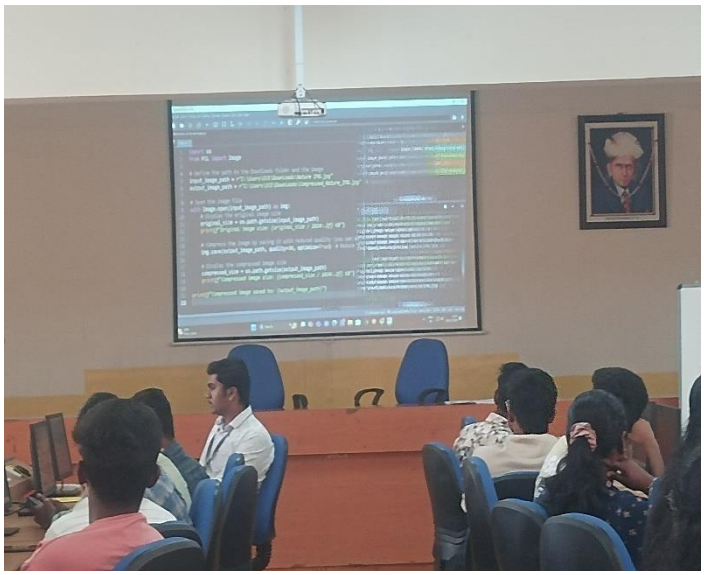
The students were able to

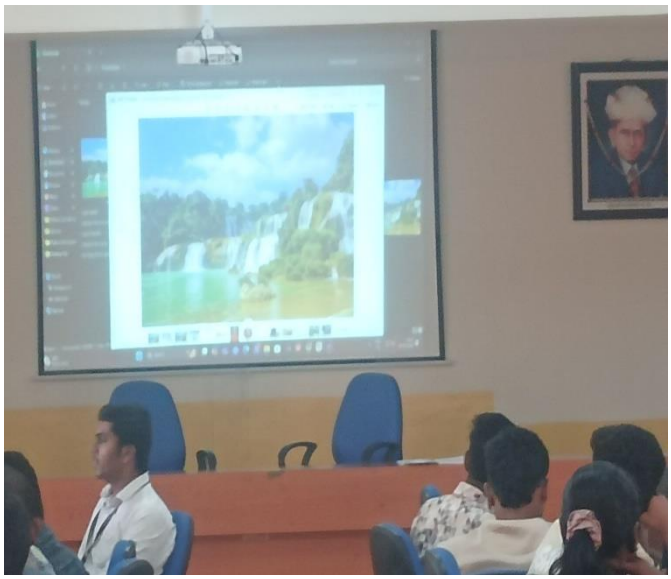
- Understand the need for multimedia compression and its significance in storage and transmission.
- Explain the basic principles and techniques used in multimedia compression.
- Develop Python scripts for implementing basic multimedia compression techniques.
- Utilize Python libraries for handling multimedia data efficiently.
- Apply and analyze compression algorithms using Python.
- Explore real-world applications of multimedia compression in streaming, gaming, and data transmission.

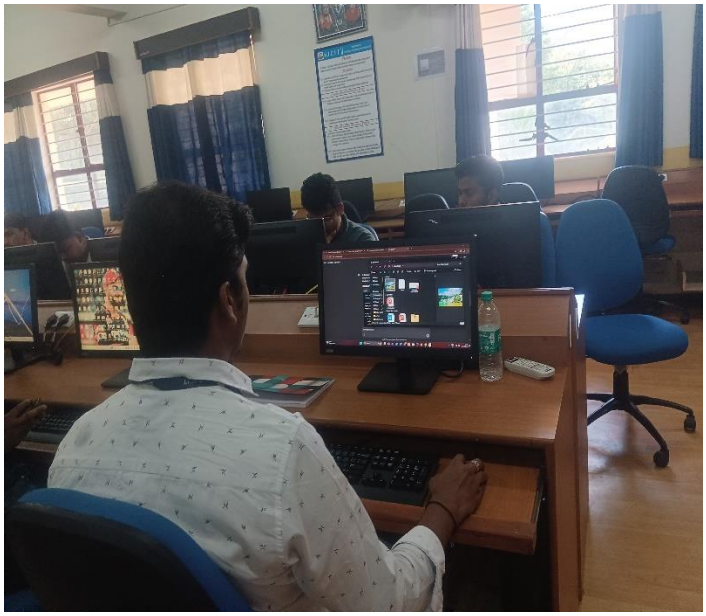
- **Evaluate the effectiveness of compression methods in various scenarios.**

EVENT BROCHURE

GLIMPSE OF EVENT PHOTOS:







COORDINATOR **HOD**

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2024)

TITLE OF INNOVATION:	**ONE MINUTE ACTIVITY**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**MULTIMEDIA COMMUNICATION (21EC745)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**MAJOR STRATEGIC COMPONENTS, SYLLABUS & INTRODUCTION**
CONDUCTION DATE:	**23.09.2024**

DESCRIPTION OF THE METHOD:

The Minute Paper is a formative assessment strategy whereby students are asked to take one minute (or more) to answer the questions. The Minute Paper refers to a fast and information evaluation of the knowledge of students. To use the Minute Paper, an instructor stops class two or three minutes early and asks students to respond briefly for few questions discussed on the topic. This activity can be performed after completion of a chapter or topic. Active learning can bring in the excitement and energy and keep away the boredom.

Teachers often give this activity within a learning environment to assess how the learners understand a concept. Therefore, it serves as a process to understand students' insight into the subject matter. In the process, the teachers can detect any possible knowledge gaps. Minute paper activity can help teachers assess the effectiveness of their instruction, as well as student understanding of the concepts taught.

BENEFITS OF THE METHOD:

- **It keeps the student engaged**
- **It can be used at the end of any topic discussion.**
- **It provides a quick and extremely simple way to collect written feedback on student learning.**
- **It is a very adaptable tool.**
- **It improves the quality of class discussion**
- **It promotes class attendance and attentiveness**
- **It builds Faculty-student rapport**

ACTIVITY DETAILS:

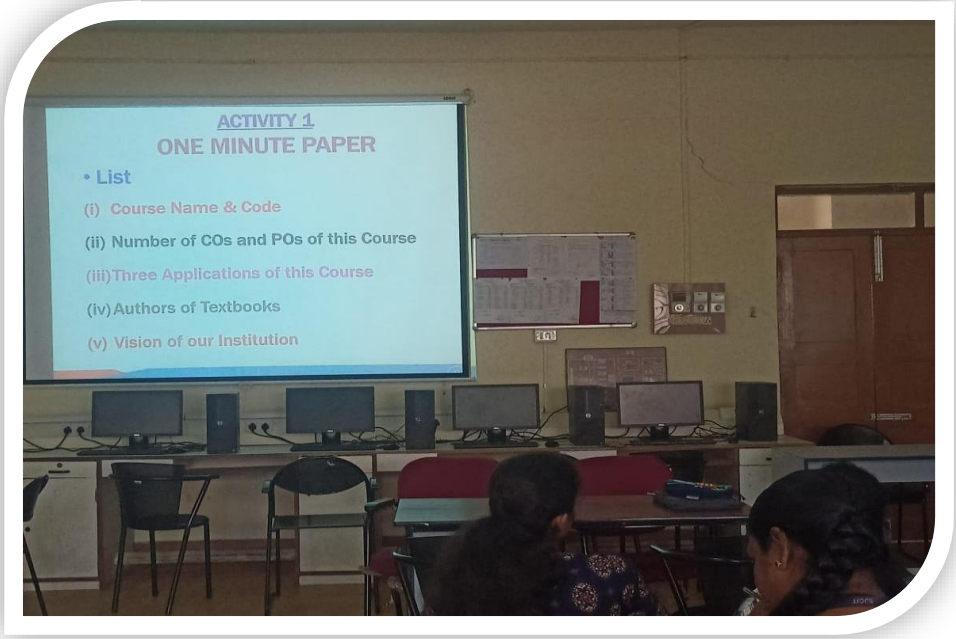
Topic:

1. **Major Strategic Components**
2. **Syllabus & Introduction**

Reflections: Well accepted

CHELUVAMBA N R won the I prize

DARSHAN S won the II prize



ORIENTATION ON OBE & ONE MINUTE PAPER ACTIVITY FOR 7TH A SECTION STUDENTS IN HDL LAB ON 23.09.2024 AT 10.00AM

Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2024)

TITLE OF INNOVATION:	**ONE MINUTE ACTIVITY**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**PRINCIPLES OF COMMUNICATION SYSTEMS (BEC402)**
SEMESTER & SECTION:	**4th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**MAJOR STRATEGIC COMPONENTS, SYLLABUS & INTRODUCTION**
CONDUCTION DATE:	**02.05.2024**

DESCRIPTION OF THE METHOD:

The Minute Paper is a formative assessment strategy whereby students are asked to take one minute (or more) to answer the questions. The Minute Paper refers to a fast and information evaluation of the knowledge of students. To use the Minute Paper, an instructor stops class two or three minutes early and asks students to respond briefly for few questions discussed on the topic. This activity can be performed after completion of a chapter or topic. Active learning can bring in the excitement and energy and keep away the boredom.

Teachers often give this activity within a learning environment to assess how the learners understand a concept. Therefore, it serves as a process to understand students' insight into the subject matter. In the process, the teachers can detect any possible knowledge gaps. Minute paper activity can help teachers assess the effectiveness of their instruction, as well as student understanding of the concepts taught.

BENEFITS OF THE METHOD:

- **It keeps the student engaged**
- **It can be used at the end of any topic discussion.**
- **It provides a quick and extremely simple way to collect written feedback on student learning.**
- **It is a very adaptable tool.**
- **It improves the quality of class discussion**
- **It promotes class attendance and attentiveness**
- **It builds Faculty-student rapport**

ACTIVITY DETAILS:

Topic:

1. **Major Strategic Components**
2. **Syllabus & Introduction**

Reflections: Well accepted

ABHI S V & BHAVANA B M won the I prize

DHANUSH won the II prize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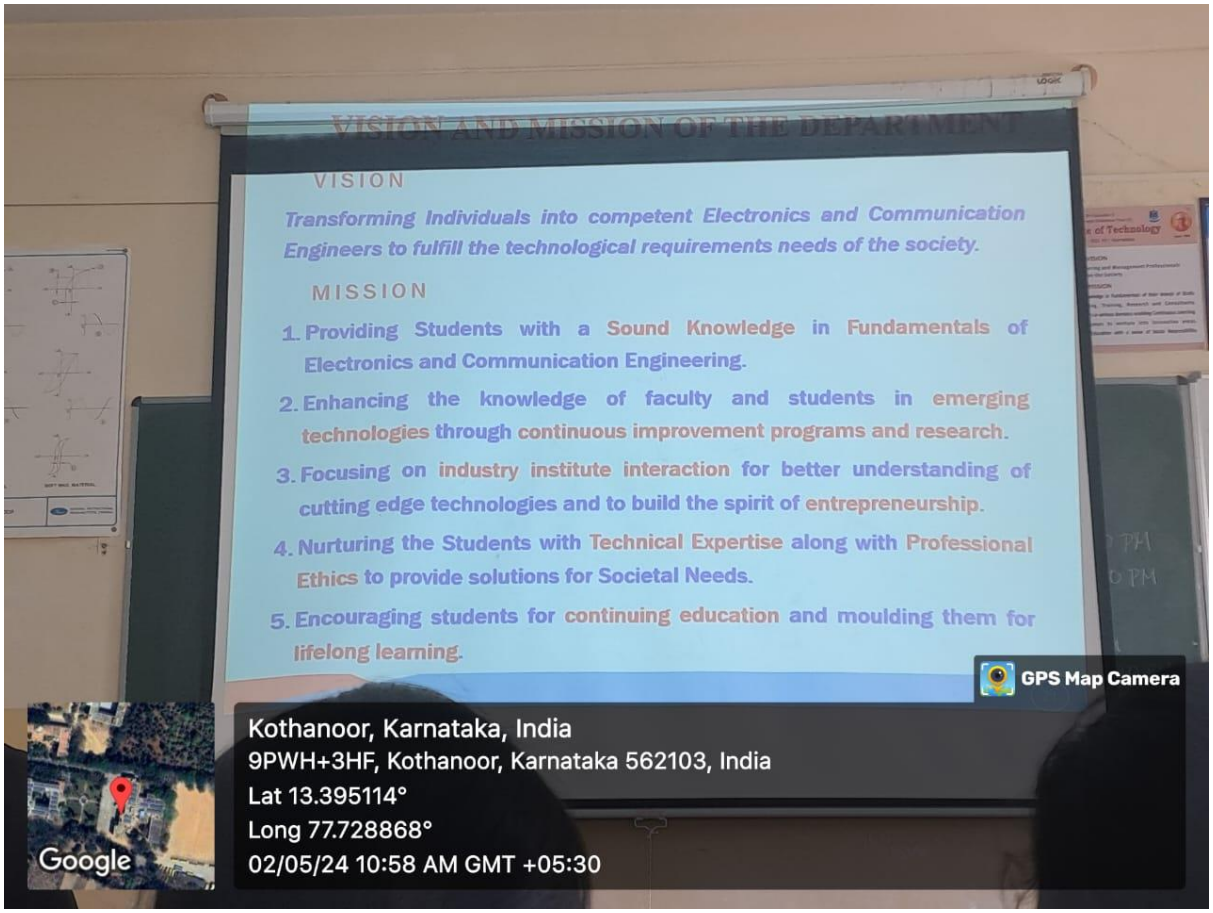
VISION AND MISSION OF THE DEPARTMENT
VISION
Transforming Individuals into competent Electronics and Communication Engineers to fulfill the technological requirements needs of the society.
MISSION
1. Providing Students with a Sound Knowledge in Fundamentals of Electronics and Communication Engineering.
2. Enhancing the knowledge of faculty and students in emerging technologies through continuous improvement programs and research.
3. Focusing on industry institute interaction for better understanding of cutting edge technologies and to build the spirit of entrepreneurship.
4. Nurturing the Students with Technical Expertise along with Professional Ethics to provide solutions for Societal Needs.
5. Encouraging students for continuing education and moulding them for lifelong learning.
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Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2024)

TITLE OF INNOVATION:	**PROBLEM SOLVING EXERCISE**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**PRINCIPLES OF COMMUNICATION SYSTEMS (BEC402)**
SEMESTER & SECTION:	**4th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS SOLVE THE NUMERICALS BY DOING AN ACTIVITY**
TOPIC COVERED:	**PROBABILITY**
CONDUCTION DATE:	**16.05.2024**

DESCRIPTION OF THE METHOD:

Problem-solving is a mental process that involves discovering, analyzing and solving problems. Solving problems involve both analytical and critical thinking skills.

Problem-solving exercise helps students to apply the concepts in solving the numericals. They learn to analyze options and have to come up with a way to solve any challenges they come across. These problem-solving skills are a great benefit in their day to day lives and can help them to solve real-life situations.

BENEFITS OF THE METHOD:

- **Better understanding of different concepts.**
- **Improve the decision-making ability to choose a better design for a given problem.**
- **Benefits young minds with critical thinking skills, creativity, and confidence.**

ACTIVITY DETAILS:

NUMERICALS

"PROBABILITY

PROBLEM SOLVING EXERCISE

- Problem-solving is a mental process that involves discovering, analyzing and solving problems.
- Solving problems involve both analytical and critical thinking skills.

2

ACTIVITY (PROBLEM SOLVING EXERCISE)

- **Solve all the problems given**
- **Time given is 40 Min**
- **The student who will complete all the problems correctly within the specified time, will be appreciated with a Prize**

3

1. An experiment is repeated number of times as shown in below. Find the probability of each event.

Random Experiment	Getting Head
1	1
10	6
100	50

2. Suppose a coin is flipped 3 times. What is the probability of getting two tails and one head?

3. If two coins tossed simultaneously, determine the probability of obtaining exactly two heads.

4. Let A and B are events of a experiment such that P(A) = 3/10, P(B) = 1/2 and P(B|A) = 2/5. Find the value of (i) P(A ∩ B) (ii) P(A|B) (iii) P(A U B)

5. A family has two children. It is known that at least one of the children is a girl. What is the probability that both the children are girls?

6. An urn contains 6 red marbles and 4 black marbles. Two marbles are drawn without replacement from the urn. What is the probability that both of the marbles are black?

5

ANSWERS

1. Relative frequency:

$$P(A) = \lim_{n\to\infty} \frac{n_A}{n}; \quad 0 \le P(A) \le 1$$

$$P(A) = \frac{M}{N} = \frac{1}{1} = 1; \qquad P(B) = \frac{M}{N} = \frac{6}{10}; \qquad P(C) = \frac{M}{N} = \frac{50}{100}$$

2. **For this experiment, the sample space consists of 8 sample points.**

S = {TTT, TTH, THT, THH, HTT, HTH, HHT, HHH}

Each sample point is equally likely to occur, so the probability of getting any particular sample point is 1/8. The event "getting two tails and one head" consists of the following subset of the sample space.

A = {TTH, THT, HTT}

The probability of Event A is the sum of the probabilities of the sample points in A.

Therefore, P(A) = 1/8 + 1/8 + 1/8 = 3/8

6

3. Number of sample points = 2 × 2 = 4

S = {(T, T),(T, H),(H, T),(H, H)}; P(getting two heads) = 1/ 4

4. We know that $P(A|B) = P(A \cap B)/P(B) \Rightarrow P(A \cap B) = P(A|B).P(B)$

(i) $P(A \cap B) = P(B|A).P(A) = \frac{2}{3} \times 3/10 = 3/25$

(ii) $P(A|B) = P(A \cap B)/P(B) = (3/25) \div (½) = 6/25$

(iii) $P(A \cup B) = P(A) + P(B) - P(A \cap B) = 3/10 + ½ - 3/25 = 17/25.$

7

5. *A = event of at least one girl ;* *B* = event of two girl

S={gg, gb, bg, bb},

A={gg, gb, bg}= least one of the children is a girl,

B ={gg} = probability of both the children are girls

$P(B|A) = P(A \cap B) /P(A) = (¼)/ (¾) = 1/3$

6. Let A = the event that the first marble is black; and let B = the event that the second marble is black.

We know the following:

- In the beginning, there are 10 marbles in the urn, 4 of which are black. Therefore, P(A) = 4/10.
- After the first selection, there are 9 marbles in the urn, 3 of which are black. Therefore, P(B|A) = 3/9.
- Therefore, based on the rule of multiplication:

$P(A \cap B) = P(A)\ P(B|A)$

$P(A \cap B) = (4/10) * (3/9) = 12/90 = 2/15$

8

Was conducted on 16.05.2024

Topic: "PROBABLILITY"

Reflections: Well accepted

Amaresh & D Nisarga won the I prize


PROBLEM SOLVING EXERCISE
- Problem-solving is a mental process that involves discovering, analyzing and solving problems.
- Solving problems involve both analytical and critical thinking skills.
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4. Let A and B are events of a experiment such that P(A) = 3/10, P(B) = 1/2 and P(B|A) = 2/5. Find the value of (i) P(A ∩ B) (ii) P(A|B) (iii) P(A ∪ B)
5. A family has two children. It is known that at least one of the children is a girl. What is the probability that both the children are girls?
6. An urn contains 6 red marbles and 4 black marbles. Two marbles are drawn without replacement from the urn. What is the probability that both of the marbles are black?
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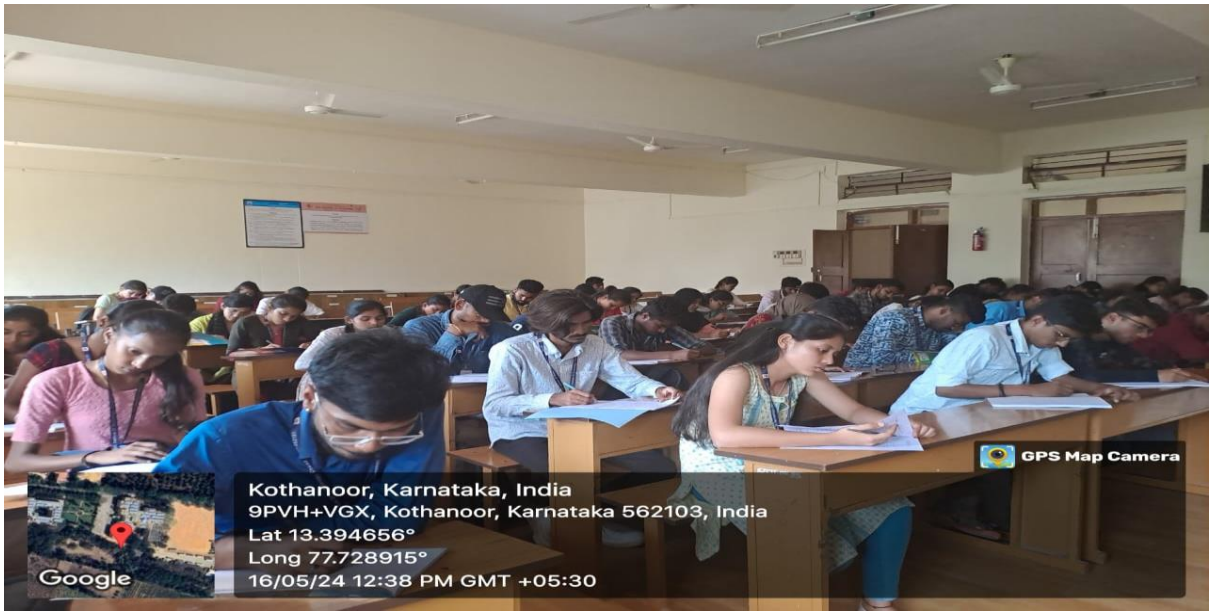
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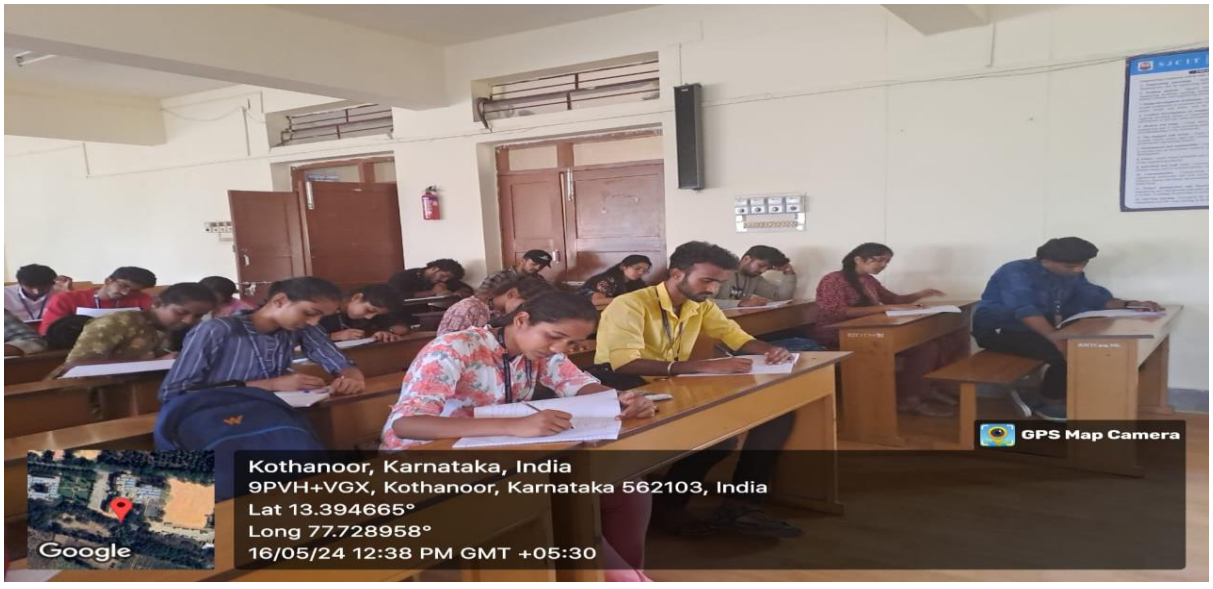
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Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2024)

TITLE OF INNOVATION:	**THINK PAIR SHARE**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**PRINCIPLES OF COMMUNICATION SYSTEMS (BEC402)**
SEMESTER & SECTION:	**4th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"AMPLITUDE MODULATORS AND DEMODULATORS"**
CONDUCTION DATE:	**21.05.2024**

DESCRIPTION OF THE METHOD:

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Think-Pair-Share (TPS) is a cooperative learning activity that can work in varied size classrooms and in any subject. Instructors pose a question, students first THINK to themselves prior to being instructed to discuss their response with a person sitting near them (PAIR).

Think-pair-share is a technique that encourages and allows for individual thinking, collaboration, and presentation in the same activity. Students must first answer a prompt on their own, then come together in pairs or small groups, then share their discussion and decision with the class. Discussing an answer first with a partner before sharing maximizes participation, and helps to focus attention on the prompt given. Using the think-pair-share technique allows students time for individual reflection, thinking, and processing new information before they may be influenced by other students' answers. This

process also teaches students how to explain their thoughts first to a peer, and then to a larger audience (the entire class).

Faculty explains the technique to the students before beginning the exercise: describe the purpose, set discussion guidelines and time limits, and model the strategy to ensure that students know what is expected of them.

Step 1: Think

Begin with a specific question, and give students time to individually think about an answer, and document their responses on their own. Students can be given 1-3 minutes for this part of the exercise.

Step 2: Pair

Students now get into pairs. Ask the students to share what they came up with, with their partners and discuss. This part of the activity can take at least 5 minutes.

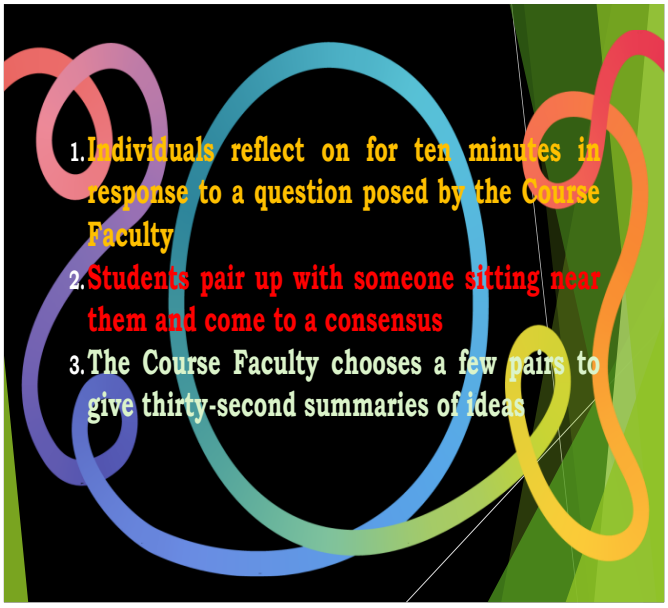
Step 3: Share

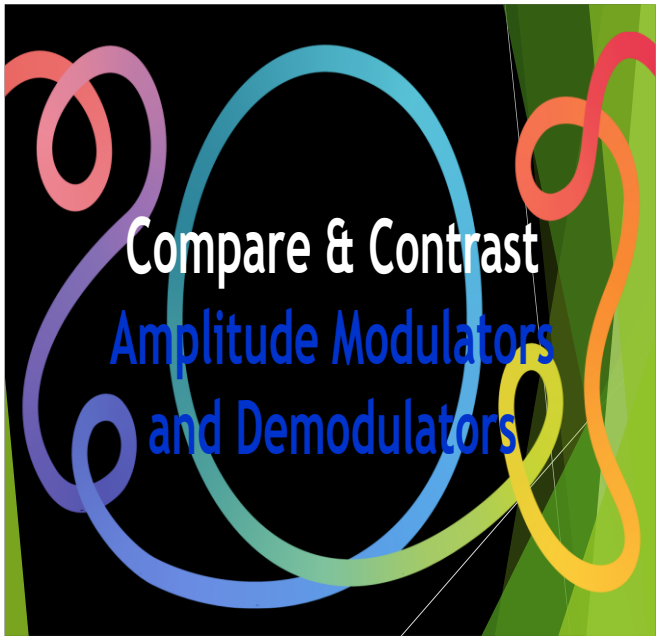
For this part, come back together as a class and have a whole class discussion. We can either choose to have one person from each pair share with the class, or the discussion can be more open. Students can also share with the class what their partner said.

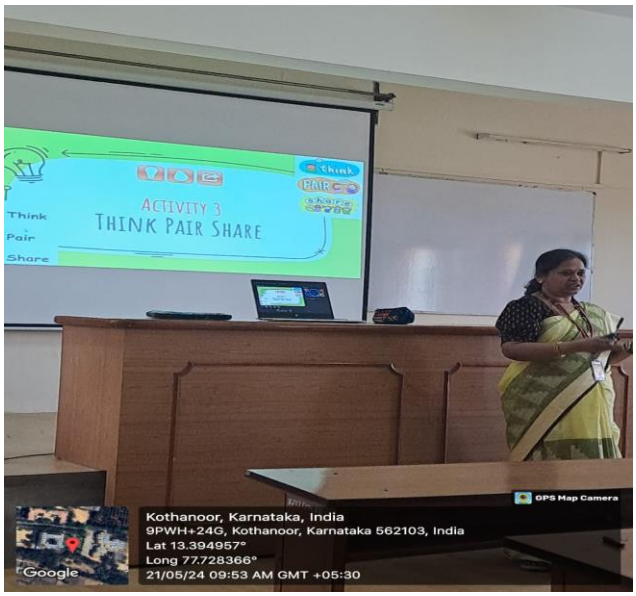
BENEFITS OF THE METHOD:

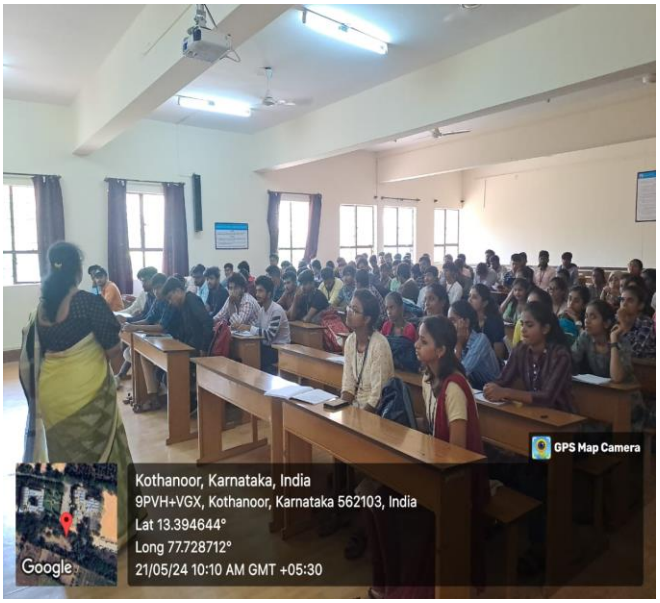
- It enhances students' critical thinking skills, improves listening and reading comprehension
- It helps students to get collaboration and presentation skills.
- It benefits the students who are typically shy may feel more comfortable sharing with the class after sharing with a partner,
- It promotes students who are outspoken to get benefit from first listening to others before sharing their own opinion.
- It helps students to think individually about a topic or answer to a question.
- It teaches students to share ideas with classmates and builds oral communication skills.
- It helps focus attention and engage students in comprehending the reading material.

ACTIVITY DETAILS:









Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2024)

TITLE OF INNOVATION:	**FLIPPED CLASSROOM**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**PRINCIPLES OF COMMUNICATION SYSTEMS (BEC402)**
SEMESTER & SECTION:	**4th A**
OBJECTIVE OF THE METHOD:	**TO CREATE INTERACTIVE LEARNING AMONG STUDENTS.**
TOPIC COVERED:	**"FREQUENCY DIVISION MULTIPLEXING"**
CONDUCTION DATE:	**30.05.2024**

DESCRIPTION OF THE METHOD:

The Flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. The term is widely used to describe almost any class structure that provides pre-recorded lectures followed by in-class exercises. The flipped classroom is an easy model. A means to INCREASE interaction and personalized contact time between students and teachers. An environment where students take responsibility for their own learning.

Flipped classrooms provide a good alternative teaching platform. Teacher provides the content to the students in form of videos, references to websites, digital content, etc. The students go through the content in a given time frame. The learners are asked to go through a few lecture videos that create the platform for discussion in the next class. The class room is reserved for discussions on the topic and to enhance in-depth understanding of the topic, by the students. Classroom is open for discussions, where the topics are explored further, with students contributing significantly to the discussions.

This method adds a new element to help students learn with each other. The class starts with a student explaining the concept covered before class. In a flipped classroom, the teacher does not give direct instruction but provides all the help and material for students to present their work. The flipped class creates a learning space that students can explore.

BENEFITS OF THE METHOD:

- **The students will be able to learn at their own pace with more one-to-one interaction between teacher and student.**
- **This method provides more collaboration time for students. Moreover, flipped classroom changes the traditional learning culture into a learner-centered class.**
- **It helps the instructor to change from the conventional mode of teaching to newer modes, which capture the interest of the students and hold their attention.**
- **Students are given equal opportunity to share their view and ideas.**
- **Students can have prior preparation for the class.**

KEY ELEMENTS:

- **Arrange for an opportunity for students to gain first exposure prior to class.**
- **Offer an incentive for students to prepare for class.**
- **Provide a mechanism to assess student understanding**
- **Run in-class activities that focus on higher level cognitive activities.**

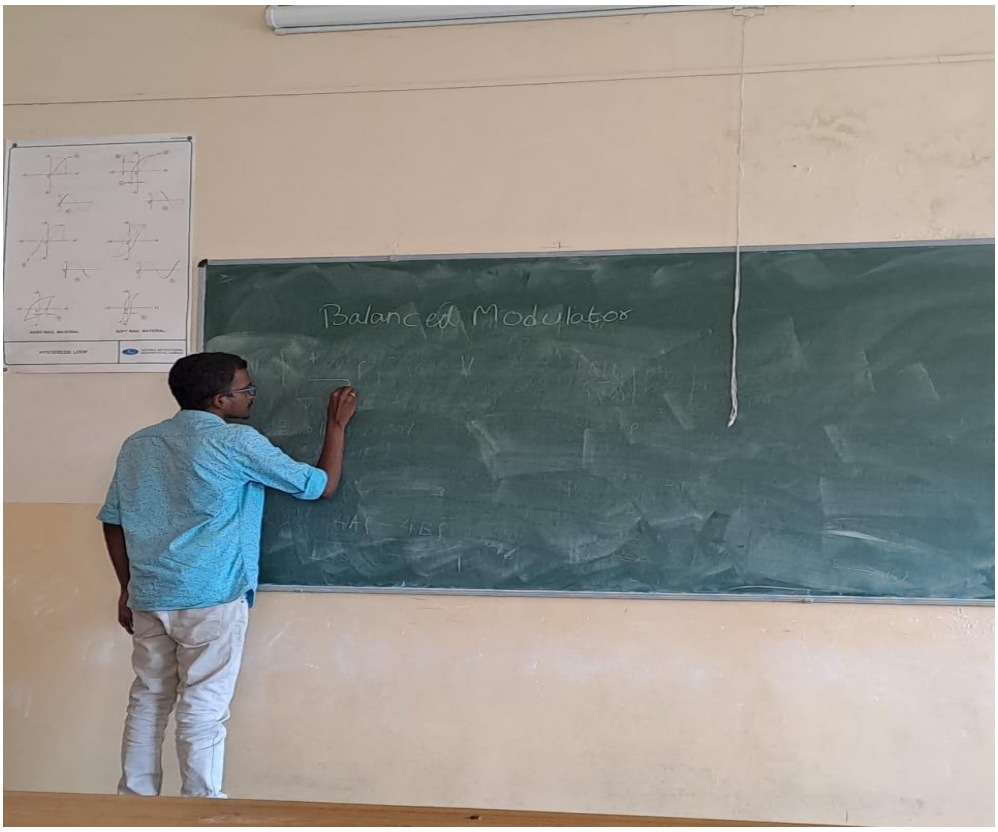
ACTIVITY DETAILS:

Topic: "FREQUENCY DIVISION MULTIPLEXING"

Reflections: Well accepted

- **Time taken is 40min**
- **Seminar conducted**
- **Given one topic to present**

SIDDARTH, AMBIKA, BHAVANA given the Seminar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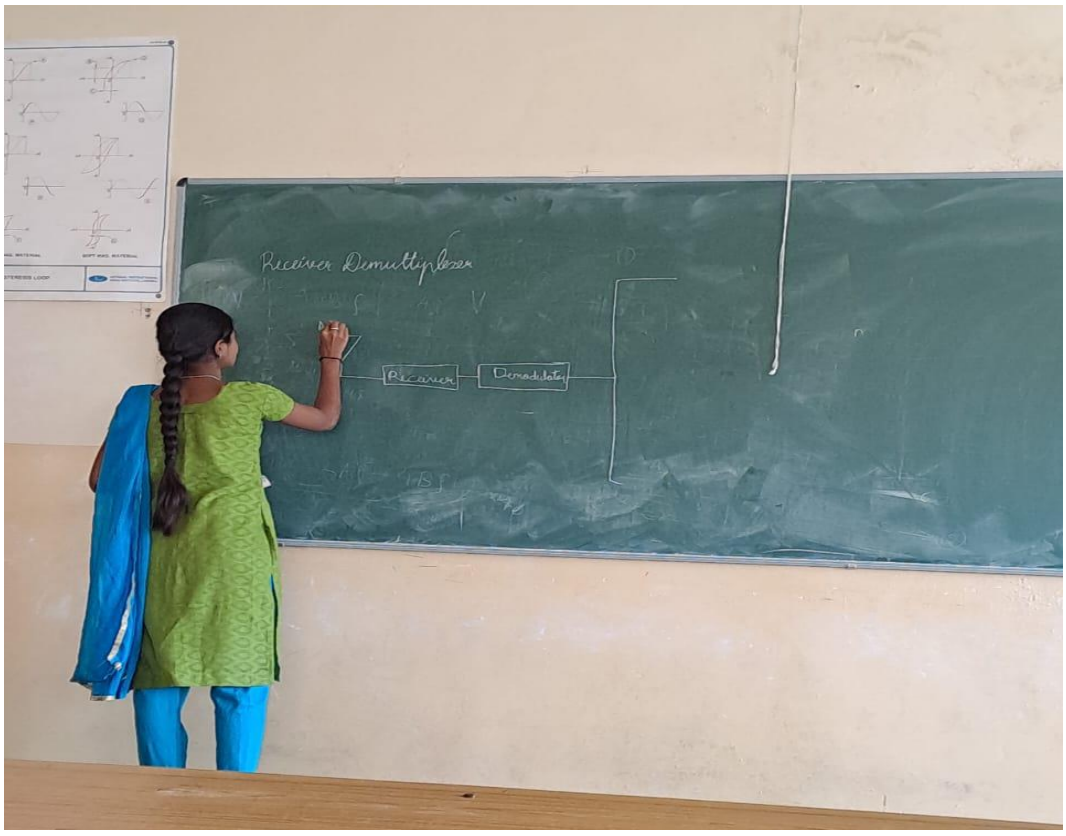


Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2024)

TITLE OF INNOVATION:	**THINK PAIR SHARE**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**PRINCIPLES OF COMMUNICATION SYSTEMS (BEC402)**
SEMESTER & SECTION:	**4th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"COMPARE FM & AM"**
CONDUCTION DATE:	**20.06.2024**

DESCRIPTION OF THE METHOD:

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Think-Pair-Share (TPS) is a cooperative learning activity that can work in varied size classrooms and in any subject. Instructors pose a question, students first THINK to themselves prior to being instructed to discuss their response with a person sitting near them (PAIR).

Think-pair-share is a technique that encourages and allows for individual thinking, collaboration, and presentation in the same activity. Students must first answer a prompt on their own, then come together in pairs or small groups, then share their discussion and decision with the class. Discussing an answer first with a partner before sharing maximizes participation, and helps to focus attention on the prompt given. Using the think-pair-share technique allows students time for individual reflection, thinking, and processing new information before they may be influenced by other students' answers. This

process also teaches students how to explain their thoughts first to a peer, and then to a larger audience (the entire class).

Faculty explains the technique to the students before beginning the exercise: describe the purpose, set discussion guidelines and time limits, and model the strategy to ensure that students know what is expected of them.

Step 1: Think

Begin with a specific question, and give students time to individually think about an answer, and document their responses on their own. Students can be given 1-3 minutes for this part of the exercise.

Step 2: Pair

Students now get into pairs. Ask the students to share what they came up with, with their partners and discuss. This part of the activity can take at least 5 minutes.

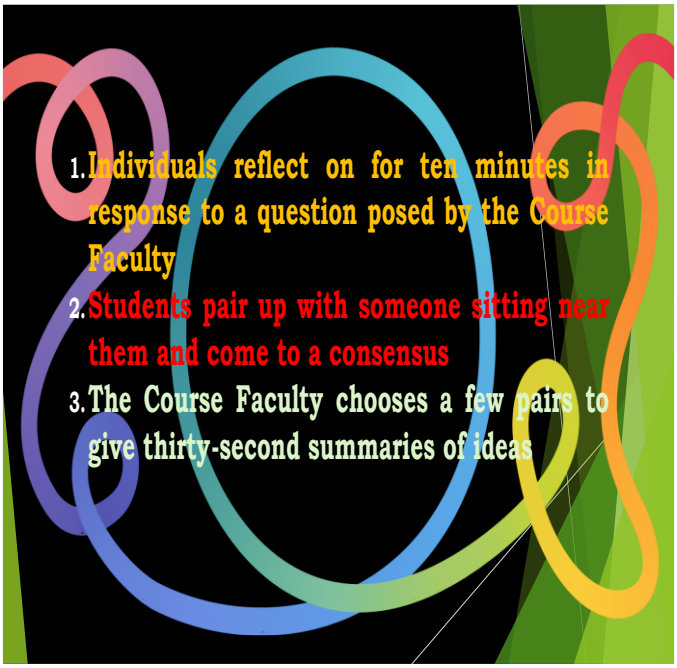
Step 3: Share

For this part, come back together as a class and have a whole class discussion. We can either choose to have one person from each pair share with the class, or the discussion can be more open. Students can also share with the class what their partner said.

BENEFITS OF THE METHOD:

- It enhances students' critical thinking skills, improves listening and reading comprehension
- It helps students to get collaboration and presentation skills.
- It benefits the students who are typically shy may feel more comfortable sharing with the class after sharing with a partner,
- It promotes students who are outspoken to get benefit from first listening to others before sharing their own opinion.
- It helps students to think individually about a topic or answer to a question.
- It teaches students to share ideas with classmates and builds oral communication skills.
- It helps focus attention and engage students in comprehending the reading material.

ACTIVITY DETAILS:



Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2024)

TITLE OF INNOVATION:	**STAD**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**PRINCIPLES OF COMMUNICATION SYSTEMS (BEC402)**
SEMESTER & SECTION:	**4th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN TO BE FORMED INTO GROUPS OF FOUR OR FIVE MEMBERS REPRESENTING THE STUDENTS WITH THE SKILLS AND DIFFERENT GENDERS.**
TOPIC COVERED:	**MODULE 4 (DIGITAL REPRESENTATION OF ANALOG SIGNALS)**
CONDUCTION DATE:	**15.07.2024**

DESCRIPTION OF THE METHOD:

STAD stands for STUDENT TEAM ACHIEVEMENT DIVISIONS, it is a collaborative learning strategy in which small groups of learners with different levels of ability work together to accomplish a shared learning goal.

STAD is one of the systems of collaborative learning in which students learn to be formed into groups of four or five members representing the students with the skills and different genders. The teacher gives a lesson and then students work in each group to ensure that all group members have mastered the lessons given.

The complete class group of students were divided into four small groups, and the activity is conducted in the form of content focus, Group Discussion, Problem solving, Quiz, Test, Team study etc.

BENEFITS OF THE METHOD:

- **Collaborative learning Environment.**
- **Enhancing learning achievement and increasing social skills**
- **As the more students work together in collaborative groups, the more they understand, retain, and feel better about themselves and their peers.**
- **Encourages student responsibility for learning.**
- **Leadership and Self-Management Skills.**
- **Wider Range of Knowledge and Skill Acquisition.**
- **Improved Student Relationships.**
- **Better Concept Retention.**
- **Promotes Active Listening and Critical Thinking.**
- **Establish group goals and values.**

ACTIVITY DETAILS:

Topic: "DIGITAL REPRESENTATION OF ANALOG SIGNALS"

Reflections: Well accepted

- **Time taken is 50min**
- **Group Discussion conducted**

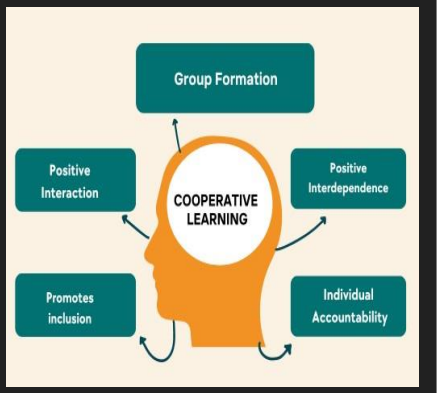
ANBAR SABAHATH Team won the First Prize

Instructions

1. Seven students in a team with one team leader(Mentor)
2. Each team will be given one topic and members have to discuss it in a time span of 15 minutes.
3. Any member from the team will be randomly picked by the faculty and that member should explain the topic.
4. For each team five minutes time will be given to explain.
5. The best team will be awarded.

Topics

- Why Digitize Analog Sources? (Team 1)
- The Sampling process (Team 2)
- Pulse Amplitude Modulation (Team 3)
- Time Division Multiplexing (Team 4)
- Pulse-Position Modulation (Team 5)
- The Quantization Process (Team 6)
- Pulse Code Modulation (Team 7)
- PCM: Line Codes (Team 8)




ACTIVITY
STAD(Student Teams Achievement Divisions)
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STAD is a Cooperative learning strategy in which small groups of learners with different levels of ability work together to accomplish a shared learning goal. By this method, the students can increase their understanding of the materia that delivered by the teacher and discusses it with their group.
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (EVEN SEM 2024)

TITLE OF INNOVATION:	**ROUND ROBIN DISCUSSION**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**PRINCIPLES OF COMMUNICATION SYSTEMS (BEC402)**
SEMESTER & SECTION:	**4th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"BASEBAND TRANSMISSION OF DIGITAL SIGNALS"**
CONDUCTION DATE:	**27.07.2024**

DESCRIPTION OF THE METHOD:

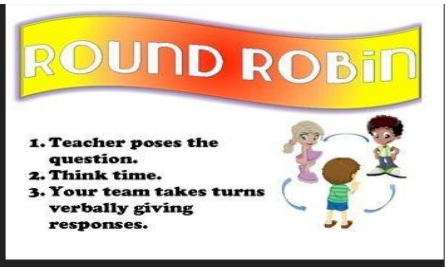
- The Round Robin strategy is a brainstorming strategy where students are situated around a table in an academic discussion.
- By this technique, the students can increase their understanding of the material that delivered by the teacher and discusses it with their group.
- Students generate ideas on a specific topic or question.
- The most effective thing about this strategy is that each student within the group has an equal opportunity to participate in the discussion.
- Round-Robin Brainstorming is a useful tool for having team generate ideas, without being influenced unduly by others in the group.
- This method also ensures that everyone on team gets an equal say in the ideas that they generate. We can use either the written and verbal variations of this technique.
- In small groups of 3 to 5 students, pose a problem or question and have the students go around the circle quickly sharing their ideas or

answers. This technique is a good one to use for brainstorming or to elicit quick responses from students.

BENEFITS OF THE METHOD:

- Round robin brainstorming has the distinct advantage of encouraging contributions from all participants, including those who typically remain silent
- It also provides each participant an equal opportunity to voice their thoughts, and a space to present their ideas without undue influence by potentially overly-assertive
- It helps students to get collaboration and presentation skills.
- It helps students to think individually about a topic or answer to a question.
- It teaches students to share ideas with classmates and builds oral communication skills.
- It helps focus attention and engage students in comprehending the reading material.
- In round robin technique all students have responsibility to give contribution in doing the assignment. So, none will do nothing.
- Since each student answers the question, his/her understanding towards the task will be observed. The rest of the group members also can build new knowledge or concept from the previous thoughts from different members.
- The use of round robin technique in teaching learning process also can help the students create positive peer response groups. Students can learn how to respect their friends' thoughts and opinions.
- This technique is useful for reviewing materials delivered by the teacher. Students do not only get the information from the teacher but also from their peers.

ACTIVITY DETAILS:



ACTIVITY
Round Robin Discussion
(Module – 5)

- The Round Robin strategy is a brainstorming strategy where students are situated around a table in an academic discussion.
  By this technique, the students canincrease their understanding of the material that delivered by the teacher and discusses it with their group.

- Students generate ideas on a specific topic or question.
  The most effective thing about this strategy is that each student within the group has an equal opportunity to participate in the discussion

Instructions

1. Five students in a team with one team leader(Mentor)
2. Each team will be given one topic and members have to discuss it in a time span of 20 minutes.
3. Any member from the team will be randomly picked by the faculty and that member should explain the topic.
4. For each team five minutes time will be given to explain.
5. The best team will be awarded.

Topics

- Intersymbol Interference (Team 1)
- Eye Pattern (Team 2)
- Nyquist criterion for distortionless Transmission (Team 3)
- Baseband M-ary PAM Transmission (Team 4)
- Signal to Noise Ratio (Team 5)
- Types of Noise (Team 6)
- Expressing Noise Levels (Team 7)
- Noise in Cascade Stages (Team 8)

GOOD LUCK

Time Starts Now

The Winner is (Deeksha Reddy M & Team)

Signature of Course Faculty

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2023)

TITLE OF INNOVATION:	**STAD**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**COMPUTER NETWORKS (18EC71)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN TO BE FORMED INTO GROUPS OF FOUR OR FIVE MEMBERS REPRESENTING THE STUDENTS WITH THE SKILLS AND DIFFERENT GENDERS.**
TOPIC COVERED:	**PATH VECTOR ROUTING**
CONDUCTION DATE:	**29.11.2023**

DESCRIPTION OF THE METHOD:

STAD stands for STUDENT TEAM ACHIEVEMENT DIVISIONS, it is a collaborative learning strategy in which small groups of learners with different levels of ability work together to accomplish a shared learning goal.

STAD is one of the systems of collaborative learning in which students learn to be formed into groups of four or five members representing the students with the skills and different genders. The teacher gives a lesson and then students work in each group to ensure that all group members have mastered the lessons given.

The complete class group of students were divided into four small groups, and the activity is conducted in the form of content focus, Group Discussion, Problem solving, Quiz, Test, Team study etc.

BENEFITS OF THE METHOD:

- **Collaborative learning Environment.**
- **Enhancing learning achievement and increasing social skills**
- **As the more students work together in collaborative groups, the more they understand, retain, and feel better about themselves and their peers.**
- **Encourages student responsibility for learning.**
- **Leadership and Self-Management Skills.**
- **Wider Range of Knowledge and Skill Acquisition.**
- **Improved Student Relationships.**
- **Better Concept Retention.**
- **Promotes Active Listening and Critical Thinking.**
- **Establish group goals and values.**

ACTIVITY DETAILS:

Topic: "APPLICATION LAYER PROTOCOLS"

Reflections: Well accepted

- **Time taken is 50min**
- **Group Discussion conducted**

Niketh Team won the First Prize

Prem Kumar Team won the Second Prize


STAD
Student Teams-
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SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2023)

TITLE OF INNOVATION:	**WHO AM I**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**COMPUTER NETWORKS (18EC71)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS IDENTIFY THE COMPONENTS BY DOING AN ACTIVITY**
TOPIC COVERED:	**PHYSICAL STRUCTURES & TOPOLOGY IDENTIFICATION**
CONDUCTION DATE:	**12.10.2023**

DESCRIPTION OF THE METHOD:

WHO AM I is the method to identify the components studied in previous classes. It helps students to remember the components or elements discussed earlier. In this method few components are shown in the class and the students are asked to identify the component in a stipulated time and the marks will be awarded for each correct answer.

BENEFITS OF THE METHOD:

- **Students will be able to define the word identity**
- **Students will be able to identify various physical structures & Topologies**
- **It gives a visual impression to the students and help in remembering the physical structures & Topologies more clearly.**
- **Get acquainted with the topology & structures of Computer Networks**

ACTIVITY DETAILS:

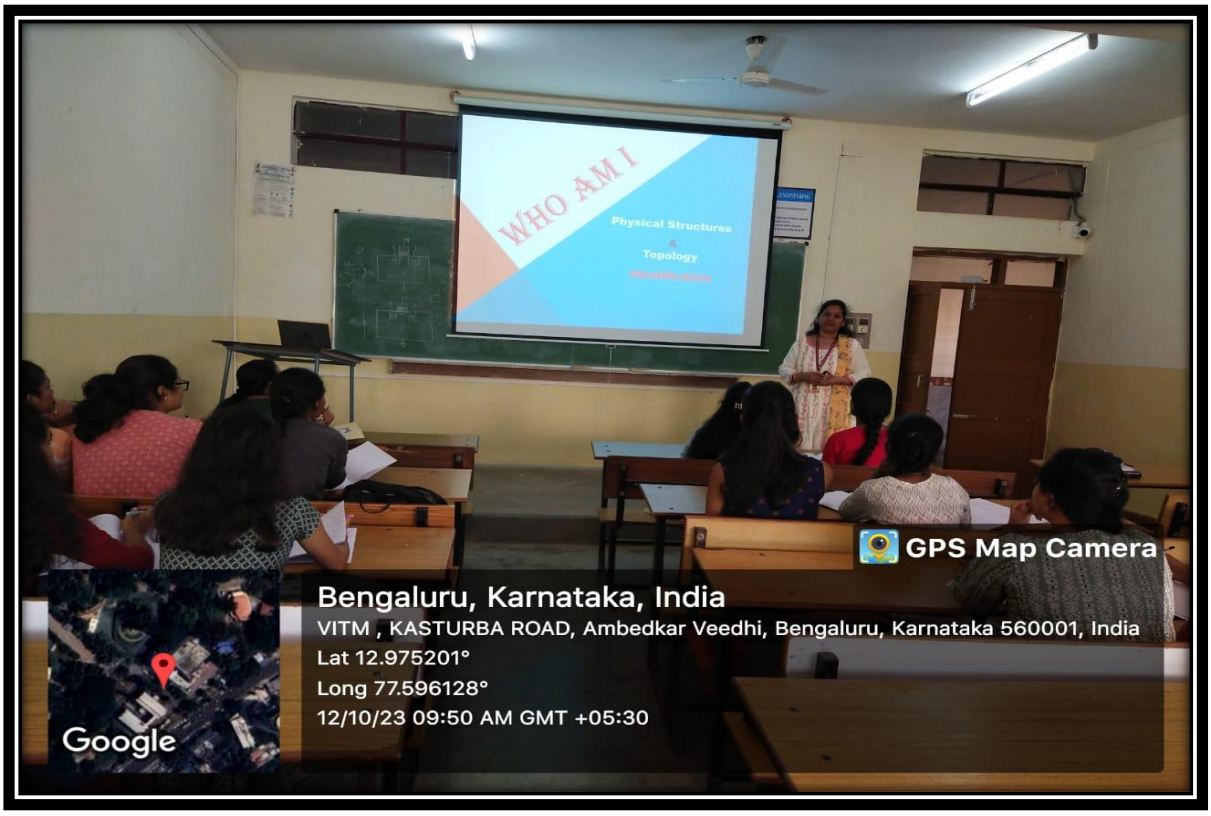
Was conducted on 12.10.23

Topic:"Physical Structures & Topology Identification"

Reflections: Well accepted

Niketh won the I prize

ACTIVITY PHOTOS:

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2023)

TITLE OF INNOVATION:	**PROBLEM SOLVING EXERCISE**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**COMPUTER NETWORKS(18EC71)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS SOLVE THE NUMERICALS BY DOING AN ACTIVITY**
TOPIC COVERED:	**ALOHA & CSMA**
CONDUCTION DATE:	**31.10.2023**

DESCRIPTION OF THE METHOD:

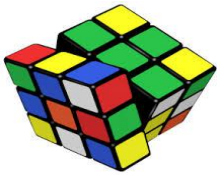
Problem-solving is a mental process that involves discovering, analyzing and solving problems. Solving problems involve both analytical and critical thinking skills.

Problem-solving exercise helps students to apply the concepts in solving the numericals. They learn to analyze options and have to come up with a way to solve any challenges they come across. These problem-solving skills are a great benefit in their day to day lives and can help them to solve real-life situations.

BENEFITS OF THE METHOD:

- **Better understanding of different concepts.**
- **Improve the decision-making ability to choose a better design for a given problem.**
- **Benefits young minds with critical thinking skills, creativity, and confidence.**

ACTIVITY DETAILS:



ACTIVITY (PROBLEM SOLVING EXERCISE)

- Solve all the problems given
- Time given is 20 Min
- The student who will complete all the problems correctly within the specified time, will be appreciated with a Prize

3

1. A certain OP-AMP has an open loop voltage gain of 1,00,000 and a common mode gain of 0.2. Determine the CMRR and express it in decibels? The stations on a wireless ALOHA network are a maximum of 600 km apart. If we assume that signals propagate at 3 × 108 m/s, we find Tp = (600 × 103) / (3 × 108) = 2 ms. Find the value of TB for different values of K.
2. A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps. What is the requirement to make this frame collision-free?
3. A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces
   a. 1000 frames per second?
   b. 500 frames per second?
   c. 250 frames per second?

4. A slotted ALOHA network transmits 200-bit frames using a shared channel with a 200-kbps bandwidth. Find the throughput if the system (all stations together) produces

- a. 1000 frames per second.
- b. 500 frames per second.
- c. 250 frames per second.

5. A network using CSMA/CD has a bandwidth of 10 Mbps. If the maximum propagation time is 25.6 μs, what is the minimum size of the frame?

5

Was conducted on 31.10.2023

Topic: "ALOHA & CSMA"

Reflections: Well accepted

Anusha Begum I Banigol won the I prize


NUMERICALS
"ALOHA & CSMA"


PROBLEM SOLVING EXERCISE
• Problem-solving is a mental process that involves discovering, analyzing and solving problems.
• Solving problems involve both analytical and critical thinking skills.

Signature of Course Faculty

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SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2023)

TITLE OF INNOVATION:	**FLIPPED CLASSROOM**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**COMPUTER NETWORKS (18EC71)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO CREATE INTERACTIVE LEARNING AMONG STUDENTS.**
TOPIC COVERED:	**"PATH VECTOR ROUTING"**
CONDUCTION DATE:	**21.11.2023**

DESCRIPTION OF THE METHOD:

The Flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. The term is widely used to describe almost any class structure that provides pre-recorded lectures followed by in-class exercises. The flipped classroom is an easy model. A means to INCREASE interaction and personalized contact time between students and teachers. An environment where students take responsibility for their own learning.

Flipped classrooms provide a good alternative teaching platform. Teacher provides the content to the students in form of videos, references to websites, digital content, etc. The students go through the content in a given time frame. The learners are asked to go through a few lecture videos that create the platform for discussion in the next class. The class room is reserved for discussions on the topic and to enhance in-depth understanding of the topic, by the students. Classroom is open for discussions, where the topics are explored further, with students contributing significantly to the discussions.

This method adds a new element to help students learn with each other. The class starts with a student explaining the concept covered before class. In a flipped classroom, the teacher does not give direct instruction but provides all the help and material for students to present their work. The flipped class creates a learning space that students can explore.

BENEFITS OF THE METHOD:

- **The students will be able to learn at their own pace with more one-to-one interaction between teacher and student.**
- **This method provides more collaboration time for students. Moreover, flipped classroom changes the traditional learning culture into a learner-centered class.**
- **It helps the instructor to change from the conventional mode of teaching to newer modes, which capture the interest of the students and hold their attention.**
- **Students are given equal opportunity to share their view and ideas.**
- **Students can have prior preparation for the class.**

KEY ELEMENTS:

- **Arrange for an opportunity for students to gain first exposure prior to class.**
- **Offer an incentive for students to prepare for class.**
- **Provide a mechanism to assess student understanding**
- **Run in-class activities that focus on higher level cognitive activities.**

ACTIVITY DETAILS:

Topic: "PATH VECTOR ROUTING"

Reflections: Well accepted

- **Time taken is 50min**
- **Seminar conducted**
- **Given two problems to solve**

A. Niketh Sandilya & Gottipati Prem Kumar given the Seminar


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SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2023)

TITLE OF INNOVATION:	**THINK PAIR SHARE**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**COMPUTER NETWORKS (18EC71)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN THE CONCEPT BY DOING AN ACTIVITY**
TOPIC COVERED:	**"FLOW CONTROL, ERROR CONTROL & CONGESTION CONTROL"**
CONDUCTION DATE:	**11.12.2023**

DESCRIPTION OF THE METHOD:

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Think-Pair-Share (TPS) is a cooperative learning activity that can work in varied size classrooms and in any subject. Instructors pose a question, students first THINK to themselves prior to being instructed to discuss their response with a person sitting near them (PAIR).

Think-pair-share is a technique that encourages and allows for individual thinking, collaboration, and presentation in the same activity. Students must first answer a prompt on their own, then come together in pairs or small groups, then share their discussion and decision with the class. Discussing an answer first with a partner before sharing maximizes participation, and helps to focus attention on the prompt given. Using the think-pair-share technique allows students time for individual reflection, thinking, and processing new information before they may be influenced by other students' answers. This

process also teaches students how to explain their thoughts first to a peer, and then to a larger audience (the entire class).

Faculty explains the technique to the students before beginning the exercise: describe the purpose, set discussion guidelines and time limits, and model the strategy to ensure that students know what is expected of them.

Step 1: Think

Begin with a specific question, and give students time to individually think about an answer, and document their responses on their own. Students can be given 1-3 minutes for this part of the exercise.

Step 2: Pair

Students now get into pairs. Ask the students to share what they came up with, with their partners and discuss. This part of the activity can take at least 5 minutes.

Step 3: Share

For this part, come back together as a class and have a whole class discussion. We can either choose to have one person from each pair share with the class, or the discussion can be more open. Students can also share with the class what their partner said.

BENEFITS OF THE METHOD:

- It enhances students' critical thinking skills, improves listening and reading comprehension
- It helps students to get collaboration and presentation skills.
- It benefits the students who are typically shy may feel more comfortable sharing with the class after sharing with a partner,
- It promotes students who are outspoken to get benefit from first listening to others before sharing their own opinion.
- It helps students to think individually about a topic or answer to a question.
- It teaches students to share ideas with classmates and builds oral communication skills.
- It helps focus attention and engage students in comprehending the reading material.

ACTIVITY DETAILS:

Topic:

"FLOW CONTROL, ERROR CONTROL & CONGESTION CONTROL"

Reflections: Well accepted

ANUSHA G M & BHANUSHREE K M won the I prize

Signature of Course Faculty

|| JAI SRI GURUDEV ||

SJC INSTITUTE OF TECHNOLOGY, Chickballapur

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INNOVATIVE TEACHING METHODS (ODD SEM 2023)

TITLE OF INNOVATION:	**STAD**
COURSE FACULTY:	**Dr.S.BHARGAVI**
DESIGNATION:	**PROFESSOR**
COURSE NAME & CODE:	**COMPUTER NETWORKS (18EC71)**
SEMESTER & SECTION:	**7th A**
OBJECTIVE OF THE METHOD:	**TO MAKE STUDENTS LEARN TO BE FORMED INTO GROUPS OF FOUR OR FIVE MEMBERS REPRESENTING THE STUDENTS WITH THE SKILLS AND DIFFERENT GENDERS.**
TOPIC COVERED:	**MODULE 5 (APPLICATION LAYER PROTOCOLS)**
CONDUCTION DATE:	**27.12.2023**

DESCRIPTION OF THE METHOD:

STAD stands for STUDENT TEAM ACHIEVEMENT DIVISIONS, it is a collaborative learning strategy in which small groups of learners with different levels of ability work together to accomplish a shared learning goal.

STAD is one of the systems of collaborative learning in which students learn to be formed into groups of four or five members representing the students with the skills and different genders. The teacher gives a lesson and then students work in each group to ensure that all group members have mastered the lessons given.

The complete class group of students were divided into four small groups, and the activity is conducted in the form of content focus, Group Discussion, Problem solving, Quiz, Test, Team study etc.

BENEFITS OF THE METHOD:

- **Collaborative learning Environment.**
- **Enhancing learning achievement and increasing social skills**
- **As the more students work together in collaborative groups, the more they understand, retain, and feel better about themselves and their peers.**
- **Encourages student responsibility for learning.**
- **Leadership and Self-Management Skills.**
- **Wider Range of Knowledge and Skill Acquisition.**
- **Improved Student Relationships.**
- **Better Concept Retention.**
- **Promotes Active Listening and Critical Thinking.**
- **Establish group goals and values.**

ACTIVITY DETAILS:

Topic: "APPLICATION LAYER PROTOCOLS"

Reflections: Well accepted

- **Time taken is 50min**
- **Group Discussion conducted**

Niketh Team won the First Prize

Arhaan Khan Team won the Second Prize

Signature of Course Faculty

|| Jai Sri Gurudev||

S J C Institute of Technology, Chickballapur – 562101

Report Date: 11.10.2023

Demonstration of OPAMPS in Analog and Digital lab was organized on 11th October 2023 in Department of Electronics & Communication Engineering

Prof Savitha M M, Prof Vishala I L and Instructor Muniraju conducted this program

Highlights of the program:

1. Voltage follower
2. Differentiator
3. Integrator

All the first semester students of IS-A section attended this program from 2.00PM to 04.00PM at Analog and Digital lab, EC Department

Prepared by: Savitha M M

Signature of HOD

Photos:


GPS Map Camera
Chikkaballapur, Karnataka, India
SJCIT Admin Block, Chikkaballapur, Kothanoor, Karnataka 562103, India
Lat 13.395938°
Long 77.727423°
11/10/23 03:10 PM GMT +05:30
Google


GPS Map Camera
Kothanoor, Karnataka, India
9PWH+3HF, Kothanoor, Karnataka 562103, India
Lat 13.39491°
Long 77.728893°
11/10/23 03:16 PM GMT +05:30
Google


GPS Map Camera
Kothanoor, Karnataka, India
9PWH+3HF, Kothanoor, Karnataka 562103, India
Lat 13.39491°
Long 77.728893°
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Google

|| Jai Sri Gurudev||

S J C Institute of Technology, Chickballapur – 562101

Report Date: 24.06.2023

Demonstration of Rectifiers in Analog and Digital lab was organized on 24th June 2023 in Department of Electronics & Communication Engineering

Prof Savitha M M, Prof Vishala I L and Instructor Manoj S conducted this program

Highlights of the program:

1. Half wave rectifier
2. Full wave rectifier
3. Bridge wave rectifier

All the first semester students of AIML section students attended this awareness program from 12.00AM to 02.00PM at Analog and Digital lab, EC Department

Prepared by: Savitha M M

Signature of HOD

Photos:


GPS Map Camera
Kothanoor, Karnataka, India
9PWH+3HF, Kothanoor, Karnataka 562103, India
Lat 13.395015°
Long 77.729223°
24/06/23 12:47 PM GMT +05:30
Google


GPS Map Camera
Kothanoor, Karnataka, India
9PWH+3HF, Kothanoor, Karnataka 562103, India
Lat 13.395038°
Long 77.7292°
24/06/23 12:48 PM GMT +05:30
Google


SJCIT

Design for Humanity

Objective:

Encourage engineering students to think critically about how their work can improve public spaces and serve diverse groups of people. This activity will help students develop empathy, social responsibility, and inclusive thinking.

Materials Needed:

- Pen and paper for notes
- White sheets, cut-outs, glue, Scissors, markers

Space/Theme	Description	Focus Areas
Public Transportation Spaces	Improve transportation-related spaces like bus stops or bike racks.	Accessibility, safety, comfort, ease of use for diverse groups (disabled, elderly, etc.)
Parks & Recreation Areas	Focus on redesigning playgrounds, walking trails, or public gardens.	Inclusivity, safety, comfort, environmental sustainability, accessibility
School & Campus Spaces	Redesign spaces within educational institutions like school entryways, pathways, or study areas.	Accessibility, comfort, social interaction, safety, learning-friendly environments
Public Squares & Plaza Spaces	Enhance public squares or plazas for community interaction and engagement.	Social interaction, safety, seating, environmental design, public space utility
Streets & Sidewalks	Focus on improving pedestrian infrastructure like sidewalks, crosswalks, or street furniture.	Safety, accessibility, comfort, traffic flow, inclusivity
Healthcare & Wellness Spaces	Improve healthcare facilities such as hospitals, clinics, or therapy centers.	Accessibility, comfort, emotional support, wellness, privacy
Waterfront & Coastal Spaces	Redesign coastal or waterfront spaces for better accessibility and enjoyment.	Accessibility, comfort, sustainability, environmental integration
Commercial & Public Building Entryways	Improve entrances and public spaces within retail stores, malls, or libraries.	Inclusivity, accessibility, comfort, user experience, safety
Public Restrooms	Redesign public restrooms to be more accessible and functional.	Accessibility, privacy, inclusivity, safety, comfort
Urban Agriculture & Food Access	Create community garden spaces or improve food market accessibility.	Sustainability, community engagement, accessibility, food security
Sports & Exercise Areas	Improve outdoor gyms or sports courts to be more inclusive.	Accessibility, inclusivity, comfort, safety, physical activity promotion
Traffic Management & Street Safety	Redesign streets for better pedestrian safety and reduced traffic risks.	Pedestrian safety, traffic calming, child safety, cycling accessibility

•**Digital Collage:**

•Use digital tools (like Canva, PowerPoint, or Photoshop) to create a digital version of the collage.

•Students can search for online images and incorporate them into their design.

•They can also overlay text to explain how their design improves the space for everyone.

Present the Collage

•Once the collages are completed, students can present them to the class. They should explain:

- The public space they selected.
- The challenges identified in that space.
- How their design addresses these challenges and enhances the space for everyone.

•**Class Discussion:** After each presentation, encourage questions from peers and facilitate a discussion about the effectiveness of the design and the human values incorporated.

Title:
Theme:
Group number:

Problem Statement

Why it's important?
How its affecting

Include some pictures

Proposed Solution

Think and work like a engineer
Provide some example cases where approach has been adopted
Give some figures and diagrams
Discuss how u can implement a cost effective design

Challenges

1. Why problem persists
2. What are the challenges faced while giving this solution

Conclusion

Team member names:

REDESIGNING SCHOOL & CAMPUS SPACES

Key Focus Areas:

Accessibility
Barrier-free-entryways & classrooms

Social Interaction
Open lounges, collaborative zones

Safety
Well-lit pathways, secure access points

Learning-Friendly
Quiet zones, fech-integrated spaces

TOP 10
PARENT-TEACHER COMMUNICATION

SCHOOL & CAMPUS SPACES

Common Problems	Solutions
Inaccessible pathways	Universal Design Features
Poor lighting & safety	Enhanced Lighting & Surveillance
Limited social interaction spaces	Interactive & Flexible Spaces
Lack of green spaces	Green & Quiet Zones
Overcrowded or outdated designs	Modernized Facilities

Before Redesigning





After Redesigning


ENHANCING SCHOOL & CAMPUS SPACES

Creating Safer, More Inclusive Learning Environments

WHY IT MATTERS

Educational spaces shape student experiences and well-being. Redesigning school and campus areas supports learning, social development, and safety.

PROJECT GOALS

- Redesign entrances, hallways, study zones, and open areas
- Promote safe and inclusive environments for all students
- Encourage collaboration, creativity, and comfort

FOCUS AREAS

Accessibility
Barrier-free pathways for students of all abilities

Safety
Improved surveillance, visibility, and emergency access

Comfort
Inviting spaces with adequate lighting and ventilation

Learning-Friendly Design
Ergonomic seating, quiet zones and interactive features