



A report on  
**Online Faculty Development Programme on  
Teaching Methodology and Microsoft Azure**

Supported by  
**Commonwealth Educational Media Centre for Asia, New Delhi**

Implemented by  
**Andhra Pradesh Information Technology Academy, Vijayawada**

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## **ACKNOWLEDGEMENT**

We earnestly acknowledge the immense contribution of Prof. (Dr.) Madhu Parhar, Director of Commonwealth Educational Media Centre for Asia (CEMCA), and Mr. Saurabh Mishra, Programme Officer (Skills) of Commonwealth Educational Media Centre for Asia (CEMCA), for conceptualizing and floating the highly need-based and demand-driven workshops for upgrading the capacity of the FDP and sensitization program in association with Mr. Anil Reddy, CEO of Andhra Pradesh Information Technology Academy (APITA) and Mr. Vishwanath, Director of Andhra Pradesh Information Technology Academy (APITA) for higher education faculties (engineering colleges) at Swarnandhra College of Engineering and Technology, Seetharampuram, Narsapur, West Godavari District, Andhra Pradesh.

The excellent endeavor of CEMCA is expected to have a profound impact on the qualitative enhancement of the Professors, Lecturers, HODs & Trainers of All the Engineering Colleges of AP with the different methodology of Teaching Techniques and Microsoft Azure with the Latest & Traditional, Easy for Good, not good & Mediocre participants perspective of both content & methodology.

It was a privilege for us to get the opportunity to contribute significantly to this value-driven and impact-oriented mission of CEMCA.

## **1. BACKGROUND**

IT is possibly the fastest developing sector in the last few decades. Computers (in all shapes and sizes) and the Internet have acquired a very important role in most domains of our everyday life. In the same way, education is not imaginable anymore without a strong presence of teaching methodologies. Faculties have had to adapt teaching methodologies throughout curriculum delivery to provide formal, subject-based education and encourage pupils' personal development in a wider social and cultural context.

On one hand, formal education involves understanding concepts and processes. It aims at acquiring knowledge and skills to be able to apply what has been learned within each subject area and across subjects. On the other hand, pupils need to learn to describe, analyze, interpret, have a critical view, and apply their acquired knowledge and skills creatively and originally in a wide range of social, scientific, and cultural contexts.

Since the world of the cloud is changing so rapidly, an important goal is to provide hands-on experience to faculty to equip pupils with the basic knowledge and fundamental skills on one hand, and, on the other hand, to empower them to become independent and autonomous learners too. In this sense, faculty should acquire a range of skills that will allow them to continue learning and teaching with an improved Teaching-Learning Process.

## **2. MOTIVATION**

Companies are seizing on Azure as the key enabler to complete their digital transformation, and the COVID pandemic has further accelerated this mandate. Azure is becoming a top C-suite agenda item as businesses are transitioning from a piece-meal approach to a more holistic end-to-end digital transformation with cloud at its core. The winners of tomorrow will be the ones that navigate this change rapidly, make the right choices and engage with the appropriate partners to augment their capabilities.

Microsoft Azure is one of the fastest-growing enterprise cloud platforms and helps professionals run more secure instances in the cloud. This course can be taken by absolute beginners including candidates with non-technical backgrounds, such as those involved in selling or purchasing cloud-based solutions and services, or who have some involvement

with cloud-based solutions and services, as well as those with a technical background who need to validate their foundational-level knowledge around cloud services and Azure.

### **3. INTRODUCTION**

Today's age of the 21st Century is the age of information and technology (IT). Every aspect of life is related to science and technology. A huge flow of information is emerging in all fields throughout the world. Recently, the technology industry has seen a major shift —mostly towards cloud computing. Defined as a web-based computing model, cloud computing instantly allows users to share information with other devices and computers. Some of the top cloud computing platforms that are widely used include Microsoft Azure and AWS.

Azure is a cloud computing platform that was introduced by Microsoft in 2010 and is one of the most popular cloud-based platforms that businesses are using worldwide to completely change the way they deliver their products and services to clients. The Azure cloud platform developed by Microsoft is a game-changer for many businesses who are completely or partially moving their infrastructure to a more secure and scalable cloud environment.

In this regard, Microsoft Azure has certainly paved the way for individuals and enterprise teams to get accustomed to the nuances of cloud platforms with various role-based Microsoft Azure certifications,

Recognizing that “Azure will play an important role in the future”, the AICTE recommends training for faculty in cloud use and integration. To meet this critical need, Commonwealth Educational Media Centre for Asia (CEMCA) organized a faculty development program on "Microsoft Azure" in partnership with APITA for faculty in the state of Andhra Pradesh.

### **4. LEARNING OBJECTIVE**

The course itself is structured around four modules covering topics ranging from basic concepts around Teaching Methodologies and Azure, all the way to understanding Microsoft Azure Solution capabilities and general scope for the introduction. Upon completion of the training program, the faculty will be able to:

#### **Teaching Methodology**

- Explain the principles of ANDRAGOGY viz. Adult Learning
- Enlighten learners regarding the features of the facilitation process
- Explain to learners the features of Facilitation that demarcate it from the Mixed traditional lecture method
- Illustrate the importance of Examples, Data, and History with Facilitation of Storytelling (Panchatantra), in online & Offline learning/ Teaching
- Explain different psychosocial interventions with ‘Panchatantra ‘that are deployed in facilitation
- Make the learners illuminated with the beneficial aspects of different learning models, Remembering techniques, Corollaries, etc.
- Discuss different learning methods that are highly effective in online & Offline / Physical learning

Identify practical exercises for fostering practice- teaching, with a goal-oriented approach.

#### **Microsoft Azure**

- Create, configure, scale, and deploy the App Service platform
- Develop Azure compute solutions
- Understand Azure Database Services and Azure Storage Account
- Understand Azure Cosmos DB
- Identify and troubleshoot the applications
- Implement Azure security, and n-tier architecture
- Develop and deploy Azure functions and Logic App
- Identity and Access Management with Azure AD
- Connect to and consume Azure services and third-party services
- Interpret Monitoring, troubleshooting, and optimizing Azure solutions
- Apply Azure Cognitive Services

## **5. DATE & TIME**

SL NO.	COURSE	DATE	TIME	PARTICIPANTS	COUNT
1	Teaching Methodologies	11-May-2022 & 15-May-2022	09:30 A.M to 5:00 P.M	Higher Education Faculties from Andhra Pradesh	47
2	Microsoft Azure	12-May-2022 to 14-May-2022	10:00 A.M to 4:00 P.M		

## 6. PARTICIPANTS

23 male and 24 female faculty of which 7 Professors, 16 Associate Professors, 17 Assistant Professors, and 7 Lab programmers from 19 engineering colleges attended the workshop conducted between 11<sup>th</sup> to 15<sup>th</sup> May 2022 in online mode. Participants were from Seethampuram, Narsapur, Andhra Pradesh, Telangana, Tamil Nadu, Orissa, and Maharashtra states

A Detailed List of Participants for both the workshops is attached separately.

## 7. TRAINING ANDRAGOGY

The Training was conducted on the college lab premises. The methodology used was a live demonstration of Teaching Methodologies and Azure applications followed by hands-on practice by participants using the assignment questions provided by the resource person. The organizing team shared a WhatsApp group to interact, share information, answer queries, and submit feedback.

SL NO.	Event	Time	Platform
1	Demonstration Sessions (Every day)	10:00 A.M to 4:00 P.M	Zoom
2	Interaction with queries and feedback	5:00 P.M to 8:00 P.M	WhatsApp

## 8. COURSE CONTENT & STRUCTURE

Day	Title	Session Objective	Teaching Andragogy
1	Teaching Methodology Principles	<ul style="list-style-type: none"> <li>Principles of ANDRAGOGY</li> <li>Beneficial Features of Facilitation</li> <li>Learning Models that are relevant to classroom learning</li> <li>From the baselines of Bloom's Taxonomy to ARCS</li> </ul>	<ul style="list-style-type: none"> <li>Dialogue-driven interaction</li> <li>Role Play &amp; JAM</li> <li>Case Study, Compare &amp; Contrast</li> <li>Group Discussion</li> </ul>
2	Cloud and Azure Fundamentals , Azure App Services	<ul style="list-style-type: none"> <li>Cloud Fundamentals</li> <li>Cloud Service Models</li> <li>Cloud Deployment Models</li> <li>Cloud Providers</li> <li>Azure Introduction</li> <li>Why Azure?</li> <li>Azure Services Overview</li> <li>Azure Resource Manager</li> <li>Azure Virtual Machine</li> <li>Availability Set</li> <li>Azure Web App</li> <li>Azure Web Job</li> <li>Azure Logic App</li> <li>Azure Functions</li> </ul>	
3	Azure Integration Services, Azure Data Services	<ul style="list-style-type: none"> <li>Azure Storage Account</li> <li>Azure Redis Cache</li> <li>Azure SQL</li> <li>Azure MySQL</li> <li>Azure PostgreSQL</li> <li>Azure Cosmos DB</li> <li>Azure Vnet, Subnet classification</li> <li>Network Security Group</li> <li>Site-to-Site</li> <li>Point-to-Site</li> <li>Azure Firewall</li> <li>Azure DDoS Protection</li> <li>Azure Service BUS</li> <li>Azure IoT</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrated Azure services</li> <li>Hands-on demonstration</li> <li>Assignment for self-practice</li> </ul>
4	Azure Networking, Compute, and IAM	<ul style="list-style-type: none"> <li>Azure Active directory</li> <li>Azure Role-Based Access Control</li> <li>Azure Monitor</li> <li>Azure Advisor</li> <li>Azure Service Health</li> <li>Azure Data Factory</li> <li>Azure Synapse</li> <li>Azure Databricks</li> <li>Azure Cognitive Services</li> </ul>	

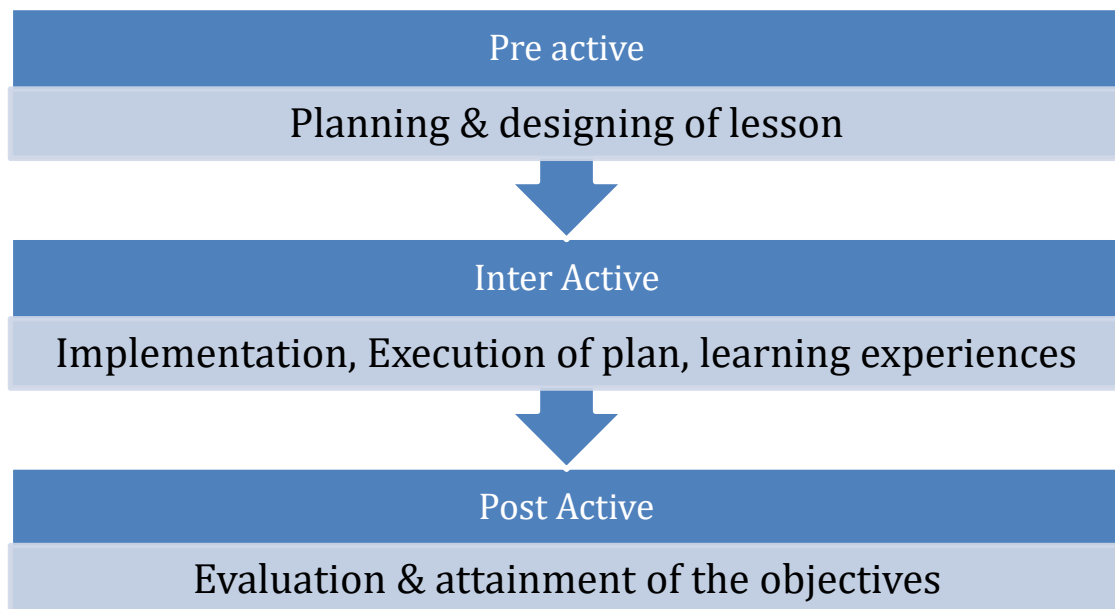


		<ul style="list-style-type: none"> <li>○ Computer Vision API</li> <li>○ Form Recognizer API</li> <li>○ Speech Service API</li> <li>○ Language Service</li> <li>○ Bot Service</li> <li>○ Decision Services</li> <li>● Azure Streaming Analytics</li> <li>● Microsoft Defender for Cloud</li> <li>● Azure KeyVault</li> </ul>	
2	Innovation Methodology and Tool	<ul style="list-style-type: none"> <li>● The world's oldest Innovation Methodology of teaching "Panchatantra" to EdgarDale's Model.</li> <li>● Tools &amp; Methods for fostering participative &amp; inductive learning</li> <li>● Relevance of psychosocial interventions in the class, to ensure the psychological engagement of learners</li> <li>● The Need for LST as a part of the regular curriculum.</li> </ul>	<ul style="list-style-type: none"> <li>● Motivational Stories</li> <li>● Motivational Interview</li> <li>● Constructive Feedback</li> <li>● Statistics, Data &amp; History</li> <li>● Appreciative Inquiry &amp; Assessment</li> <li>● Problem-solving through Design thinking</li> </ul>

### Ice Breaking & Session proceedings

### Introduction -Communication skills

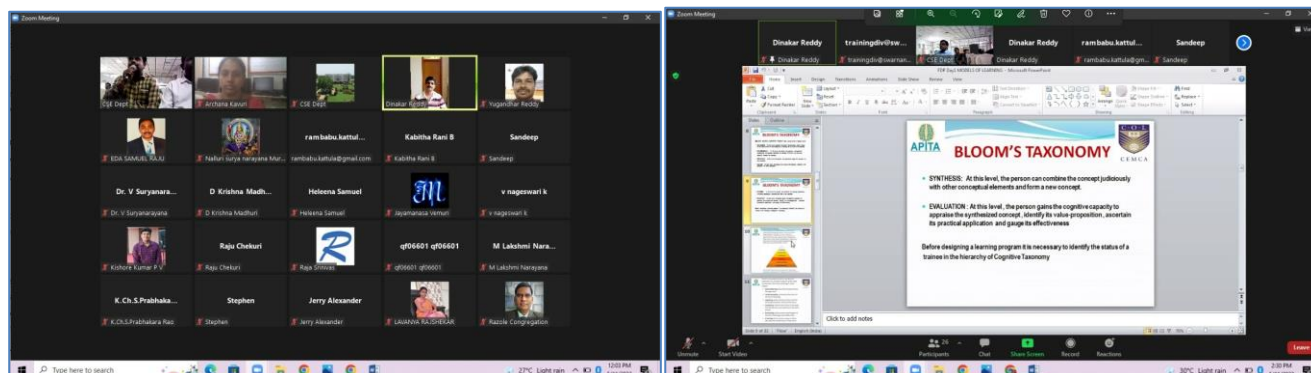
## Teaching phases of Philip Jackson Model



## Day - 1: Teaching Methodologies: 11-May-2022

### Inaugural Session

The Training Programme began with the inaugural session. The inaugural session was graced by Dr. S. Suresh Kumar, Principal, Swarnandhra College of Engineering and Technology Dr. P. Pandarinath, Principal, and Swarnandra Institute of Engineering and Technology. Dr. P. Srinivasulu. Convener and HOD, CSE Department, Dr. M. S. Kiranmayi, Prof. & Head, Training Department, Swarnandhra Group of Engineering Colleges. Dr. S. Suresh Kumar in his inaugural address highlighted the importance of FDP for Teaching Methodologies and made a note about the importance of Azure.



### Teaching Methodology day 1

After the ICE BREAKING sessions, the first topic was about Individualized Instruction Model By **Keller Plan**, Success Approximation Model By **Dr. Michael Allen** The break was up with **Edgar Dale's Model**- Giving Following Opportunity To Participants For 90% Retention.

The role model & the individual experiences were the key presentations with Concept of Cognitive Load By **John Sweller** & Elaboration Model By **Charles Reigeluth**. Analysis Of Learning Style (By Peterhoney & Allen Mumford). The live interaction & storytelling made the finishing of Day one in the high spirits.

- Principles of ANDRAGOGY
- Beneficial Features of Facilitation
- Learning Models that are relevant to classroom learning
- From the baselines of Bloom's Taxonomy to ARCS

LEARNING MODELS EXPLAINED	MAIN THEME	OUTPUT OF EXPLANATION
BENJAMIN BLOOM's COGNITIVE TAXONOMY	<p>This theory deals with the six levels of a learner's cognition and understanding of a specific subject.</p> <p>The Facilitator affirmed that the level is very much subjected specific.</p>	The learners achieved conceptual clarity regarding the different Cognitive Levels of individuals in different subjects

	A Learner/participant who is in the higher level in one subject may be in the lowermost level of another subject	
ROBERT GAGNE's Nine Steps of Instruction	<p>This model indicates that there are <i>nine types</i> of educational instructions arranged in a logical sequence.</p> <p>If an Educator follows the nine instructions in the structured logical sequence, then the learners will achieve the desired learning goal and transfer their learned inputs to others.</p>	The learners got apprised regarding the logical sequence of activities that are to be executed by a Trainer /Facilitator in a Learning Session for facilitating the learners in ensuring retention of the learned content and developing within them the ability to transfer the learned content to others
EDGAR DALE's Model of retention of learning inputs	The model suggests that different types of academic activities lead to different levels of retention of learned inputs	The learners got apprised regarding the percentage of retention of learned inputs by the learners under the influence of various sorts of Teaching Activities
CHARLES REIGELUTH'S Elaboration Model	The model suggests that an Educator must present the learning materials in a sequential pattern viz. from the simplest level to the most complex level	The learners understood the significance of arranging and presenting the learning content through logical sequences
JOHN SWELLER'S Cognitive Load Model	<p>This model suggests that to ensure the retention of learning inputs in participants' long-term memory, the learning content should be delivered in a fragmented pattern, part by part.</p> <p>If a large volume of content is foisted upon the learners then the cognitive load will get enhanced to a large extent.</p> <p>Therefore, the learned inputs will not be retained in long-term memory.</p>	The learners understood the significance of presenting a large volume of content in a fragmented pattern instead of continually imposing a huge volume of content upon the learners.
JOHN KELLER'S ARCS MODEL	<p>This model reflects the linear sequence of four activities that are to be followed by educators to</p> <ul style="list-style-type: none"> <li>● Draw the attention of the participants</li> <li>● Establish relevance of the learning</li> </ul>	The learners understood how to draw the participants' attention, present relevant inputs to them, build up their confidence, and satisfy the participants in learning

	<p>materials to the prior knowledge or the occupational life of the participants</p> <ul style="list-style-type: none"> <li>• Build up the confidence of the learners</li> <li>• Satisfying the learners by the achieved learning outcome</li> </ul>	<p>sessions.</p>
JEROME BRUNER'S Discovery Model	<p>This model suggests that the Probing Inquiry from the Educator facilitates the participants to introspect and unleash their latent creativity and analytical competencies.</p>	<p>The learners to understand the significance of Inquiry-Based Instructions for the discovery of the hidden creative flair, insight, intuition as well as the analytical power of the participants, embedded within themselves</p>
HOWARD BURROWS' Problem Based Learning Model	<p>This model suggests that if the participants are provided with problems to solve rather than contents to memorize, then the creative and analytical competencies of the learners will get enhanced and unleashed.</p>	<p>The learners understood how problem-solving exercises can enhance the critical thinking as well as creative thinking competency of the participants</p>
MAY & DOOB's Collaborative Learning Model	<p>This learning model indicates that cooperation and collaboration among a group of learners can lead to the achievement of learning outcomes</p>	<p>The learners comprehended how the exchange of views, group discussion, task distribution, and the convergence of thoughts can play extremely significant roles in the learning process.</p>
MICHAEL ALLEN's Success Approximation Model (SAM)	<p>This model encourages participants centric learning. Here, primarily the prototype of the learning material and finally the prepared instructional material are evaluated by the participants.</p> <p>If the participants suggest any changes, then to ensure the ease of learning for the participants, the changes are engineered accordingly both at the prototype as well as at the final material.</p>	<p>The learners perceived the significance of the customization /re-engineering of the prototype of learning materials as well as the final learning material based on the feedback of the participants</p> <p>The learners understood the significance of Participant-Centric Instructional Design.</p>
KELLER PLAN's Individualized Instructional Model	<p>This model is mainly concerned with the heterogeneity of the learners.</p>	<p>The learners deciphered the importance of designing learning materials and</p>

	<p>Since each learner differs from other learners in the learning capacity, style pace, and approach, hence the instructional material should be designed based on the unique capacity, need style standard, and pace of each learner.</p> <p>Within an allotted time frame each learner learns individually in his/her way</p>	<p>determining the methodology of facilitating the participants based on the intellectual standard, learning style, and the learning pace of each participant.</p>
<p>The Oldest Innovation of Teaching Methodology “Panchatantra”</p> <p>By - Vishnu Sharma.</p>	<p>This model is mainly concerned with the week's mediocre / Average participants.</p> <p>First time in the history of “Gurukulas”, this is introduced on the special request by the then King for his three sons.</p> <p>Panchatantra means Five Treatises/ chapters. Given learning capacity, style, pace, and approach, hence the instructional materials are all the stories about Animals, Birds &amp; Plants/ Nature.</p>	<p>The participants/ Shishyas for the imaginative thinking and stored in the permanent memories. Within an allotted time frame each learner learns individually in his perception like the Guru’s Version.</p>

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The expert who gives you information is called **ADHYAPAK**

The one who imparts knowledge & information is called **UPADHYAYA**

The one who imparts skills is called **ACHARYA**

The one who can give a deep insight into a subject is called **PANDIT**

The one who has a visionary view on a subject & teaches you to think in that matter is called **DHRISTA**

The one who can awaken the wisdom in you, leading you from darkness to light, is called **GURU**

## DESCRIPTION

The expert first explained the ARCS Model of John Keller vividly. Then he asked a participant to narrate the ARCS Model and its significance

While explaining the ARCS MODEL, the participant stopped narration at a specific point. The expert perceived that there is either memory –gap or thought process disruption within the cognitive framework of the participant

The expert initiates a Probing technique. He at first appreciated the previous performance of the participant to boost the morale of the participant. Then he floats gentle probing questions. The questions were asked not to check the knowledge of the learner. The questions were framed strategically to facilitate the learner in retrieving the link or getting some clue so that he can complete the remaining part of the narration.

Example: The learner was not able to narrate the confidence (C) and satisfaction (S) components of the ARCS Model.

Here the Probing questions of the Facilitator were

- ❖ Do you think that it is the responsibility of the expert to build up the confidence of the learners?
- ❖ Do you believe that confidence can improve the performance of the learners?
- ❖ Is the ARCS Model of John Keller an appropriate mechanism for building up the confidence of the learners?
- ❖ According to the ARCS model, at which stage it is necessary to build up the confidence of the learners? Do you feel that it is practically applicable?

These types of questions gave clues to the learner, and he/she could complete narrating the ARCS Model

## ACTIVE LISTENING & PARAPHRASING

### DESCRIPTION

The expert asked the learner to narrate his view on Behavioural Modelling

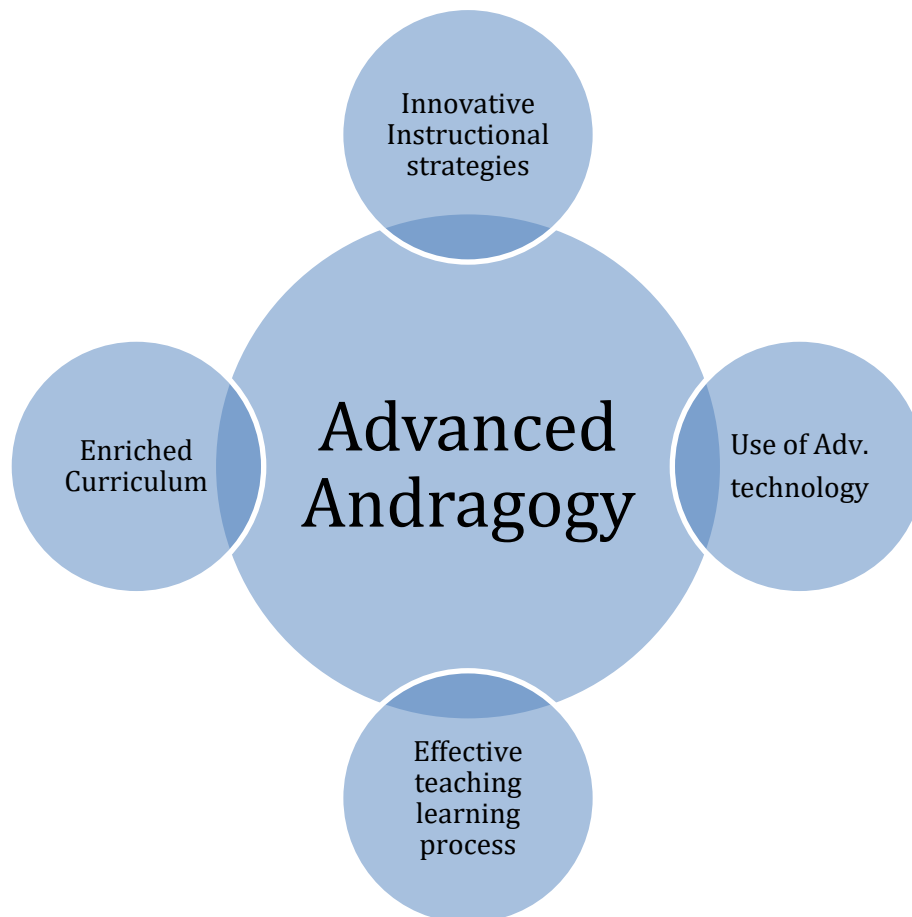
When the learner starts narrating, the expert listened to his narration with rapt attention and seamless concentration.

After that, the expert narrates the content of the learner but in a more sophisticated. language and replenishes the gaps in the narration of the learner

Example:

Learner (Vishnu): Behavioural Modelling is copying the behavior of another learner

Expert: Ok... So Mr. Vishnu wants to imply that Behavioural Modelling by a learner is the replication of an outcome-oriented behavior of a highly successful learner in the class, with the motivational intention to achieve the outcome.



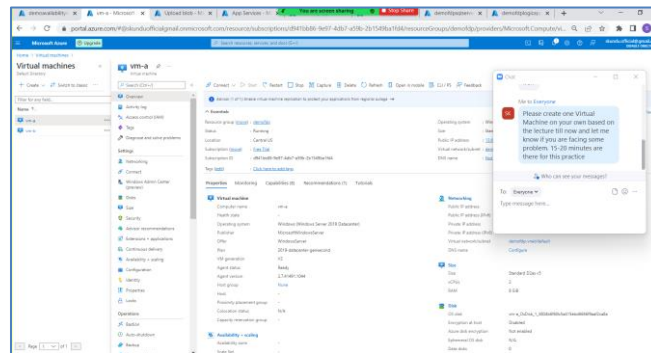
## **Day - 2: Microsoft Azure: 12-May-2022**

### **Technical Session**

The first session started with Cloud fundamentals which include limitations of traditional computing, an introduction to the cloud, service models in the cloud, and deployment models in the cloud. The following were delivered as part of the session:

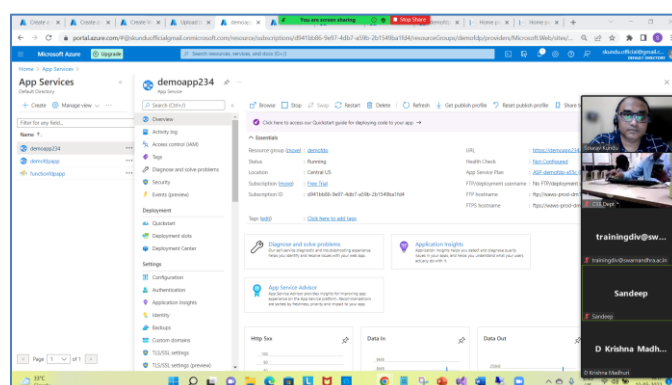
- Learners got knowledge of Traditional computing and its limitations
- Learners gained knowledge about Cloud computing and its features
- Core understanding of cloud service models and key differentiators

- Discussed cloud deployment models and providers
- Demonstrated how to create Azure free trial and overview of the portal
- Discussed the list of services offered by Azure
- Discussed Total Cost of Ownership calculator, SLAs,
- Discussed Subscriptions, Management Groups, and Resources
- Discussed Region and Availability zones and their purpose
- Discussed Virtual Machine, Availability Set, and Virtual Machine Scale Set
- Perform Hands-on practice on the creation of Virtual Machine



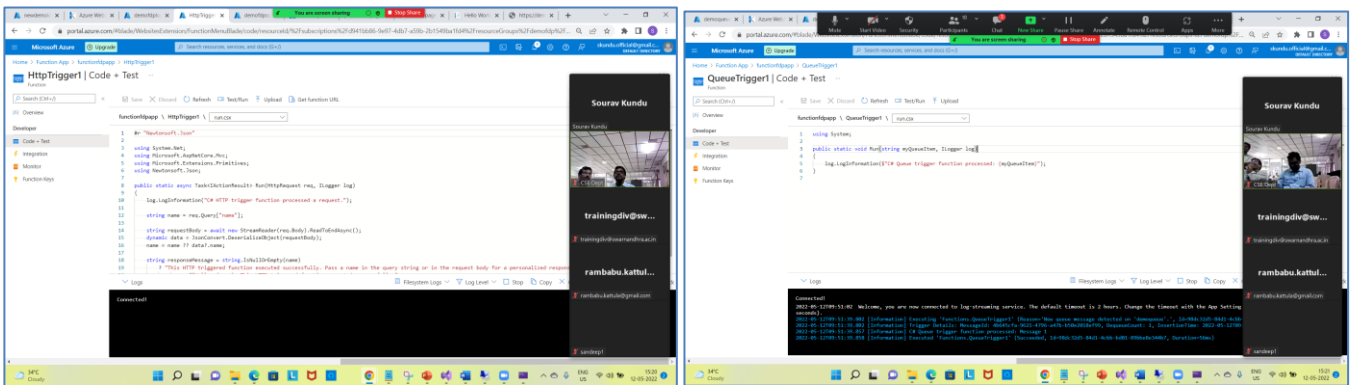
The afternoon session started with Azure fundamentals which include Azure App Services, Azure Functions, and Azure Logic Apps. The following were delivered as part of the session:

- Performed hands-on practice of Azure WebApp on the following:
  - Creation of Azure web app
  - Code deployments from IDE
  - Web Job
  - Deployment slots
  - Configuration

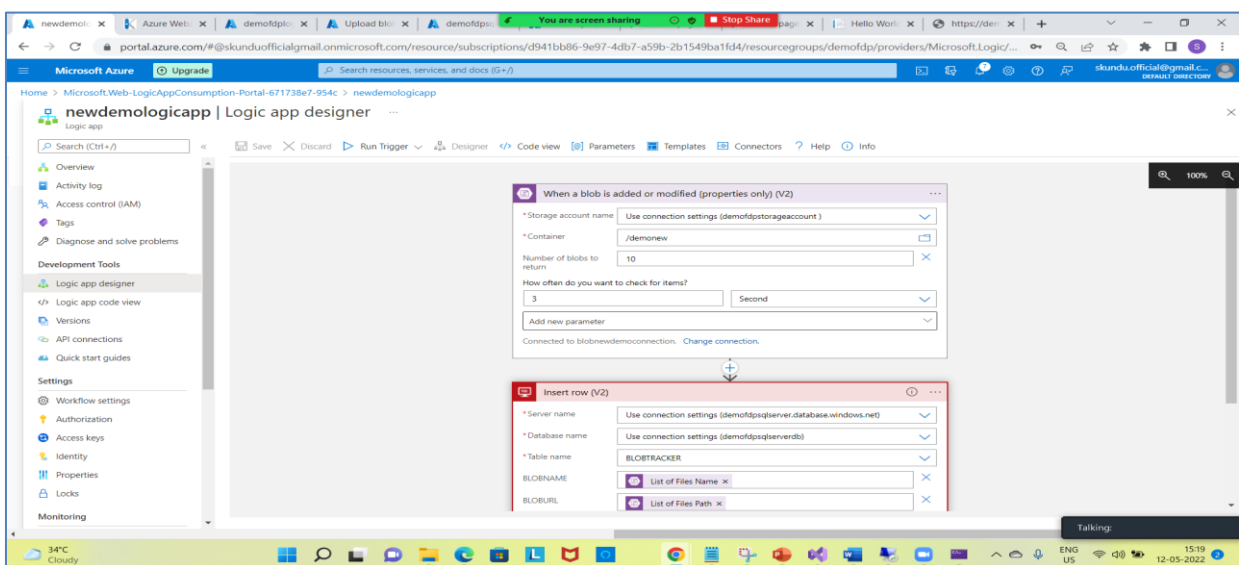




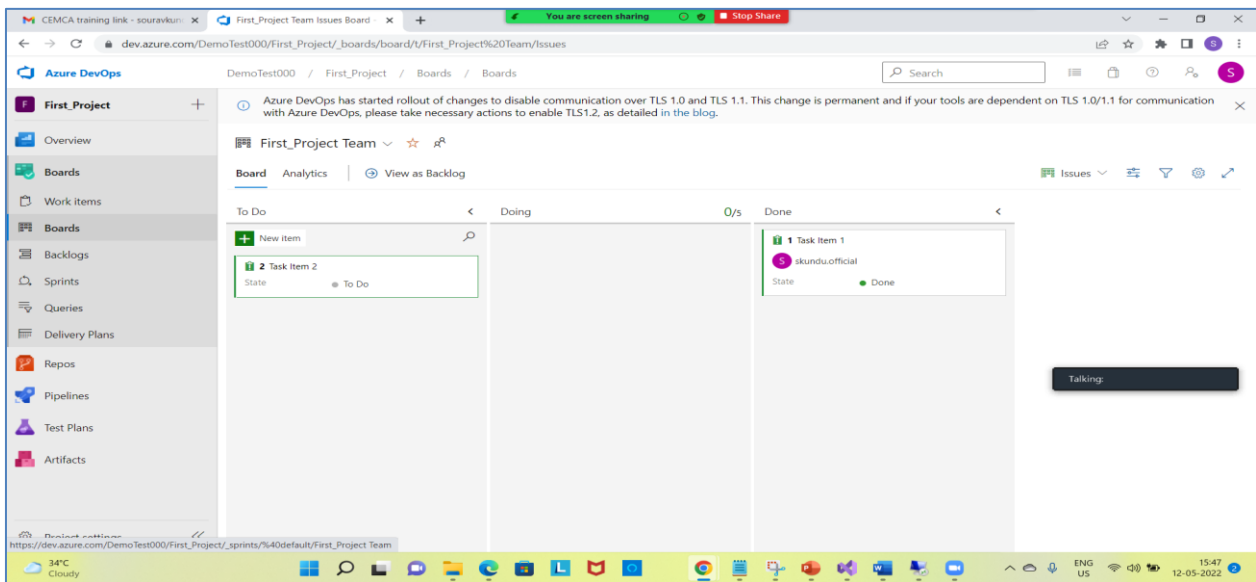
- Performed hands-on practice of Azure Functions on the following:
  - Learners got knowledge of serverless architecture
  - Creation of Function App
  - Hands-on demonstration of HTTP Trigger function
  - Hands-on demonstration of Azure Queue Storage Trigger
  - Hands-on demonstration of Azure Blob Storage Trigger
  - Hands-on demonstration of Azure Service Bus Queue Trigger



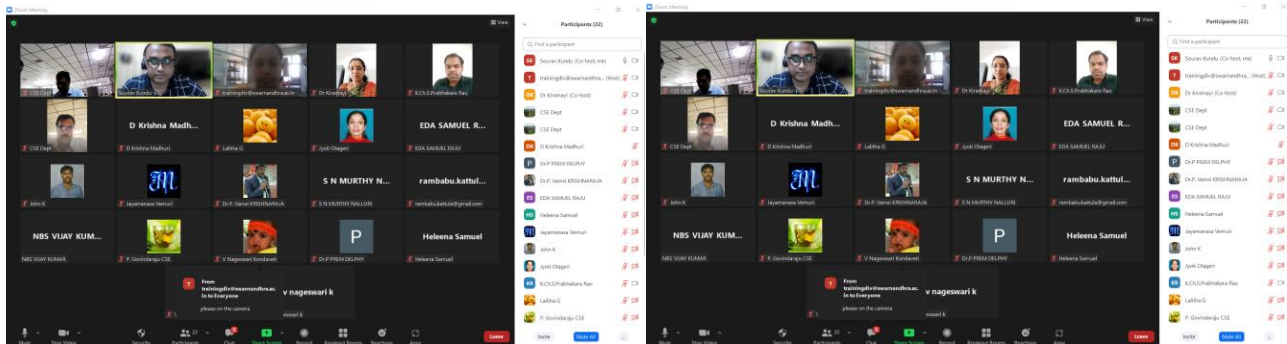
- Perform Hands-on practice on Azure Logic App
  - Creation of Logic App
  - Hands-on demonstration of a Logic App triggering mail and inserting records in Azure SQL Database on the update of a blob in a storage account



- Perform Hands-on practice of Azure DevOps



- The learners have clarified their doubts related to Azure fundamentals



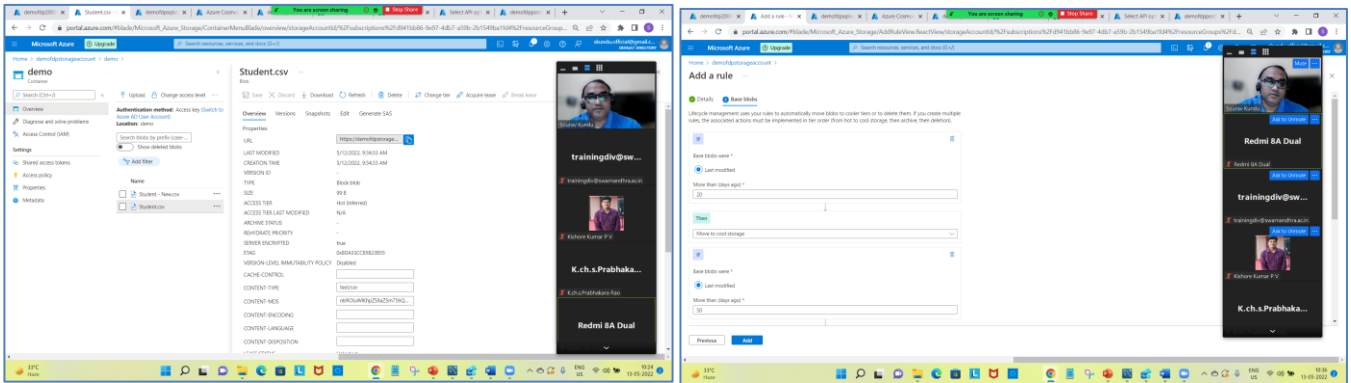
### Day - 3: Microsoft Azure: 13-May-2022

#### Technical Session

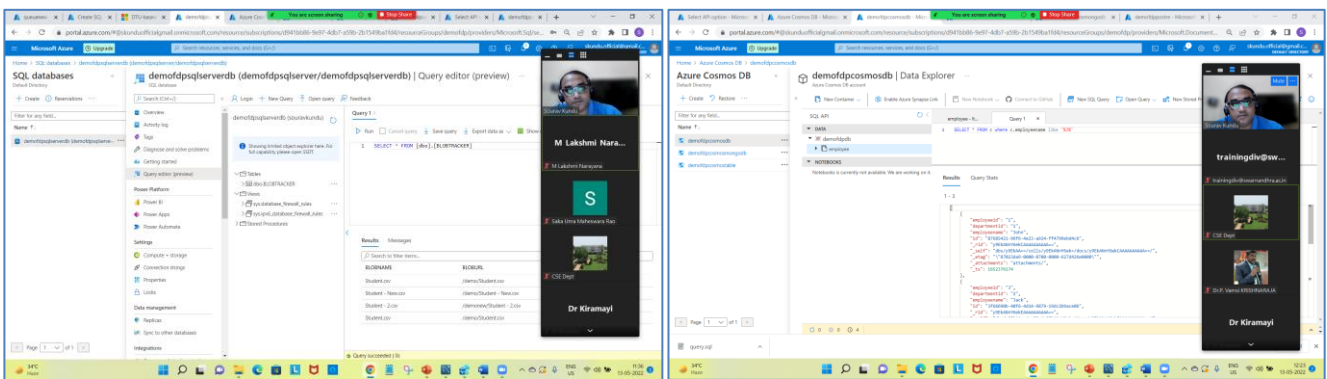
The morning session started with the Azure Storage Services which include Storage Account, Blob Storage, File Storage, Queue Storage, and Table Storage, and then moved into

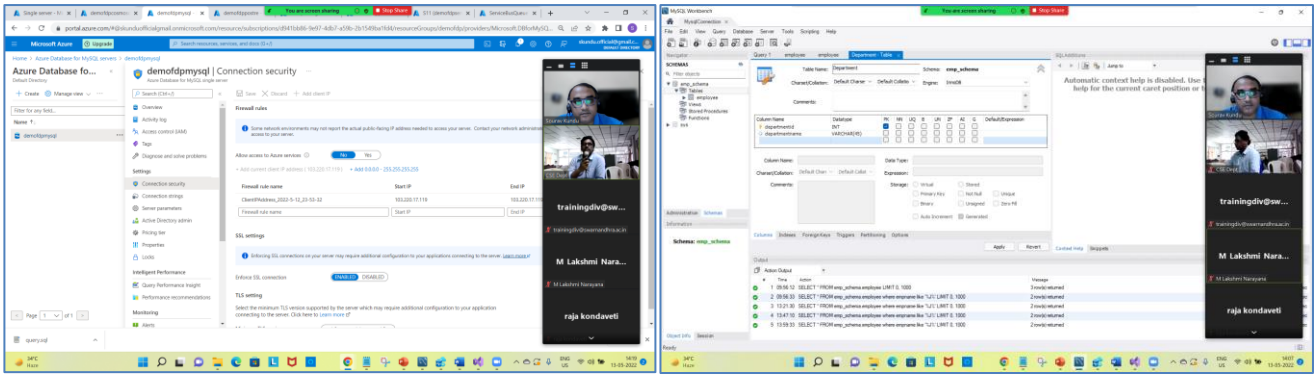
different Database services available in Azure. The following were delivered as part of the session:

- Learners got knowledge of Storage account
- Learners gained knowledge about different Storage – Blob, File, Queue, Table
- Learners gained knowledge about Access Tiers and Redundancy options
- Performed hands-on practice of different Storage



- Learners gained knowledge about Redis Cache and its features
- Performed hands-on demonstration of the following:
  - Creation of Azure SQL Database and performing different actions on it
  - Creation of Azure Database for MySQL Database and performing different actions on it using MySQL Workbench
  - Creation of Azure Database for PostgreSQL Database and performing different actions on it using Azure Data Studio
  - Creation of Cosmos DB and performing different actions on its different types of APIs provided by Cosmos DB
- Learners performed hands-on practice on SQL Database and Cosmos DB

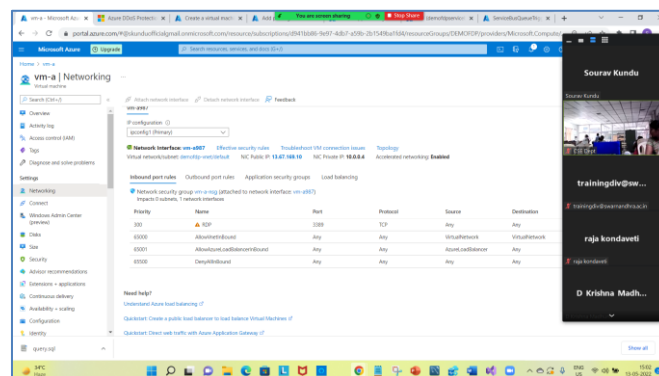




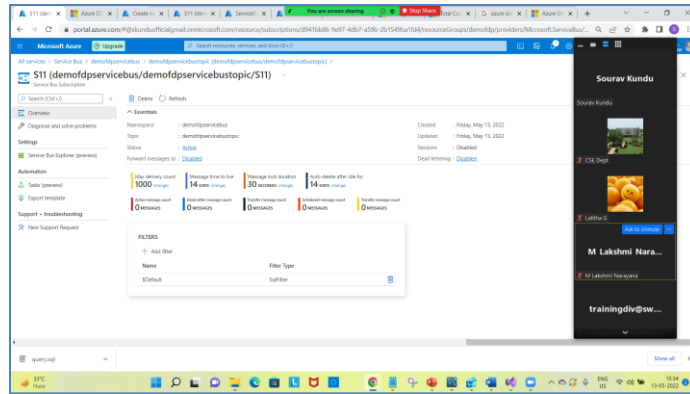
- The learners have clarified their doubts related to Azure storage, Azure Databases concepts

The afternoon session started with the Azure Network Services which include Virtual Network, Virtual Network Peering, VN Types – Point-to-Site, Site-to-Site, Azure ExpressRoute, Load Balancer, and Application Gateway followed by Azure Network Security features. After that Service Bus and different IoT options available in Azure were covered. The following were delivered as part of the session:

- Learners got knowledge of Virtual Network, Virtual Network Peering, Azure ExpressRoute, Load Balancer, Application Gateway
- Performed hands-on practice of Virtual Network for a Virtual Machine

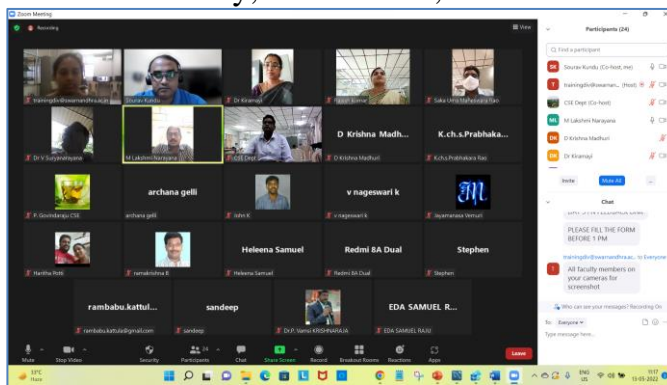


- Learners got knowledge of Azure Firewall, Azure DDoS Protection, and Network Security Groups
- Learners got knowledge of Azure Service Bus with a hands-on demonstration of the following:
  - Azure Service Bus Queue
  - Azure Service Bus Topic



- Learners got knowledge of IoT services such as Azure IoT Hub, Azure IoT Central, and Azure Sphere

- The learners have clarified their doubts related to Azure Networking, Azure Network Security, Service Bus, and IoT con



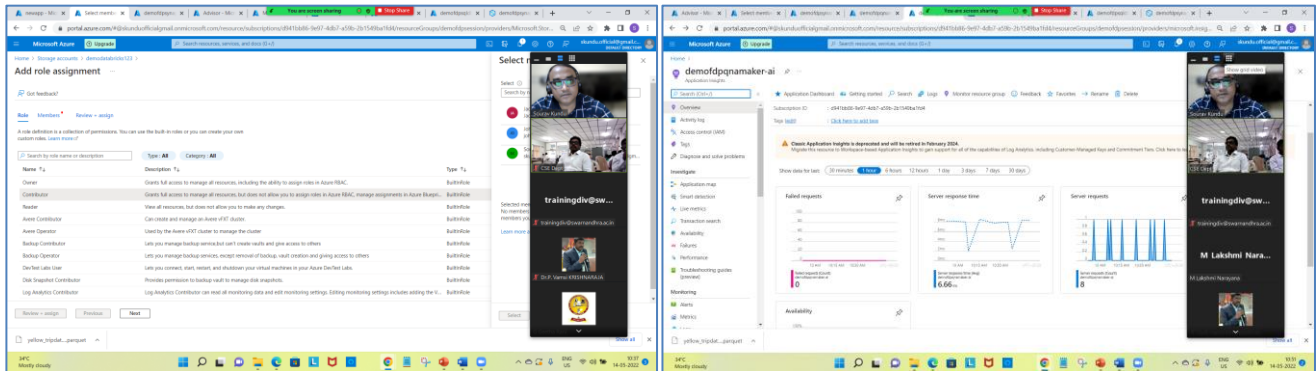
#### Day - 4: Microsoft Azure: 15-May-2022

### Technical Session

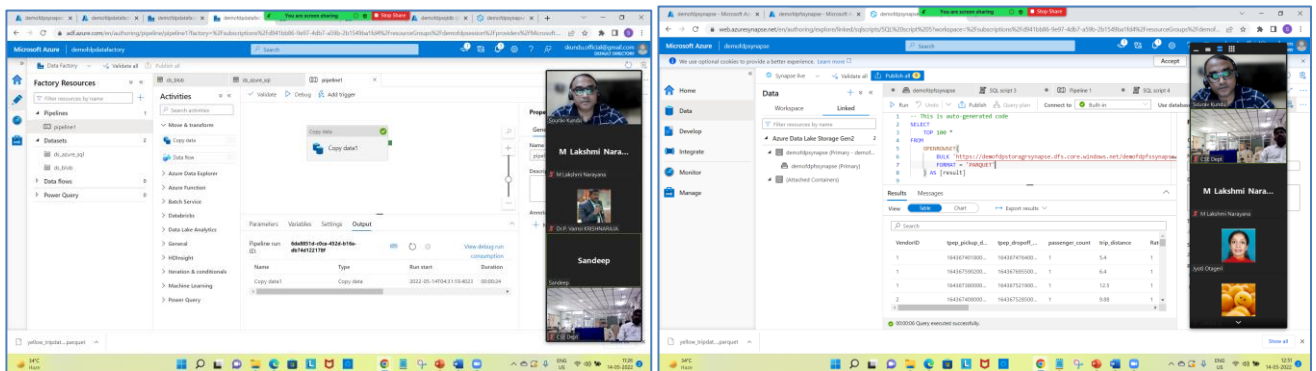
The morning session started with the Azure Identity Services which include Azure Active Directory, Multifactor Authentication, and Conditional Access. The following were delivered as part of the session:

- Learners got knowledge of Azure Active Directory, Multifactor Authentication, and Conditional Access
- Discussed Role-Based Access Control
- Discussed different Monitoring Services:
  - Azure Monitor
  - Azure Advisor
  - Azure Service Health

- The learners have clarified their doubts related to Azure Identity Services, Role-Based Access Control, and different Monitoring Services



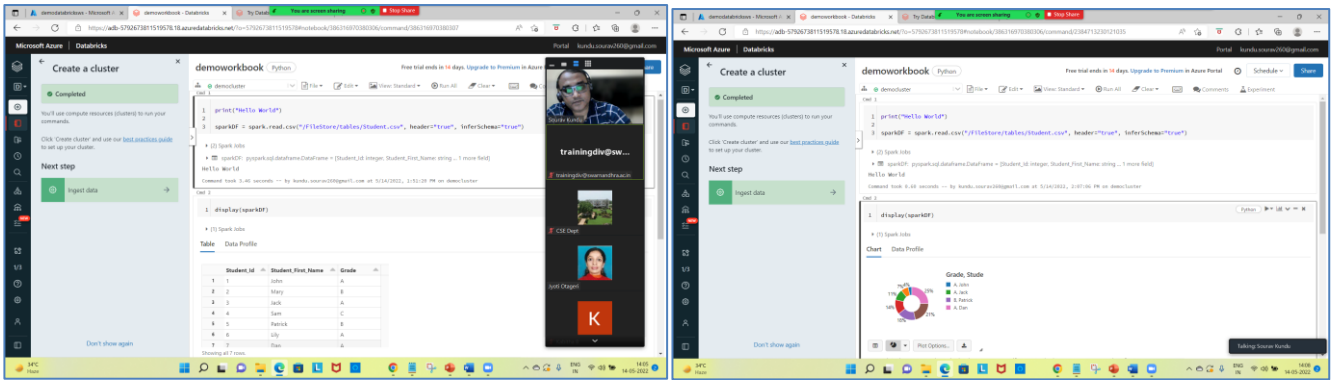
- Learners got knowledge of Azure Data Factory and Azure Synapse Analytics
- Performed hands-on demonstration of Azure Data Factory and Azure Synapse Analytics along with an end-to-end demo the of the data migration using Azure Data Factory
- Learners performed hands-on practice of the Azure Data Factory.



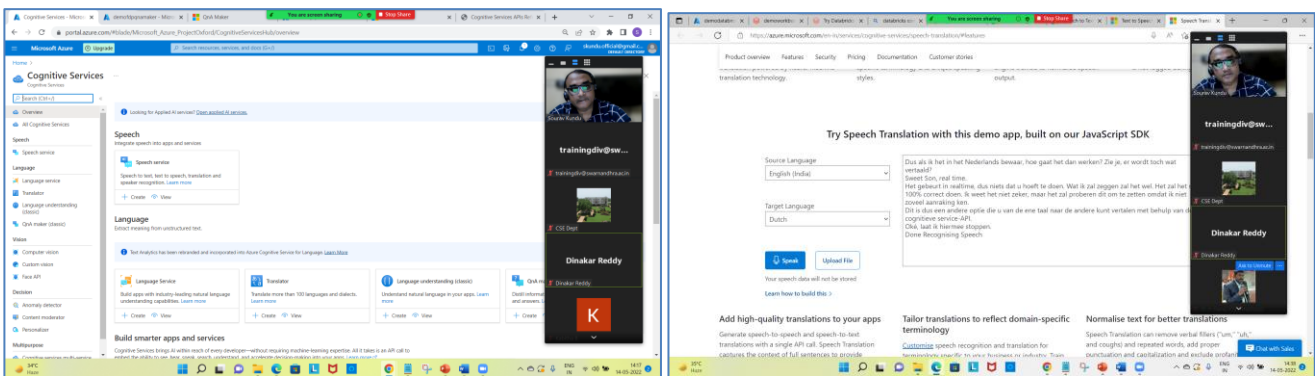
The afternoon session started with the Azure Databricks and then moved on to Azure Cognitive Services followed by Azure Streaming Analytics and Azure General Security Features. The following were delivered as part of the session:

- Learners got knowledge of Azure Databricks
- Performed hands-on demonstration of Azure Databricks

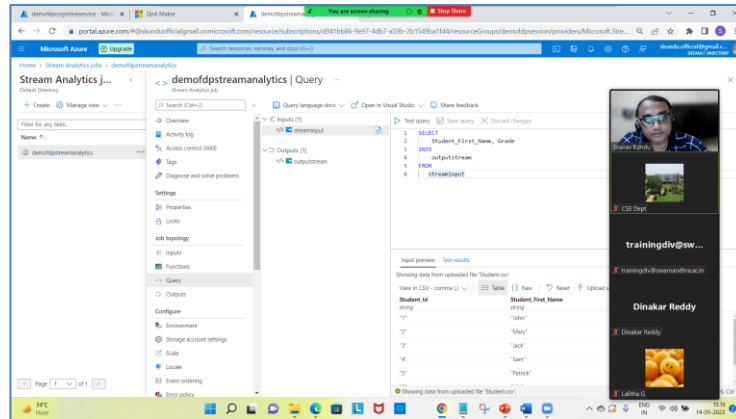




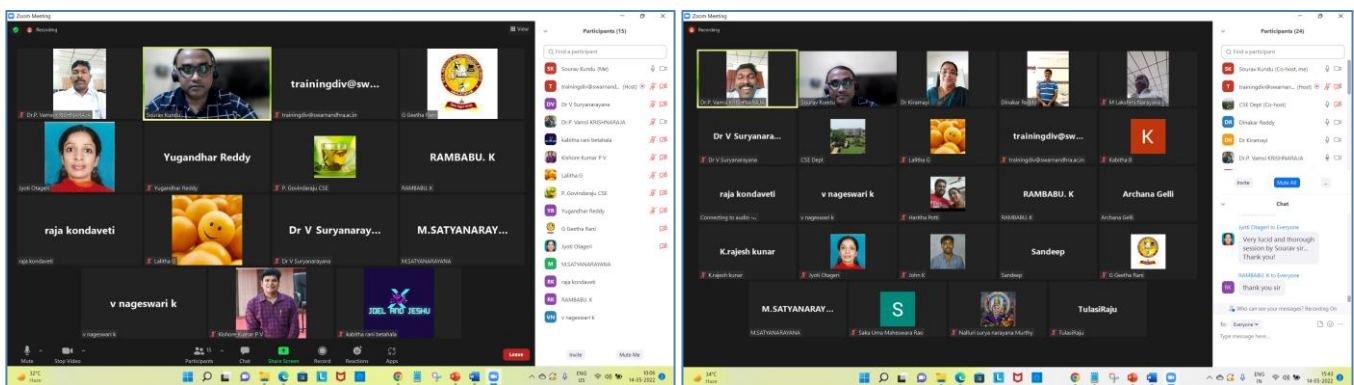
- Discussed and performed a hands-on demonstration of Azure Cognitive Services on the following:
  - Computer Vision API
  - Form Recognizer API
  - Speech Service API
  - Language API
  - Decision Services
  - Bot Service
- Learners performed hands-on practice of Azure Cognitive Services and created a Bot Service



- The learners have clarified their doubts related to Azure Cognitive Services
- Learners got knowledge of Azure Stream Analytics with hands-on demonstration.



- Learners got knowledge of General Security features of Azure such as Microsoft Defender for Cloud, Azure Sentinel, and Azure Key Vault



## Day - 5: Teaching Methodologies: 14-May-2022

The most important topic of Teaching Methodologies is Bloom's Taxonomy and Benjamin bloom's cognitive taxonomy (from lowest to highest level) with the Diagram. Followed by the Discovery Learning model by **Jerome Bruner**. With the comparisons and the sessions on the **ARCS** model by **John Keller**.

After the tea break, the principles of andragogy (adult learning) by **Dr. Malcolm Knowles** with interaction and pic & speak with all the Trainers. Since the sessions are going to be the new launch of our "**PANCHATHANTRA**" in comparison with all above where the stories carried the most interesting & effective dialogues in every learner.

the world's oldest & first innovative methodology of teaching "**PANCHATHANTRA**" to Edgardale's model.

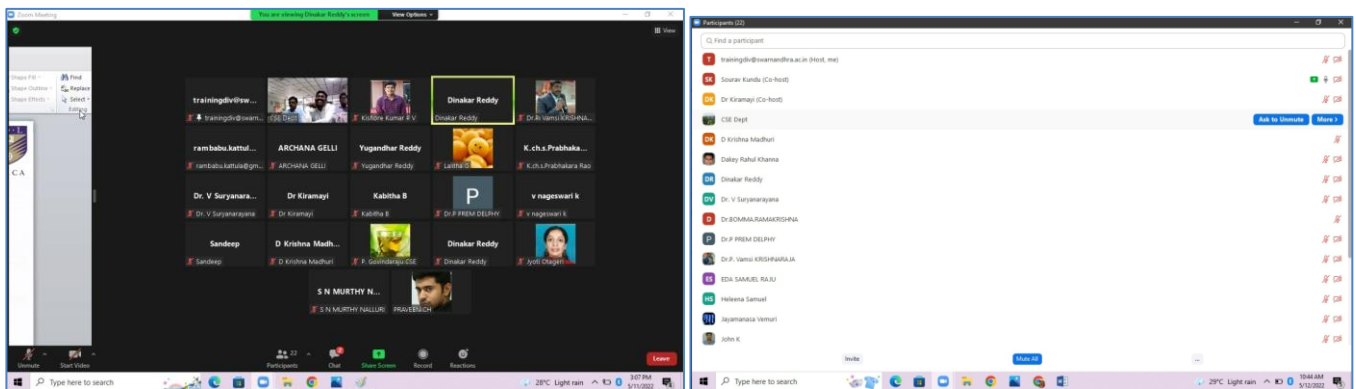


tools & methods for fostering participative & inductive learning, the relevance of psychosocial interventions in the class, for ensuring the psychological engagement of learners

The real need for **LST** and its importance was clearly understood as a **MUST** by the learners as a part of the regular curriculum. Working on their own, to grasp all concepts with examples, memory, shortcuts, and tips, a flash of current affairs also played well. The feedback and the testimonials of every individual made all the participants more informative with different perceptions.

1. Dialogue-driven interaction
2. Role Play & JAM
3. Case Study, Compare & Contrast
4. Group Discussion
5. Motivational Stories
6. Motivational Interview
7. Constructive Feedback
8. Statistics, Data & History
9. Appreciative Inquiry
10. Assessment

### Problem-solving through Design thinking



TOPIC/ LEARNING NPUTS	THEME	EFFECT
ANDRAGOGY	<p>The Facilitator explained the four principles of ANDRAGOGY.</p> <ul style="list-style-type: none"> <li>● Adult learning is more oriented toward problem-solving than content-centric</li> <li>● Adults tend to learn from</li> </ul>	<p>The learners achieved conceptual clarity regarding the principles of ANDRAGOGY.</p> <p>Many of them endorsed the views of Experiential Learning &amp; Learning through Problem Solving</p>

	<p>practical experiences</p> <ul style="list-style-type: none"> <li>● Adults prefer topics that are relevant to their professional life and personal life</li> <li>● Adults should be involved in the planning and implementation of their instruction.</li> </ul>	<p>Many of the learners affirmed that for ensuring success in live classes, Online Learning &amp; Blended Learning, it is necessary to engineer a paradigm shift from PEDAGOGY to ANDRAGOGY</p>
FACILITATION	<p>The Facilitator explained the features of Facilitation with major emphasis on the following topics:</p> <ul style="list-style-type: none"> <li>● It is characterized by continual dialogue between learners and facilitator</li> <li>● It facilitates the learners to introspect and unleash their hidden potential</li> <li>● It motivates the learners to ensure their active and spontaneous participation in the learning process.</li> <li>● It facilitates the learners to interact with each other and achieve the learning goal in a collaborative pattern</li> <li>● It facilitates the learners to incur experiences from the learning process and to learn from the incurred experiences</li> </ul>	<p>The learners could understand the role of Facilitation in fostering</p> <ul style="list-style-type: none"> <li>● Collaborative Learning</li> <li>● Experiential Learning</li> <li>● Problem-Solving Based learning</li> <li>● Inquiry-based learning</li> <li>● Discovery Learning</li> </ul> <p>The learners endorsed the instrumental role of Facilitation in online learning &amp; blended learning</p>
ACHIEVEMENT MOTIVATION	<p>The Facilitator explained the instrumental role of Achievement Motivation in satisfying the learning goals of an individual.</p> <p>He also highlighted the tools and techniques for triggering Achievement Motivation among the learners</p>	<p>The learners developed a clear understanding of the role of Achievement Motivation while facilitating learners</p> <p>The learners appreciated the tools and techniques for triggering Achievement</p>

		<p>Motivation within the learners</p> <p>Some of the senior learners got motivated by the Facilitator and shared some tools administered by them for enhancing the Achievement Motivation of the learners</p>
<p>POSITIVE REINFORCEMENT</p>	<p>The Facilitator explained Positive Reinforcement by giving several examples, Live Stories &amp; Mythology.</p> <p>He enlightened the learners regarding the fact that when the desired behavior of a Learner/learner gets appreciated/acknowledged/ rewarded by an Educator then the frequency of the desired behavior gets increased.</p> <p>The appreciation or reward from the Educator acts as the stimulus of Positive Reinforcement which in turn encourages the repetition of the desired behavior.</p>	<p>The learners achieved conceptual clarity regarding the behavioral dynamics of Positive Reinforcement.</p> <p>Many of them opined that appreciation and reward are the instrumental factors in engineering behavioral modification in a positive direction</p> <p>Some senior leaders furnished their occupational experiences and indicated how they had reinforced the positive behavior of their subordinates through Rewards or financial incentives</p>
<p>BEHAVIOURAL MODELLING</p>	<p>The Facilitator gave practical examples &amp; Local Stories and demonstrated the concept.</p> <p>He/she made the learners enlightened with the fact that if a Facilitator appreciates or delivers rewards to a Learner/learner for an appreciable behavior, then the other learners try to replicate the outcome-oriented behavior of the successful Learners/participants.</p> <p>The rewarded participant becomes a role model for other participants. They</p>	<p>The learners appreciated the concept of behavioral modeling.</p> <p>Some senior learners opined that behavioral modeling becomes successful, only when the other participants are also motivated to achieve the rewards and appreciation.</p> <p>According to them if the other participants are not motivated to receive the reward that has been given to the successful</p>

	<p>start modeling the behavior of the rewarded participants, with the intent of being rewarded.</p>	<p>participant, then they will not replicate the outcome-oriented desired behavior of the successful participant.</p>
<p>ACTIVE LISTENING &amp; PARAPHRASING</p>	<p>A Facilitator always encourages the Learners to narrate their feedback, views, and opinions regarding the learned content</p> <p>During the narration delivered by a Learner/participant, the Facilitator listens to it with full concentration</p> <p>After the completion of the narration of the Learners/participant, the Facilitator repeats the essence of the narration of the participant but in a more polished, refined, and sophisticated language. He also prunes the irrelevant part of the Learners/participants' narration, replenishes the gaps, and adds value to it. This is termed PARAPHRASING</p> <p>Thus, after the completion of PARAPHRASING, the participants can understand which of the topics he/she missed out on and what were the erroneous points. The Learners learn from the paraphrased statements.</p> <p>The Learners also feel confident, when they find that the Facilitator is repeating the essence of his narration or idea before others remove the irrelevant parts.</p>	<p>The learners opined that Active Listening &amp; Paraphrasing are immensely significant tools in Facilitation.</p> <p>Some of the senior learners affirmed that apart from replenishing conceptual gaps and communication gaps, Paraphrasing plays an instrumental role in building up congenial relationships and emotive solidarity between the Participants and the Educators.</p> <p>Some learners stated that when the Facilitator paraphrases the essence of the narration of the participants then they understand that the Educator/Facilitator must have listened to their narration actively. This in turn boosts the morale of the learners.</p>
<p>PROBING</p>	<p>While narrating the learners may stop narrating suddenly, due to certain gaps in the thought process or emotional distractions</p>	<p>The learners highly appreciated Probing and stated that Probing is an essential part of facilitation.</p>

	<p>At this stage, the Facilitator asks probing questions to identify the cognitive and emotive challenges of the Learners.</p> <p>Probing questions facilitate the learners to introspect, execute critical thinking, replenish the gaps in thought process, recollect memories, leverage recent memories, etc.</p>	<p>Some of the senior learners opined that Probing could play an instrumental role in</p> <ul style="list-style-type: none"> <li>● Appreciative Inquiry</li> <li>● Paraphrasing</li> <li>● Problem Based Learning</li> <li>● Discovery Learning</li> </ul>
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<p>VISIONING</p>	<p>The Facilitator asks the Learners to illustrate their vision</p>	<p>The learners opined that VISIONING is an instrumental intervention that fosters and develops the ability to imagine and crystallize the intuitive power of a Learner.</p> <p>Some learners affirmed that Visioning builds up aspiration within participants and motivates them to achieve aspired goals</p>
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<p>APPRECIATIVE INQUIRY</p>	<p>It is a strength-focused intervention that aims at identifying the core strength and competence prevailing within the Learners. The Facilitator utilizes this intervention, especially for the participants who are not aware of their core competence. In this intervention, the Facilitator asks encouraging questions with aim of tracing out the achievements of the Learners in the recent past. Once the participant reveals his achievement, the Facilitator can ascertain the causative strength factors, embedded within the Learners that have fuelled the recent</p>	<p>The learners achieved conceptual clarity regarding the mechanism of Appreciative Inquiry. They stated that this strength-focused intervention will be very useful for them in their occupational arena, for identifying the hidden potential of their Learners</p>
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	achievement	
DESIGN THINKING	<p>Design Thinking is a purely human-centered, creative approach to solving multifarious problems of the target audience</p> <p>In this business world, it facilitates the process of designing the prototype of beneficial products and services that can satisfy the need and solve the problems of the customers</p> <p>In the educational arena, it facilitates the process of designing effective instructional materials for satisfying the needs and mitigating the problems of the Learners/ participants.</p> <p>Design Thinking is an entirely participant-focused or customer-focused approach to solving the problems of participants and customers.</p>	<p>The learners acquired competency in Design Thinking, by solving a Problem based on the principles of Design Thinking</p> <p>The learners opined that Design Thinking has played an instrumental role in unveiling their creative and analytical competency.</p> <p>Some of the learners affirmed that Design Thinking will significantly help the participants of Technical &amp; Vocational Education &amp; Training, in the future, to be empathetic to their target customers and to generate customer-friendly products and services that will solve the problems of the customer.</p>

### CRITICAL SUCCESS FACTORS (CSF)

Participation of the Learners/Faculty	The Facilitator encouraged the active participation of the learners / Faculty
Interaction among the Learners /Faculty	<p>A conscious effort was made by the Facilitator to ensure group discussion (GD), and dialogue-driven interaction among the Listeners/Colleagues /Participants.</p> <p>In some cases, a complex theme was explained by one learner to others</p> <p>In some cases, the learners/Faculty were allowed to share their real experiences with others in the form of stories</p>
ROLE PLAY for demonstration and explication	Role Plays were administered to demonstrate and explain complex thematic issues.
Linguistic Interpretation	Some of the learners/ Faculty were more comfortable deciphering English Language Stories. For them, I translated the learning inputs into the Telugu Language

	(Local Stories)
Participatory Evaluation of Learning Materials	The facilitator asked the learners to evaluate each of the learning inputs, in terms of effectiveness from the participants / Youngsters / Modern perspective Thus, there was a conscious effort on behalf of the Facilitator to ensure the engagement, enlightenment, and empowerment of the learners

**RESULT CHAIN:**

<b>OUTPUT</b>	<b>OUTCOME</b>	<b>IMPACT</b>
The learners have got apprised about the participatory training methods and psychosocial interventions that are deployed by a Facilitator to ensure engagement, enlightenment, and empowerment of the learners/ Faculty	It is expected that the learners will be able to conduct effective Facilitation in the online platform.  It is also expected that the Facilitators and the learners will be capable enough to draw the attention of their participants, reinforce their concentration, enhance their motivation, and ensure their psychological engagement in the learning sessions	It is expected that a greater number of youth can be accommodated in the classes /online training programs It is expected that the youth from remote rural areas will also get the opportunity of learning various skills from their regular classes & interaction sessions too. It is expected that the participants will get deeply engaged in the online & offline training programs aimed at skill acquisition & Practical / Lab. It is expected many trained skilled professionals will emerge and contribute significantly towards the industrial growth and economic development of our Society & Nation Development.

First Name	Last Name	Designation	Department	College Name
Akkala	Yugandhara Reddy	Assistant professor	CSE	SCET
Dr. V	SURYANARAYANA	Professor	CSE	Ramachandra College of Engineering
M	Satyanarayana	Associate professor	CSE	Swarnandhra College Of Engineering and technology
Lalitha	G	Assistant professor	CSE	SCET
Samuel Raju	Eda	Assistant Professor	CSE	Swarnandhra College of Engineering and Technology
Srinivasulu	Pamidi	Professor and HoD	CSE	Swarnandhra college of engineering and technology
Jayamanasa	Vemuri	Assistant professor	CSE	Ramachandra college of engineering
NAGAVALI	SAKA	Associate professor	CSE	Ramachandra college of engineering
P V Kishore	Kumar	Assistant Professor	CSE	Ramachandra College of Engineering
P	Govindaraju	Assistant Professor	CSE	SCET
M	LAKSHMI NARAYANA	Associate Professor	CSE	Swarnandhra College of Engineering and Technology
Murali	Marlapudi	Assistant Professor	ECE	Swarnandhra College of Engineering and Technology
CH.S.Prabhakara Rao	Kandula	Asst.professor	CSE	Swarnandhra college of engg
V Nageswari	Kamisetti	Assistant Professor	CSE	Swarnandhra college of Engineering and Technology
Rambabu	Kattula	Asst.prof	CSE	Swarnandhara college engg..tech.
Kaligithi	Rajesh Kumar	Associate Professor	CSE	Swarnandhra College of Engineering and Technology
SAKA	UMA MAHESWARA RAO	Assoc.prof	CSE	SCET
Kabitha	Rani	Lecturer	MCA	Sri Y N College(A)
Benazir	A. S	Assistant professor of English	CSE	Sri Vasavi College (Self-Finance wing)
Dr.D CH	PAPARAO	Associate Professor	IT	V.K.V.GOVERNMENT DEGREE COLLEGE
Jyoti	Otageri	Assistant Professor	S&H	Sinhgad College of Science, Pune
Neeruguddi	Kesaiah	MSc (zoology)	S&H	SBVR Degree & Pg College in Badvel
Krishna	Madhuri	Associate Professor	CSE	MREC
TUlasiraju	Nethala	Associate Professor	CSE	Swarnandhra College Of Engineering and Technology
Dr P Vamsi	KrishnaRaja	Professor	CSE	Swarnandhra College of Engineering and Technology
RAMAKRISHNA	Dr.BOMMA	Professor	CSE	SWARNANDHRA COLLEGE OF ENGINEERING AND TECHNOLOGY
ARCHANA	GELLI	ASSISTANT PROFESSOR	CSE	SWARNANDHRA COLLEGE OF ENGINEERING AND TECHNOLOGY
Sunil kumar	Jada	Assistant professor	CSE	Narasaraopeta Institute of Technology



KRISHNA SUNIL	PALVADI	Associate professor	MBA	Narasaraopeta institute of technology
G Geetha	Rani	Assistant professor	CSE	Bvcits
GIDLA VIJAYA	KUMARI	Associate professor	CSE	BVC INSTITUTE OF TECHNOLOGY AND SCIENCE
Rama Krishna Raju	Chekuri	Assistant Professor	IT	Swarnandhra College of Engineering and Technology
Sai sireesha	kurasala	Assistant professor	S&H	Swarnandra college
Dr. T. VENKATAKRISHNA	MOORTHY	Associate professor	ECE	SASI INSTITUTE OF TECHNOLOGYB& ENGINEERING
Sudheer Babu	Punuri	Asst Professor	CSE	Giet University
BONAM	SRIRAMA DURGA LAKSHMI	Assistant professor	CSE	BONAM VENKATA CHALAMAYYA INSTITUTE OF SCIENCE AND ENGINEERING
Dr.M. Sai	Kiranmayi	Professor	S&H	Swarnandhra Institute of Engineering and Technology
Heleena	VANGALAPUDI	Assistant professor	S&H	Swarnandhra institute of engineering and technology
N Surya Narayana Murthy	Murthy	Assistant Professor	ECE	Swarnandhra College of engineering and Technology
sadeep	sarella	analyst	ECE	swarnandhra college of engineering and technoogy
Madasu	Lakshmi	Assistant professor	S&H	Swarnandhra college of engineering and technology
NBS VIJAY	KUMAR	Assistant Professor	CSE	SWARNANDHRA COLLEGE OF ENGINEERING AND TECHNOLOGY
P. PREM	DELPHY	PROFESSOR	S&H	Swarnandhra College of Engineering and Technology
Sowjanya	G	Lecturer	MCA	Sri Y. N. College(Autonomous)
Dr. BALAMURUGAN	K	Professor	ECE	Swarnandhra College of Engineering and Technology
SIRISHA	KOLLATI	Lecturer	CSE	SRI YN COLLEGE (Autonomous)

\*\*\*\*\* **Thanking you all** \*\*\*\*\*