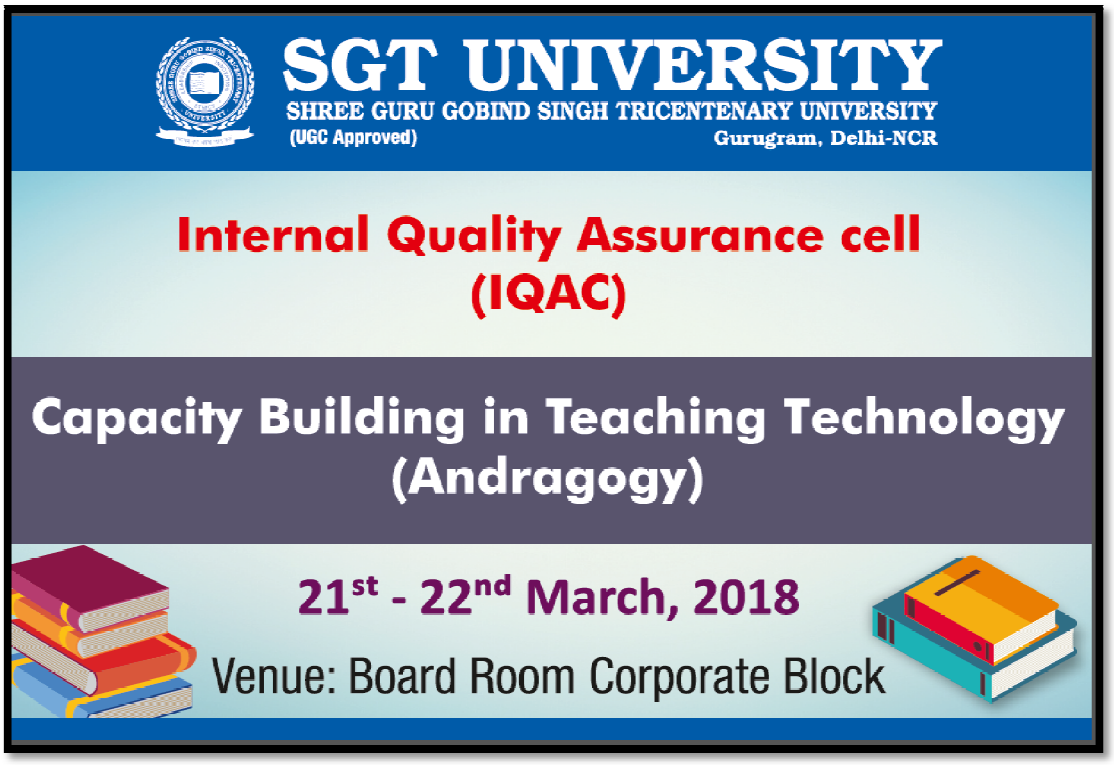
SGT UNIVERSITY
SHREE GURU GOBIND SINGH TRICENTENARY UNIVERSITY
(UGC Approved) Gurugram, Delhi-NCR
Budhera, Gurugram-Badli Road, Gurugram (Haryana) – 122505 Ph. : 0124-2278183, 2278184, 2278185

# REPORT ON 5th CAPACITY BUILDING PROGRAMME IN TEACHING TECHNOLOGY



## Foreword

*IQAC is the technical reform unit of SGT University, constantly trying to produce multi-directional quality upliftment of the university in every respect, from syllabus to teaching through the result declaration including graduation, with quality par excellence.*

*In this sports ground, the IQAC conducts Faculty training programme through in-house and external training agencies as well as renowned personalities frequently. IQAC, SGT University has undertaken Teachers' training programme in Developing Teaching Tools, Improving the Capacity of the teachers in teaching technology, understanding UNCLE (Unconventional Learning Exercises) or using Newer Teaching Methods from time to time.*

*The present report pertains to the 5$^{th}$ in-house training of newly recruited faculties of the University from all the 17 Faculty branches those are taught here. The training will be completed in three batches, since these trainings are given in hands-on-practice method. This training was of very high quality and my team of IQAC has put on stupendous activity with their utter sincerity and effective capability. I thank them all from the core of my heart.*

*The entire IQAC is incepted to the Chairman SGT University, Mr. Manmohan Singh Chawla, whose personal effort, periodic suggestion and torching has resulted in making the Capacity building programme a success.*

***T D Dogra***
***Director, IQAC,***
***SGT University*, Gurugram**

## Introduction

A **teaching method** comprises the principles and methods used by teachers to enable student learning. These strategies are determined partly on subject matter to be taught and partly by the nature of the learner. For a particular teaching method to be appropriate and efficient it has to be in relation with the characteristic of the learner and the type of learning it is supposed to bring about. Suggestions are there to design and selection of teaching methods must take into account not only the nature of the subject matter but also how students learn. In today's school the trend is that it encourages a lot of creativity. It is a known fact that human advancement comes through reasoning. This reasoning and original thought enhances creativity. This is the basic thinking process which mooted the concept of Andragogy…as "How do Adults learn!". Thus IQAC, SGT University initiated Adult Learning with Newer Teaching Technology. From initiation of teaching till Andragogy it has taken many more moldings starting from the ancient education……

**Ancient education**

About 3000 BC, with the advent of writing, education became more conscious or self-reflecting, with specialized occupations such as scribe and astronomer requiring particular skills and knowledge. Philosophy in ancient Greece led to questions of educational method entering national discourse. In his literary work *The Republic*, Plato described a system of instruction that he felt would lead to an ideal state. In his dialogues, Plato described the Socratic method, a form of inquiry and debate intended to stimulate critical thinking and illuminate ideas. It has been the intent of many educators since, such as the Roman educator Quintilian, to find specific, interesting ways to encourage students to use their intelligence and to help them to learn

**Medieval education**

Comenius, in Bohemia, wanted all children to learn. In his *The World in Pictures*, he created an illustrated textbook of things children would be familiar with in everyday life and used it to teach children. Rabelais described how the student Gargantua learned about the world, and what is in it. Much later, Jean-Jacques Rousseau in his *Emile*, presented methodology to teach children the elements of science and other subjects. During Napoleonic warfare, the teaching

methodology of Johann Heinrich Pestalozzi of Switzerland enabled refugee children, of a class believed to be un-teachable, to learn.

**19th century - compulsory education**

The Prussian education system was a system of mandatory education dating to the early 19th century. Parts of the Prussian education system have served as models for the education systems in a number of other countries, including Japan and the United States. The Prussian model required classroom management skills to be incorporated into the teaching process.

**Evolution of teaching methods**

The approaches for teaching can be broadly classified into teacher centered and student centered. In Teacher-Centered Approach to Learning, Teachers are the main authority figure in this model. Students are viewed as “empty vessels” whose primary role is to passively receive information (via lectures and direct instruction) with an end goal of testing and assessment. It is the primary role of teachers to pass knowledge and information onto their students. In this model, teaching and assessment are viewed as two separate entities. Student learning is measured through objectively scored tests and assessments. In Student-Centered Approach to Learning, while teachers are the authority figure in this model, teachers and students play an equally active role in the learning process. The teacher’s primary role is to coach and facilitate student learning and overall comprehension of material. Student learning is measured through both formal and informal forms of assessment, including group projects, student portfolios, and class participation. Teaching and assessments are connected; student learning is continuously measured during teacher instruction. Commonly used teaching methods may include class participation, demonstration, recitation, memorization, or combinations of these. Howard Gardner identified a wide range of modalities in his Multiple Intelligences theories. The Myers-Briggs Type Indicator and Keirsey Temperament Sorter, based on the works of Jung, focus on understanding how people's personality affects the way they interact personally, and how this affects the way individuals respond to each other within the learning environment. It is clear from the impact of teaching strategies on learning strategies in first-year higher education cannot be overlooked nor over interpreted, due to the importance of students' personality and academic motivation which also partly explain why students learn the way they do.

**Lecturing**

The lecture method is just one of several teaching methods, though in schools it’s usually considered the primary one. The lecture method is convenient for the institution and cost-efficient, especially with larger classroom sizes. This is why lecturing is the standard for

most college courses, when there can be several hundred students in the classroom at once; lecturing lets professors address the most people at once, in the most general manner, while still conveying the information that he or she feels is most important, according to the lesson plan. While the lecture method gives the instructor or teacher chances to expose students to unpublished or not readily available material, the students plays a passive role which may hinder learning. While this method facilitates large-class communication, the lecturer must make constant and conscious effort to become aware of student problems and engage the students to give verbal feedback. It can be used to arouse interest in a subject provided the instructor has effective writing and speaking skills.

**Demonstrating**

Demonstrating is the process of teaching through examples or experiments. For example, a science teacher may teach an idea by performing an experiment for students. A demonstration may be used to prove a fact through a combination of visual evidence and associated reasoning. Demonstrations are similar to written storytelling and examples in that they allow students to personally relate to the presented information. Memorization of a list of facts is a detached and impersonal experience, whereas the same information, conveyed through demonstration, becomes personally relatable. Demonstrations help to raise student interest and reinforce memory retention because they provide connections between facts and real-world applications of those facts. Lectures, on the other hand, are often geared more towards factual presentation than connective learning.

**Collaborating**

Collaboration allows students to actively participate in the learning process by talking with each other and listening to others opinions. Collaboration establishes a personal connection between students and the topic of study and it helps students think in a less personally biased way. Group projects and discussions are examples of this teaching method. Teachers may employ collaboration to assess student's abilities to work as a team, leadership skills, or presentation abilities. Collaborative discussions can take a variety of forms, such as fishbowl discussions. After some preparation and with clearly defined roles, a discussion may constitute most of a lesson, with the teacher only giving short feedback at the end or in the following lesson.

**Discussion**

The most common type of collaborative method of teaching in a class is classroom discussion. It is the also a democratic way of handling a class, where each student is given equal opportunity to interact and put forth their views. A discussion taking place in a classroom can be either facilitated by a teacher or by a student. A discussion could also follow a presentation or a

demonstration. Class discussions can enhance student understanding, add context to academic content, broaden student perspectives, highlight opposing viewpoints, reinforce knowledge, build confidence, and support community in learning. The opportunities for meaningful and engaging in-class discussion may vary widely, depending on the subject matter and format of the course. Motivations for holding planned classroom discussion, however, remain consistent. An effective classroom discussion can be achieved by probing more questions among the students, paraphrasing the information received, using questions to develop critical thinking with questions like "What solutions do you think might solve this problem? Or "How does this relate to what we have learned about?.... etc……

**Debriefing**

The term “debriefing” refers to conversational sessions that revolve around the sharing and examining of information after a specific event has taken place. Depending on the situation, debriefing can serve a variety of purposes. It takes into consideration the experiences and facilitates reflection and feedback. Debriefing may involve feedback to the students or among the students, but this is not the intent. The intent is to allow the students to "thaw" and to judge their experience and progress toward change or transformation. The intent is to help them come to terms with their experience. This process involves a cognizance of cycle that students may have to be guided to completely debrief. Teachers should not be overly critical of relapses in behaviour. Once the experience is completely integrated, the students will exit this cycle and get on with the next.

**Classroom Action Research**

Classroom Action Research is a method of finding out what works best in the classroom so as to improve student learning. We know a great deal about good teaching in general (e.g. McKeachie, 1999; Chickering and Gamson, 1987; Weimer, 1996), but every teaching situation is unique in terms of content, level, student skills and learning styles, teacher skills and teaching styles, and many other factors. To maximize student learning, a teacher must find out what works best in a particular situation. Each teaching and research method, model and family is essential to the practice of technology studies. Teachers have their strengths and weaknesses, and adopt particular models to complement strengths and contradict weaknesses. Here, the teacher is well aware of the type of knowledge to be constructed. At other times, teachers equip their students with a research method to challenge them to construct new meanings and knowledge. In schools, the research methods are simplified, allowing the students to access the methods at their own levels. For example Problem Based Learning could be used as action Research tool as has been shown overleaf.

# TROUBLESHOOTING COMPUTER PROBLEMS

| | Problem | Why | Solution |
|---|---|---|---|
| 1 | **Deleted a file** | *Deleted by accident* | Open Recycle Bin—right-click--restore |
| 2. | **Can't exit a program** | *Can't find X or Quit* | Alt+F4 |
| 3. | **Can't find a program** | *Shortcut moved* | Type 'Word' (or program name) into Search bar |
| 4. | **Keyboard doesn't work** | *Unplugged, lost file* | Plug cord into back; reboot |
| 5. | **Mouse doesn't work** | *Unplugged, lost file* | Plug cord into back, reboot |
| 6. | **Start button is gone** | *Task bar gone* | Push Windows button |
| 7. | **No sound** | *Mute on* | Unmute |
| | | *Volume down* | turn volume up |
| | | *Unplugged headphones* | plug headphones in |
| | | *Lost file* | Reboot |
| 8. | **Can't find a file** | *Saved wrong, moved* | Start button—Search |
| 9. | **Menu command grayed out** | *You're in another command* | Push escape 3 times |
| 10. | **What's today's date?** | *You forgot!* | Hover over the clock |
| 11. | **Taskbar gone** | *Student interference* | Push Windows button<br>Drag border up to expose |
| 12. | **Taskbar was moved** | *Student interference* | Drag it to the bottom of screen |
| 13. | **Desktop icons messed up** | *Student interference* | Right click on screen—arrange icons<br>Too small? Highlight and Ctrl+ to enlarge |
| 14. | **Computer frozen** | *Mouse frozen* | Reboot |
| 15. | **Program frozen** | *Dialog box open* | Clear the dialog box |
| | | *Not selected on taskbar* | Click program on taskbar |
| 16. | **I erased my document/text** | *Ooops* | Ctrl+Z |
| 17. | **Screen says "Ctrl-Alt-Del"** | *You rebooted* | Hold down Ctrl-Alt—push Delete |
| 18. | **Program closed down** | *Ooops* | Is it open on the taskbar? If so—click on it<br>Reopen program—see if it saved a back-up |
| 19. | **Tool bar missing on www** | *Pushing F11 key* | Push F11 key |
| 20. | **Internet window too small** | *Hard to read* | Ctrl+ to enlarge; Ctrl- to delarge (or Ctrl+mouse wheel) |
| 21. | **Double click doesn't work** | *Who knows?* | Push enter |
| 22. | **Shift key doesn't work** | *Caps lock on* | Push caps lock to disengage |
| 23. | **I can't remember how to…** | *So many skills…* | Try a right click with the mouse |
| 24. | **When I type, it types over** | *I want to insert text* | Push the 'insert' key |
| 25. | **The document is 'read only'** | *I didn't do anything* | Just 'save-as' under a new name and all is fixed |

Taking all the above facts in to the serious consideration the IQAC developed the Schedule for few Newer Teaching Methods to be handed over to the faculty members. The purpose is to create an environment where old Lecture Type teaching will be replaced by Newer Student Centered Teaching. Which started with Registration (in forth coming page)

Today there has been 150 types of teaching techniques available. SGT University has been trying to adopt only Newer techniques, and Lecturing is being avoided.

## 150 Teaching Methods

1. Lecture by teacher (discouraged in SGT University)
2. Class discussion conducted by teacher (Accepted up to 40%)
3. Recitation oral questions by teacher answered orally by students (Within 40% as above)
4. Discussion groups conducted by selected student chairpersons (Within 40% as above)
5. Lecture-demonstration by teacher (Within 40% as above)
6. Lecture-demonstration by another instructor(s) from a special field (guest speaker)
7. Presentation by a panel of instructors or students
8. Presentations by student panels from the class: class invited to participate
9. Student reports by individuals
10. Student-group reports by committees from the class
11. Debate (informal) on current issues by students from class
12. Class discussions conducted by a student/ student committee
13. Forums
14. Bulletin boards
15. Small groups such as task oriented, discussion, Socratic
16. Choral speaking
17. Collecting
18. Collecting
19. Textbook assignments
20. Reading assignments in journals, monographs, etc.
21. Reading assignments in supplementary books
22. Assignment to outline portions of the textbook
23. Assignment to outline certain supplementary readings
24. Debates (formal)
25. Crossword puzzles
26. Cooking foods of places studied
27. Construction of vocabulary lists
28. Vocabulary drills
29. Diaries
30. Dances of places or periods studied
31. Construction of summaries by students
32. Dressing dolls
33. Required term paper
34. Panel discussion
35. Biographical reports given by students
36. Reports on published research studies and experiments by students
37. Library research on topics or problems
38. Written book reports by students
39. Flags
40. Jigsaw puzzle maps
41. Hall of Fame by topic or era (military/ political leaders, heroes)
42. Flannel boards
43. Use of pretest
44. Gaming and simulation
45. Flash cards
46. Flowcharts
47. Interviews
48. Maps, transparencies, globes
49. Mobiles
50. Audio-tutorial lessons (individualized instruction)

51. Models
52. Music
53. Field trips
54. Drama, role playing
55. Open textbook study
56. Notebook
57. Murals and montages
58. Class projects
59. Individual projects
60. Quiz down gaming
61. Modeling in various media
62. Pen pals
63. Photographs
64. Laboratory experiments performed by more than two students working together
65. Use of dramatization, skits, plays
66. Student construction of diagrams, charts, or graphs
67. Making of posters by students
68. Students drawing pictures or cartoons vividly portray principles or facts
69. Problem solving or case studies
70. Puppets
71. Use of chalkboard by instructor as aid in teaching
72. Use of diagrams, tables, graphs, and charts by instructor in teaching
73. Use of exhibits and displays by instructor
74. Reproductions
75. Construction of exhibits and displays by students
76. Use of slides
77. Use of filmstrips
78. Use of motion pictures, educational films, videotapes
79. Use of theater motion pictures
80. Use of recordings
81. Use of radio programs
82. Use of television
83. Role playing
84. Sand tables
85. School affiliations
86. Verbal illustrations: use of anecdotes and parables to illustrate
87. Service projects
88. Stamps, coins, and other hobbies
89. Use of community or local resources
90. Story telling
91. Surveys
92. Tutorial: students assigned / students assistaed, peer teaching
93. Coaching: special assistance provided for students having difficulty in the course
94. Oral reports
95. Word association activity
96. Workbooks
97. Using case studies reported in literature to illustrate psychological principles and facts
98. Construction of scrapbooks
99. Applying simple statistical techniques to class data
100. Time lines
101. "Group dynamics" techniques

102. Units of instruction organized by topics
103. Non directive techniques applied to the classroom
104. Supervised study during class period
105. Use of sociometric text to make analysis of class
106. Use of technology and instructional resources
107. Open textbook tests, take home tests
108. Put idea into picture
109. Write a caption for chart, picture, or cartoon
110. Reading aloud
111. Differentiated assignment and homework
112. Telling about a trip
113. Mock convention
114. Filling out forms (income tax, checks)
115. Prepare editorial for school paper
116. Attend council meeting, school board meeting
117. Exchanging "things"
118. Making announcements
119. Taking part (community elections)
120. Playing music from other countries or times
121. Studying local history
122. Compile list of older citizens as resource people
123. Students from abroad (exchange students)
124. Obtain free and low cost materials
125. Collect old magazines
126. Collect colored slides
127. Visit an "ethnic" restaurant
128. Specialize in one country
129. Follow a world leader (in the media)
130. Visit an employment agency
131. Start a campaign
132. Conduct a series
133. Investigate a life
134. Assist an immigrant
135. Volunteer (tutoring, hospital)
136. Prepare an exhibit
137. Detect propaganda
138. Join an organization
139. Collect money for a cause
140. Elect a "Hall of Fame" for males
141. Elect a "Hall of Fame" for females
142. Construct a salt map
143. Construct a drama
144. Prepare presentation for senior citizen group
145. Invite senior citizen(s) to present local history to class including displaying artifacts (clothing, tools, objects etc.)
146. Prepare mock newspaper on specific topic or era
147. Draw a giant map on floor of classroom
148. Research local archaeological site
149. Exchange program with schools from different parts
150. Brainstorming small group, to identify a list of techniques and strategies that best fit their class.

Of all the150 teaching methods the IQAC, SGT University adopted only 21 Newer methods for cognitive (15), Psychomotor (3) and Assessment Techniques development as below:

## Cognitive Skills

1. Student's Interactive Session(SIS)
2. Student's Seminar(SS)
3. Teacher's Seminar(Multispecialty)
4. Project Based Learning(PBL)
5. Problem Based Learning(PBL)
6. Case Studies
7. Integrated Teaching
    - Intra-faculty (Within one faculty)
    - Interfaculty( More than one faculty)
8. Focus Group Discussion
9. Spot Group Discussion
10. Presentation cum Panel discussion( By Teachers)
11. Presentation cum Panel discussion ( By Students)
12. Fish Bowl Technique
13. Role Play
14. Simulation Technique
15. Tutorials

## Psychomotor Skills

1. Unconventional Clinical Examination
2. Unconventional Practical Examination
3. Hands- on

## Assessment Techniques

1. Objective type questions
2. Objective Structured Clinical Examination(OSCE)
3. Objective Structured Practical Examination (OSPE)

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IQAC

# 5th Capacity Building in Teaching Technology
# REGISTRATION FORM

Name of the Faculty:……Age……M/F

Faculty……Department……

Whether Trained in Teaching Technology Earlier……Y/N

Signature

IQAC
Internal Quality Assurance Cell

## 5th Capacity Building in Teaching Technology

21st March 2018

| S. N | Name of the Faculty | Signature Morning Session(9.30-1.15PM) | Signature Evening Session (2-3.30PM) |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |

## Team IQAC,SGT University

**[ Prof.TD Dogra (front), L to R: Dr. Sarju Devi, Ms. Arvinder Pabla, Dr. Astha Chaudhry, Prof.SC Mohapatra, Mr.Anil Sharma]**

Under the leadership of our Director IQAC. Dr T.D Dogra, Dr S.C Mohapatra, Incharge Capcity Building program formally inaugurated the program. This was followed by Ice breaking and Pre-training Evaluation by Prof. SC Mohapatra and Ms. Arvinder Pabla. All the activities were carried out in the Board Room of the Corporate Building of SGT University.


After the inauguration, ice breaking session was started by Ms Arvinder Kaur Pabla and Dr Sarju Devi wherein all the participants were asked to pick up a slip from bowl and emulate the sound of the animal/bird written over it to find their partner for the programme. Once the pairs were formed, they were

made to sit with their partners to know them better. Each pair was then called out wherein each member introduced their partner stating the common things and dissimilarities between them.

**( The participants sitting in pairs and trying to know more about their partners)**

**(Each participant describing their partner)**

After the ice breaking session, the pre-training assessment was explained by Ms Arvinder Kaurr Pabla and sheets were distributed to all the participants.

**(Prof S.C Mohapatra and Ms Arvinder pabla explaining about the Pre-training assessment)**

# CAPACITY BUILDING IN TEACHING TECHNOLOGY

## PRE & POST TRAINING ASSESSMENT

**DATE:**

**NAME:** **FACULTY:**

1. Name the subjects that you are teaching.
2. When did you join SGT University?
3. Have you undergone any training on teaching methodologies earlier? If any, p lease specify.
4. What do you understand by 'Student Interactive Session' (SIS)?
5. Share two ways through which SIS can be held.
6. Can defining the concept in the class be considered as demonstration technique?
7. No planning is required for demonstration technique. State whether true or false.
8. What are the steps involved in demonstration technique?
9. When is 'Fishbowl Technique' used in teaching?
10. Give one advantage of using 'Fishbowl Technique'.
11. What are the key skills developed in students when we undertake 'Problem Based Learning' (PBL)?
12. Can PBL be used as an assessment tool?
13. PBL is relevant only for medical streams. State whether true or false.

14. What is lesson plan?

15. Give one example where you can use panel discussion as a method of teaching in your stream.

16. Should panel discussion be followed by question answer session?

17. What is the difference between role play and simulation?

18. Can role play lead to stereotyping of the characters?

19. What plays a bigger role in group discussion: words or body language?

20. Can group discussion end on non conclusive note?

**Time Schedule**

The time schedule was prepared for 3 batches assuming 30 participants will be admitted each day. The schedule is given below.

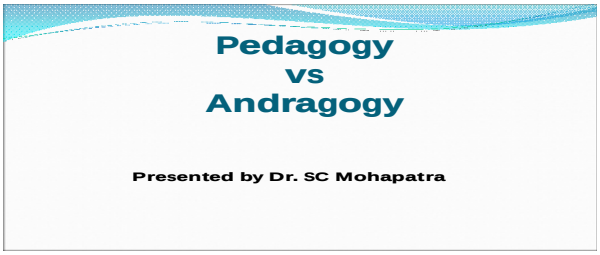
**TIME SCHEDULE**

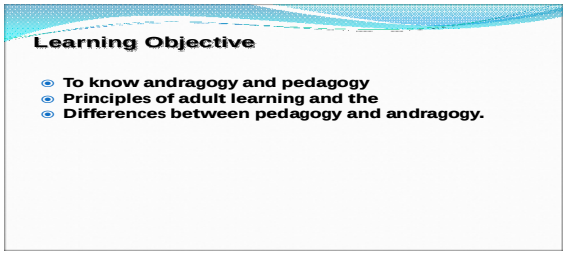
<table>
<tr><th>Day</th><th>10:00-10:45am</th><th>10:45-11:15 am</th><th>11:15-12:15 pm</th><th>12:15-1:15pm</th><th>1:15 to 2:00 pm</th><th>2:00-2:45pm</th><th>2:45-3:30pm</th></tr>
<tr><td>Day 1</td><td>Ice Breaking<br>Self Introduction<br>Pre Training Evaluation<br><br>Prof SC Mohapatra & Ms Arvinder Kaur Pabla</td><td rowspan="2">TEA BREAK</td><td>Student Interactive session<br><br>Dr Sarju Devi & Ms Arvinder Kaur Pabla</td><td>Demonstration technique<br><br>Mr Harsh Upreti</td><td rowspan="2">LUNCH</td><td>Problem based learning<br><br>Dr Sham Lal Singla</td><td>Fish Bowl technique<br><br>Dr S.C Mohapatra</td></tr>
<tr><td>Day 2</td><td>Panel Discussion<br><br>Dr Reshu Madan</td><td colspan="2">Role Play & Simulation<br><br>Ms Manisha & Ms Mamata Akoijam</td><td>Spot / Focus Group Discussion<br><br>Dr Astha Chaudhry</td><td>Post Training Evaluation<br><br>Valedictory session</td></tr>
</table>

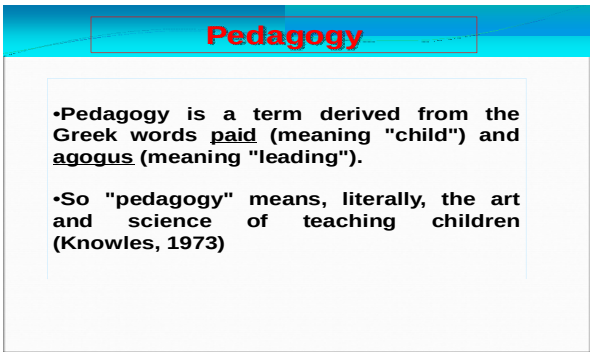
**30 participants** in each batch.
**3 batches - 13th -14th March 2018**
**- 21st-22nd March 2018**
**Venue: Board Room, Corporate Block**

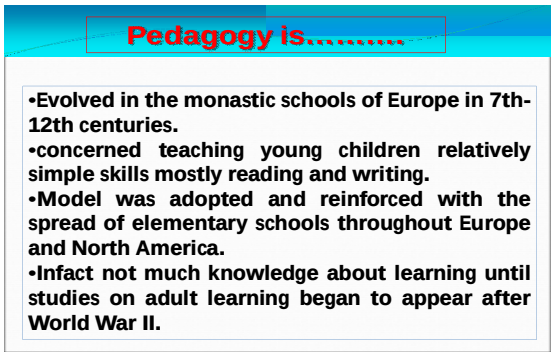
All the teaching programme were so tuned, it made the participants to get involved to their fullest extent of capability.

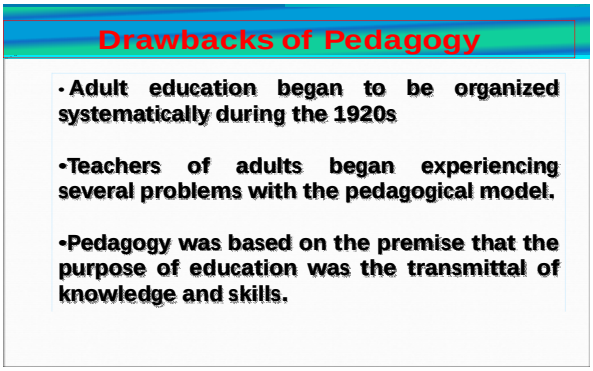
The Participants were made to understand the differences between pedagogy and Androgoy by slides as below:

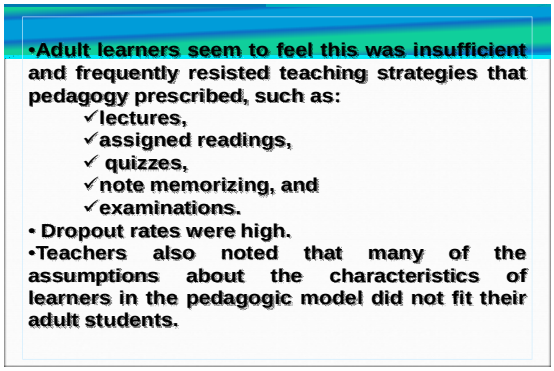


## Andragogy

•The term andragogy was coined in 1833 by the German teacher Alexander Kapp.

•Andragogy is based on the Greek word aner with the stem andra meaning "man, not boy" or adult, and agogus meaning "leader of."

•Andragogy was first introduced to the United States in 1927 by Martha Anderson and Eduard Linderman, but they did not attempt to develop the concept .

•The goal of adult education should be self-actualization; thus, the learning process should involve the whole emotional, psychological, and intellectual being.

•The mission of adult educators is to assist adults to develop their full potential, and andragogy is the teaching methodology used to achieve this end.

## About Andragogy

Andragogy is premised on four crucial assumptions about the characteristics of learners that are different from the assumptions on which traditional pedagogy is premised.

These assumptions are that as individuals mature:

1) Their self-concept moves from one of being a dependent personality toward being a self-directed human being.

2) They accumulate a growing reservoir of experience that becomes an increasingly rich resource for learning.

3) Their readiness to learn becomes oriented increasingly to the developmental tasks of their social roles.

4) Their time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly, their orientation toward learning shifts from one of subject-centeredness to one of performance-centeredness .

2) They accumulate a growing reservoir of experience that becomes an increasingly rich resource for learning.

3) Their readiness to learn becomes oriented increasingly to the developmental tasks of their social roles.

4) Their time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly, their orientation toward learning shifts from one of subject-centeredness to one of performance-centeredness .

Examples of some objections:

•Houle (1972) preferred to view education as a single fundamental human process and the learning activities of men and women were essentially the same as those of boys and girls.

•He was joined by London (1973) and Elias (1979) who preferred to stress the oneness or unity in education

•In 1980, Knowles objected by stating that there were occasions when andragogy might be used with children and pedagogy with adults.

## Characteristics of Learners

| ADULT LEARNERS | YOUTH LEARNERS |
|---|---|
| Problem-centered | Subject-oriented |
| Results-oriented | Future-oriented |
| Self-directed | Often depend on adults for direction |
| Often skeptical about new information | More accepting |
| Seek relevancy | Often train for unclear future |
| Accepts responsibility for own learning | Often dependent on others |

## Principles of Adult Learning

Jane Vella (2002) sets out 12 principles for adult learning:

1. Needs assessment - participation of the learners in naming what is to be learned.

2. Safety in the environment and the process. create a context for learning. That context can be made safe.

3. Sound relationships between teacher and learner and among learners.

4. Sequence of content and reinforcement.

5. Praxis - action with reflection or learning by doing.

6. Respect for learners as decision makers.

7. Ideas, feelings, and actions - cognitive, affective, and psychomotor aspects of learning.

8. Immediacy of the learning.

9. Clear roles and role development.

10. Teamwork and use of small groups.

11. Engagement of the learners in what they are learning.

12. Accountability - how do they know ?

## Differences Andragogy Vs pedagogy

| Topic | Traditional Pedagogy | Andragogy |
|---|---|---|
| Perception of Nature of Work | Necessary evil | Vehicle for self-expression |
| Organization Design | Bureaucracy | Reduced hierarchy, team based high performance |
| Organization Goals | Stable, slow-changing, highly structured performance | Dynamic, fast-changing, continuous improvement |

| Topic | Traditional Pedagogy | Andragogy |
|---|---|---|
| Organization Climate | Authority-oriented Formal/closed Competitive | Respect-oriented Informal/open Collaborative |
| Diagnosis of Needs | Supervisor | Mutual/self-diagnosis |
| Purpose of Intervention | Orientation, Standardization, Instruction (acquisition of existing knowledge) | Change, Development, Creation of new knowledge |
| Employee Competence | Below minimum acceptable performance | Above minimum acceptable performance |

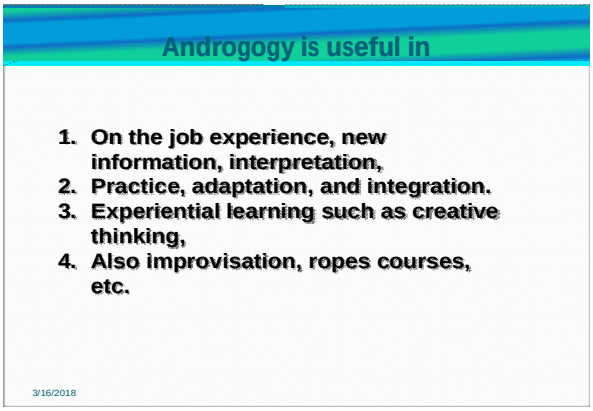
| Topic | Traditional Pedagogy | Andragogy |
|---|---|---|
| Learners/employees | Dependent | Independent |
| Subject matter | One right way | Many ways |
| Motivation to learn, change, or improve | External, dictated by others | Internal, response to personal/career needs |

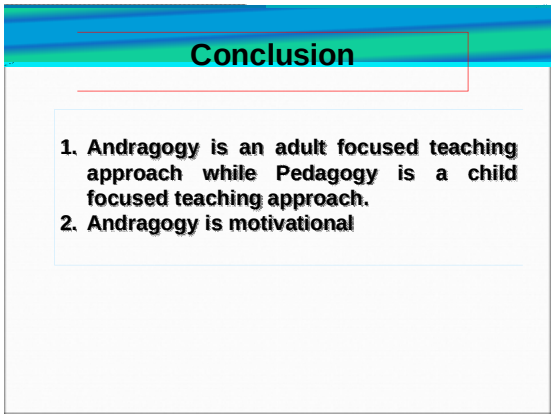
| Topic | Traditional Pedagogy | Andragogy |
|---|---|---|
| Role of experience | Unimportant or even discounted | A rich resource that can be the basis for learning, change or improvement<br><br>Must be integrated |
| Learner/employee self concept | Need outside direction | Capable of self-direction |
| Learning orientation | Subject-centered Logic-oriented | Life/career-centered Process centered |
| Objective | Minimum requirements | Self-betterment |

## Differences in Learning Design

| Topic | Traditional Pedagogy | Andragogy |
|---|---|---|
| Identification of Need | Mandate from above | Choice of learning motivated by life enhancement or performance improvement expectation |
| Instructional Design | Transmission of prescribed subject matter through lectures, Socratic dialogue, and memorization | Subject matter is life centered, task-centered, problem centered and learning is facilitated, self-reflective & transformative |

| Topic | Traditional Pedagogy | Andragogy |
|---|---|---|
| Learning Process | Passive learning<br><br>Instruction, memorization, modeling, demonstration, coaching, etc. | Active Learning<br><br>Critical and reflective thinking, shared visioning.<br><br>Simulations through team learning, case studies, role playing, etc. |




The **Student Interactive Session** was undertaken by Dr Saju Devi and Ms Arvinder Pabla of the Department of Foreign Language.

## Student Interactive Session (SIS)

Student Interactive Session (SIS) is designed around a simple fact that without practical application, students' comprehension is always shallow. It has been noted that Interactive teaching is beneficial for overall development of the students. Interactive teaching can be under taken by a way of regular teacher-student interaction, student-student interaction or by usage of audio visuals. The students should be constantly encouraged to be come active participants. This facilitates an environment that posters long term memory retention

* **Good to know :**Studies have shown that ….

| Methodology of teaching | Percentage of recall after 24 hours |
|---|---|
| One-sided lecturing | 5% |

| | | | |
|---|---|---|---|
| | Reading | 10% | |
| | Audio-visual | 20% | |
| | Demonstration | 30% | |
| | Discussions | 50% | |
| | Doing practice | 75% | |
| | From teaching others/ immediate application of knowledge | 90% | |

**SIS is used to :**

i. Check and increase comprehension
ii. Logical expansion of the concept shared
iii. Ability to reflect
iv. Introduce flexibility in teaching
v. Enhance practical applications
vi. Increase student motivation

**Methodology**

i. Brain storming
ii. Think-pair-share
iii. Think Break
iv. Question-answer
v. Picture prompt
vi. Listen-Stop-Reflect-Write-Feedback
vii. Experience and knowledge sharing

SIS Exercise:

For SIS, 3 pictures were shown to participants and each pair was asked to formulate a story taking into account all the 3 pictures. Each pair told their innovative story and then were asked to do the exercise of filling up the blanks of the story in the correct tense. All the participants were explained that it is important to engage the students for their participation in learning. This can be done by allowing them to think and put in their views and knowledge and in the same process new things can be told and session can be held without any monotonous lecturing. Here, all the participants were made to learn tense through brainstorming, think pair share, picture prompt, experience and knowledge sharing.

**Demonstration**

The Demonstration exercise was carried in the Faculty of Hotel and Tourism management by Mr Harsh Upreti and Ms. Ambika Nair for Dinning etiquettes and behavior modification in restaurants.

(Mr. Ambika Explaining the Dining etiquettes)

After the session all the participants had lunch in the Restaurant of the faculty of Hotel and Truism Management, while it was also a session to assess the take home messages and the faculty behavior change. All faculties including the members of IQAC had something to learn from the session.

**Problem Based Learning (PBL):**

After the lunch Prof Sham Singla, the Pro-chancellor of the university took the session on Problem based learning giving certain examples of problems pertaining to various faculties.

(Prof. Sham Singla delivering talk on PBL)

The following reading material was provided to the participants after the lecture was over.

## Problem-based learning

**Problem-based learning** (**PBL**) is a student-centered pedagogy in which students learn about a subject through the experience of solving an open-ended problem found in trigger material. The PBL process does not focus on problem solving with a defined solution, but it allows for the development of other desirable skills and attributes. This includes knowledge acquisition, enhanced group collaboration and communication. The PBL process was developed for medical education and has since been broadened in applications for other programs of learning. The process allows for learners to develop skills used for their future practice. It enhances critical appraisal, literature retrieval and encourages ongoing learning within a team environment.

The PBL tutorial process involves working in small groups of learners. Each student takes on a role within the group that may be formal or informal and the role often alternates. It is focused on the student's reflection and reasoning to construct their own learning. The Maastricht seven-jump process involves clarifying terms, defining problem(s), brainstorming, structuring and hypothesis, learning objectives, independent study and synthesis. In short, it is identifying what they already know, what they need to know, and how and where to access new information that

may lead to the resolution of the problem. The role of the tutor is to facilitate learning by supporting, guiding, and monitoring the learning process. The tutor aims to build students' confidence when addressing problems, while also expanding their understanding. This process is based on constructivism. PBL represents a paradigm shift from traditional teaching and learning philosophy, which is more often lecture-based. The constructs for teaching PBL are very different from traditional classroom or lecture teaching and often requires more preparation time and resources to support small group learning.

Meaning: Wood (2003) defines problem-based learning as a process that uses identified issues within a scenario to increase knowledge and understanding. The principles of this process are listed below:

1. Learner-driven self-identified goals and outcomes
2. Students do independent, self-directed study before returning to larger group
3. Learning is done in small groups of 8–10 people, with a tutor to facilitate discussion
4. Trigger materials such as paper-based clinical scenarios, lab data, photographs, articles or videos or patients (real or simulated) can be used
5. The Maastricht 7 jump process helps to guide the PBL tutorial process
6. Based on principles of adult learning theory
7. All members of the group have a role to play
8. Allows for knowledge acquisition through combined work and intellect
9. Enhances teamwork and communication, problem-solving and encourages independent responsibility for shared learning - all essential skills for future practice
10. Anyone can do it as long it is right depending on the given causes and scenario
11. We can be champions and holder of a vocational degrees
12. It depends upon the cases and the scenario the building of curriculum lesson

History: The PBL process was pioneered by Barrows and Tamblyn at the medical school program at Mc Master University in Hamilton in the 1960s. Traditional medical education disenchanted students, who perceived the vast amount of material presented in the first three years of medical school as having little relevance to the practice of medicine and clinically based medicine. The PBL curriculum was developed in order to stimulate learning by allowing students to see the relevance and application to future roles. It maintains a higher level of motivation towards learning, and shows the importance of responsible, professional attitudes with teamwork values. The motivation for learning drives interest because it allows for selection of problems that have real-world application.

Problem-based learning has subsequently been adopted by other medical school programs adapted for undergraduate instruction, as well as K-12. The use of PBL has expanded from its initial introduction into medical school programs to include education in the areas of other healthsciences, mathematics, law, education, economics, business, social-studies as well as engineering . PBL includes problems that can be solved in many different ways depending on the initial identification of the problem and may have more than one solution.

**Advantages**

There are advantages of PBL. It is student-focused, which allows for active learning and better understanding and retention of knowledge. It also helps to develop life skills that are applicable to many domains. It can be used to enhance content knowledge while simultaneously fostering the development of communication, problem-solving, critical thinking, collaboration, and self-directed learning skills. PBL may position students to optimally function using real-world experiences. By harnessing collective group intellect, differing perspectives may offer different perceptions and solutions to a problem. Following are the advantages and limitations of problem-based learning.

**Fosters student-centered learning**

In problem-based learning the students are actively involved and they like this method. It fosters active learning, and also retention and development of lifelong learning skills. It encourages self-directed learning by confronting students with problems and stimulates the development of deep learning.

**Upholds lifelong learning**]

Problem-based learning gives emphasis to lifelong learning by developing in students the potential to determine their own goals, locate appropriate resources for learning and assume responsibility for what they need to know. (*Candy PC. Self-direction for lifelong learning: a comprehensive guide to theory and practice. San Francisco: Jossey-Bass, 1991*.). It also greatly helps them better long term knowledge retention.

**Prominence on comprehension not facts**

Problem-based learning focuses on engaging students in finding solutions to real life situations and pertinent contextualized problems. In this method discussion forums collaborative research take the place of lecturing.

**In-depth learning and constructivist approach**

PBL fosters deep learning by involving students with the interaction of learning materials. They relate the concept they study with everyday activities and enhance their knowledge and

understanding. Students also activate their prior knowledge and build on existing conceptual knowledge frameworks.

**Augments self-learning**

Students themselves resolve the problems that are given to them, they take more interest and responsibility for their learning. They themselves will look for resources like research articles, journals, web materials etc. for their purpose. Thus it equips them with more proficiency in seeking resources in comparison to the students of traditional learning methods.

**Better understanding and adeptness**

By giving more significance to the meaning, applicability and relevance to the learning materials it leads to better understanding of the subjects learnt. When students are given more challenging and significant problems are given it makes them more proficient. The real life contexts and problems make their learning more profound, lasting and also enhance the transferability of skills and knowledge from the classroom to work. Since there is more scope for application of knowledge and skills the transferability is increased. It will be also very helpful to them not only to visualize what it will be like applying that knowledge and expertise on their field of work or profession.

**Reinforces interpersonal skills and teamwork:** Project based learning is more of teamwork and collaborative learning. The teams or groups resolve relevant problems in collaboration and hence it fosters student interaction, teamwork and reinforces interpersonal skills. like peer evaluation, working with group dynamic etc. It also fosters in them the leadership qualities, learn to make decision by consensus and give constructive feed back to the team members etc.

**Self-motivated attitude :** Researchers say that students like problem-based learning classes rather than the traditional classes. The increase in the percentage of attendance of students and their attitude towards this approach itself makes it very clear that they are self-motivated. In fact it is more fascinating, stimulating and one of the good learning methods because it is more flexible and interesting to students. They enjoy this environment of learning for it is less threatening and they can learn independently. All these aspects make students more self-motivated and they pursue learning even after they leave the school or college.

**Enriches the teacher-student relationship:** Since the students are self-motivated, good teamwork, self-directed learning etc. the teachers who have worked in both traditional and project based learning formats prefer project based learning. They also feel that problem-based learning is more nurturing, significant curriculum and beneficial to the cognitive growth of the student.

**Higher level of learning:** The PBL students score higher than the students in traditional courses because of their learning competencies, problem solving, self-assessment techniques, data gathering, behavioral science etc. It is because they are better at activating prior knowledge, and they learn in a context resembling their future context and elaborate more on the information presented which helps in better understanding and retention of knowledge. In medical education, PBL cases can incorporate dialogue between patients and physicians, demonstrate the narrative character of the medical encounter, and examine the political economic contributors to disease production. PBL can serve as a platform for a discursive practices approach to culture that emphasizes the emergent, participant-constructed qualities of social phenomena while also acknowledging large-scale social forces.

Disadvantages

According to Wood (2003), the major disadvantage to this process involves the utilization of resources and tutor facilitation. It requires more staff to take an active role in facilitation and group-led discussion and some educators find PBL facilitation difficult and frustrating. It is resource-intensive because it requires more physical space and more accessible computer resources to accommodate simultaneous smaller group-learning. Students also report uncertainty with information overload and are unable to determine how much study is required and the relevance of information available. Students may not have access to teachers who serve as the inspirational role models that traditional curriculum offers.

**Time-consuming** : Although students generally like and gain greater ability to solve real-life problems in problem-based learning courses, instructors of the methodology must often invest more time to assess student learning and prepare course materials, as compared to LBL instructors

**Traditional assumptions of the students:** The problem of the problem-based learning is the traditional assumptions of the students. Most of the students might have spent their previous years of education assuming their teacher as the main disseminator of knowledge. Because of this understanding towards the subject matter students may lack the ability to simply wonder about something in the initial years of problem-based learning

**Role of the instructor**

The instructors have to change their traditional teaching methodologies in order to incorporate problem-based learning. Their task is to question students' knowledge, beliefs, give only hints to correct their mistakes and guide the students in their research. All these features of problem-based learning may be foreign to some instructors; hence they find it difficult to alter their past habits.

**Pupil's evaluation**

The instructors have to adapt new assessment methods to evaluate the pupils' achievement. They have to incorporate written examinations with modified essay questions, practical examinations, peer and self assessments etc.

**Cognitive load**

Sweller and others published a series of studies over the past twenty years that is relevant to problem-based learning, concerning cognitive load and what they describe as the guidance-fading effect. Sweller et al. conducted several classroom-based studies with students studying algebra problems. These studies have shown that active problem solving early in the learning process is a less effective instructional strategy than studying worked examples (Sweller and Cooper, 1985; Cooper and Sweller, 1987). Certainly active problem solving is useful as learners become more competent, and better able to deal with their working memory limitations. But early in the learning process, learners may find it difficult to process a large amount of information in a short time. Thus the rigors of active problem solving may become an issue for novices. Once learners gain expertise the scaffolding inherent in problem-based learning helps learners avoid these issues. These studies were conducted largely based on individual problem solving of well-defined problems.

Sweller (1988) proposed cognitive load theory to explain how novices react to problem solving during the early stages of learning. Sweller, et al. suggests a worked example early, and then a gradual introduction of problems to be solved. They propose other forms of learning early in the learning process (worked example, goal free problems, etc.); to later be replaced by completions problems, with the eventual goal of solving problems on their own. This problem-based learning becomes very useful later in the learning process.

Many forms of scaffolding have been implemented in problem-based learning to reduce the cognitive load of learners. These are most useful to enable decreasing ("fading") the amount of guidance during problem solving. A gradual fading of guidance helps learners to slowly transit from studying examples to solving problems. In this case backwards fading was found to be quite effective and assisting in decreasing the cognitive load on learners

Evaluation of the effects of PBL learning in comparison to traditional instructional learning have proved to be a challenge. Various factors can influence the implementation of PBL: extent of PBL incorporation into curriculum, group dynamics, nature of problems used, facilitator influence on group, and the motivation of the learners. There are also various outcomes of PBL that can be measured including knowledge acquisition and clinical competence. Additional studies are

needed to investigate all the variables and technological scaffolds that may impact the efficacy of PBL.

**Demands of implementing**

Implementing PBL in schools and Universities is a demanding process that requires resources, a lot of planning and organization Azer discusses the 12 steps for implementing the "pure PBL"

1. Prepare faculty for change
2. Establish a new curriculum committee and working group
3. Designing the new PBL curriculum and defining educational outcomes
4. Seeking Advice from Experts in PBL
5. Planning, Organizing and Managing.
6. Training PBL facilitators and defining the objectives of a facilitator
7. Introducing Students to the PBL Program
8. Using 3-learning to support the delivery of the PBL program
9. Changing the assessment to suit the PBL curriculum
10. Encouraging feedback from students and teaching staff
11. Managing learning resources and facilities that support self-directed learning
12. Continuing evaluation and making changes

Constructivism

Problem-based learning addresses the need to promote lifelong learning through the process of inquiry and constructivist learning. PBL is considered a constructivist approach to instruction because it emphasizes collaborative and self-directed learning while being supported by tutor facilitation. Yew and Schmidt, Schmidt, and Hung elaborate on the cognitive constructivist process of PBL:

1. Learners are presented with a problem and through discussion within their group, activate their prior knowledge.
2. Within their group, they develop possible theories or hypotheses to explain the problem. Together they identify learning issues to be researched. They construct a shared primary model to explain the problem at hand. Facilitators provide scaffolding, which is a framework on which students can construct knowledge relating to the problem.
3. After the initial teamwork, students work independently in self-directed study to research the identified issues.
4. The students re-group to discuss their findings and refine their initial explanations based on what they learned.

PBL follows a constructivist perspective in learning as the role of the instructor is to guide and challenge the learning process rather than strictly providing knowledge. From this perspective, feedback and reflection on the learning process and group dynamics are essential components of PBL. Students are considered to be active agents who engage in social knowledge

construction. PBL assists in processes of creating meaning and building personal interpretations of the world based on experiences and interactions. PBL assists to guide the student from theory to practice during their journey through solving the problem.

**$P^5$BL approach**

$P^5$BL stands for **People, Problem, Process, Product and Project B**ased **L**earning.

The **$P^5$BL approach** was a learning strategy introduced in Stanford School of Engineering in their $P^5$BL laboratory in 1993 as an initiative to offer their graduate students from the engineering, architecture and construction disciplines to implement their skills in a "cross-disciplinary, collaborative and geographically distributed teamwork experience". In this approach, which was pioneered by Stanford Professor Fruchter, an environment across six universities from Europe, the United States and Japan along with a toolkit to capture and share project knowledge was developed. The students (people) from the three disciplines were assigned a team project that works on solving a problem and delivering an end-product to a client.

The main stress of this approach is to have an inter-disciplinary integrated development of deliverables, in order to improve the overall competency and skills of the students. $P^5$BL mentoring is a structured activity that involves situated learning and constructivist learning strategies to foster the culture of practice that would extend beyond the university campus to real life. $P^5$BL is all about encouraging teaching and learning teamwork in the information age, by facilitating team interaction with professors, industry mentors and owners who provide necessary guidance and support for the learning activity.

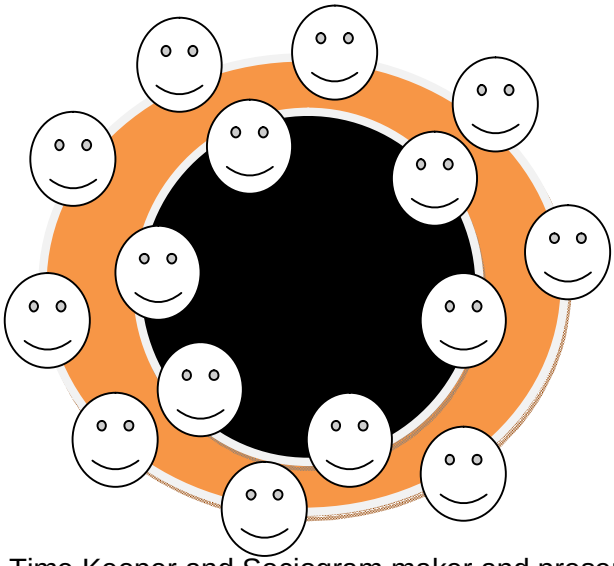
Key advantages of this method are that it familiarizes students with real world problems and improves their confidence in solving these. It also improves their networking skills, thereby establishing rapport with key persons of the industry. They also learn the value of teamwork. The method also creates in them an appreciation of interdisciplinary approach.

The approach however needs due consideration of the mentoring provided to the students. Appropriate scaffolding should be done by the mentors to ensure that students are successful in attaining their project goals to solve the problem. Communication between the team should also be open and constructive in nature for achieving the necessary milestones.

## Fish-Bowl Technique

The last training task, for the day, was undertaken by Prof. S C Mohapatra,Dean Academic Affairs, SGT University. The whole group was divided in two sub-groups as shown below and

made to sit in two uni-centric circles. The fish bowl word (Supportive Supervision) was then provided to them to buzz around.



Each group chose their Leader, Time Keeper and Sociogram maker and presented their content of discussion at the end.

The fish-bowl is a powerful group involvement method. The fish-bowl consists of an inner ring which is the discussion group, surrounded by an outer ring which is the observation group.The inner group is given a task to discuss possible solutions to a problem and tries to arrive at the best feasible options within a limited time. While the inner group is discussing the outer group observes silently. Before the discussion starts, the outer group reviews the guided observation checklist and divides the sections among themselves. After the inner circle's time is up, the process is reversed. The inner group comes out and the outer groups go in carrying out the similar activity. In this way, each group is involved in discussion and observation. Fish bowls are not effective if the groups are large. This is because, if there are more people, all of them will not have item and/or opportunity to express their opinions and views satisfactorily. You should therefore limit the group size to about ten to twenty people.

Use of Fish-bowl

The fishbowl has many uses. Some important uses relevant to your work are as explained below.

l) As a problem solving tool: when one group listens and reviews discussion of the other group, they are able to view the problem form more than one angle. There is thus more interaction and stimulating and relevant discussion.

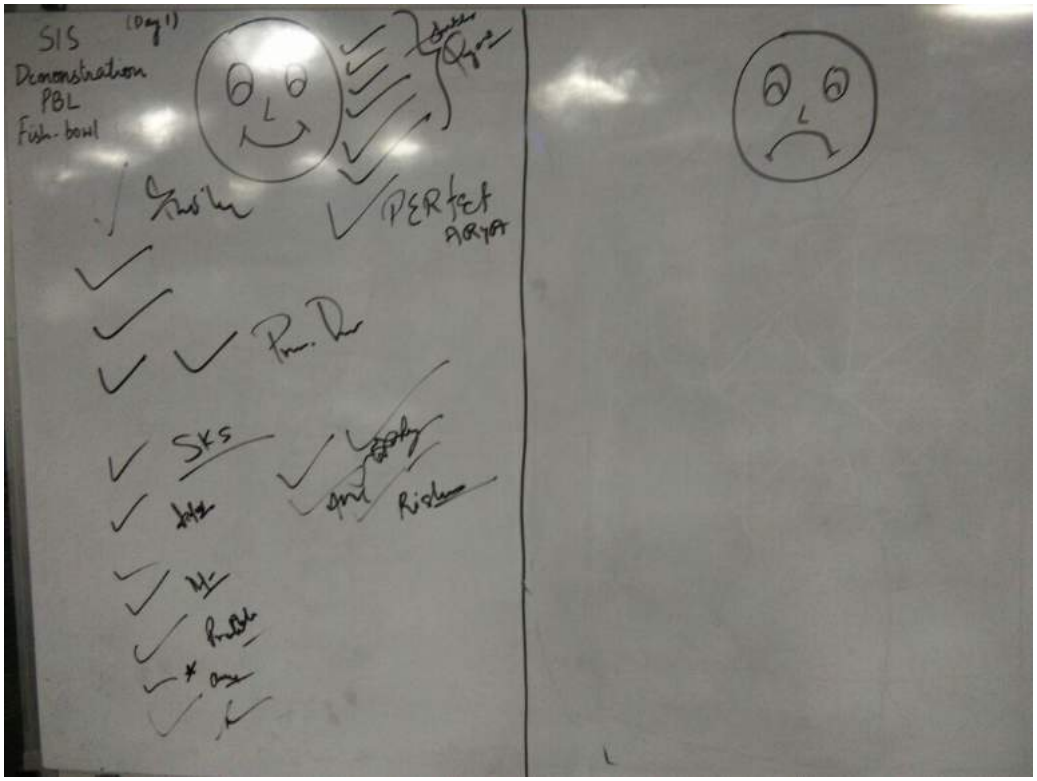
2) For team building: This methods is very effective in getting people to open up, to generate different views, and allow these views to be analyzed by the group.

3) For improving inter-group communication and relations: You can resolve conflicts by bringing together different groups with different and strong opinions.

The first day concluded with the feedback from the participants to be written on white paper.

**Day 2: 22nd March 2018**

The day 2 of the program started with the feedback of the participants alongside the smileys whether happy or sad about their experience on Day 1.




(All the participants gave the positive feedback of the previous day as all the marks are alongside the happy faces. Some of the participants were so happy and so much enjoyed the day 1 program that they gave multiple ticks with their signatures.)

**Panel Discussion**

The first session of the day was taken by Dr Jasdeep Monga on Panel Discussion. The differences between panel discussion, group discussion, symposia were discussed. Dr Monga made a panel of final year MBBS Students who were given a simple clinical case to discuss and reach to the proper diagnosis and treatment plan. The panel comprising of 5 students actively discussed the various possibilities and gave their justifications for the probable diagnosis.

On asking about the practical utility in the classrooms Dr Monga explained that panel/experts could be the students of the same class who have been made to read before hand, or senior students or postgraduate students who already know the topic. It can also be made of teachers/experts of same field or multiple field depending on the topic of discussion.

(Dr Jasdeep Monga, with the panel of students and explaining about Panel Discussion)

**Role Play and simulation**

The next session was conducted by Ms Mamata Devi and Ms Manisha demonstrating role play and simulation respectively from Faculty of Nursing.

For Role play students from Faculty of Nursing demonstrated on “Substance Use”- Its clinical implications and social effects moderated by Ms Mamata Devi.

(Students demonstrating role play on Substance Abuse)

For Simulation, Cardiopulmonary resuscitation(CPR) was demonstrated by students of Faculty of Nursing on Mannequins.

(CPR demonstration on mannequin)

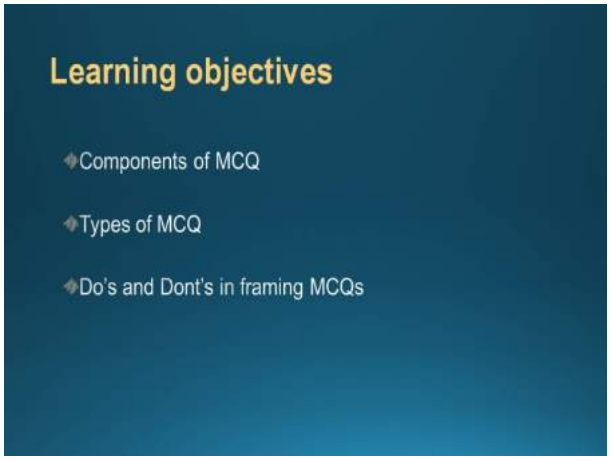
(Demonstration of Checking Carotid pulse)

The other components in simulation and its application in various faculties, simulation software was explained by Ms Manisha.

**Objective type questions**

The next session was taken on Objective type questions- its significance, types and description about each type by Dr Astha Chaudhry. The session was very interactive wherein participants were asked to point out the flaws in each of the prepared MCQ. All the objective type questions were discussed considering the special points in their framing.

The participants requested to share the material and it was as follows:

## Introduction

- Objective type questions are most commonly used for formative assessment and selection processes.
- Efficient and contribute to a comprehensive student assessment strategy.
- A large number of candidates can be assessed over a broad coverage of concepts in a short span of time.
- Scoring is objective, reliable and quick using computers.
- Useful in measuring factual recall and can also test higher order of thinking skills such as application, analysis, synthesis and evaluation of knowledge.

## Types

- There are different types as classified by Hubbard and Clemans (1971).

- **Single or best response type (Type A)**
- **Multiple response type (Type K)**
- **Relationship analysis type (Type E)**
- **Matching questions**
- **Ranking/sequencing questions**
- **True/False**
- **Text/Numerical questions**

## General guidelines

- Learning outcome/content should be clear
- Cognitive level to be assessed
- Number of items
- Time allotment
- Marking scheme
- Validation

## Components of Item/MCQ


## Framing of questions

Content:

- Base each item on important content area / learning outcome.
- Ensure each item is wholly independent of the others
- Frame items that are specific.
- Choose items of appropriate level of difficulty

- Avoid opinion-based items.
- Avoid trick items.

Writing the stem

- Complete question/incomplete statement
- Ensure that the directions in the stem are very clear.
- Keep it clear, concise and unambiguous.
- Keep vocabulary simple

- Avoid negatives such as NOT or EXCEPT
- If used ensure that the word appears capitalized and boldface.
- Avoid double negatives.
- Avoid vague expressions like fairly high, considerably greater, etc.
- Avoid clues suggestive of the right answer

## Writing the distractors

- Keep choices independent/ mutually exclusive
- Make sure that only one of these choices is the right answer.
- Keep choices homogeneous in content (distractors are in the same category as the correct answer).
- Vary the location of the right answer according to the number of choices.
- Arrange choices in logical or numerical order
- Keep the length of choices about equal.
- Avoid repetition of content in the distractors
- All of above & None of above should be avoided

Indian gooseberry

A) Is a rich source of Vitamin C
B) Can be used to treat weakness
C) Reduces unwanted fats in body
D) Is required for healthy gums

Frame items that are specific.
Ensure that the directions in the stem are very clear.
Keep it clear, concise and unambiguous.

- Vitamin C which is an antioxidant and increases immunity is found in high concentration in

- A) Lemon
- B) Orange
- C) Gooseberry
- D) Grape

- The life span of a RBC is
- A) 100 days
- B) 10 days
- C) 4 months
- D) 3 months

- Entomology is the
- A) Study of plants
- B) Study of animals
- C) Study of insects
- D) Study of humans

- Entomology is the study of
- A) Plants
- B) Animals
- C) Insects
- D) Humans

## Single response type

- Most common format.
- It tests mainly recall of facts.
- Higher order questions include analysis, interpretation or problem solving
- Finding plausible alternatives becomes difficulty.
- Reduction of five alternatives to four reduces the efficacy of the item (Correct response by chance increases from 20% to 25%).
- Unintended grammatical clues and excessive length of the correct response play important role in this type of MCQ.

Albert Eisenstein was a:

A. Anthropologist.

B. Astronomer.

C. Chemist.

D. Mathematician

1. Who was Albert Einstein?

A. An anthropologist.
B. An Astronomer.
C. A chemist
D. A mathematician

Gingival bleeding is seen in Vitamin C Deficiency because

A) Gingiva is inflamed

B) Vitamin C deficiency reduces collagen synthesis making blood vessels friable

C) Reduced clotting factors

D) Reduced immunity

## Multiple response MCQs

The rich sources of Natural Vitamin C are:

i) Lemon ii) Gooseberry iii)Potato iv) onion v) Orange

A) i and v are correct

B) i, ii and v are correct

C) ii, iii and iv are correct

D) ii and v are correct

## Relationship analysis

- Assertion and reasoning
- Combines elements of multiple choice and true/false question types
- Allows to test higher order skills
- The question consists of two statements, an assertion and a reason.
- First determine whether each statement is true.
- If both are true, next determine whether the reason correctly explains the assertion
- Can be used to explore cause and effect and identify relationships
- The reason should be a free standing sentence so that it can be considered separately from the assertion

Assertion: Earth revolves around the sun

Because

Reason : The sun gravity attracts the earth and the earth's perpendicular velocity pulls it into orbits.

A. Both Assertion and Reasoning are true, reason is correct explanation

B. Both Assertion and Reasoning are true, reason is not the correct explanation

C. Assertion is true, Reason is false

D. Assertion is false, reason is true

E. Both Assertion and reason are false

Assertion: Clothes are ' properly washed in hard water

Because

Reason : **Hard water** **form lather with soap**

A. Both Assertion and Reasoning are true, reason is correct explanation

B. Both Assertion and Reasoning are true, reason is not the correct explanation

C. Assertion is true, Reason is false

D. Assertion is false, reason is true

E. Both Assertion and reason are false

## Matching questions

Matching items require students to match a series of stems or premises to a response or principle. They consist of a set of directions, a column of statements and a column of responses.

**Directions:** Column I contains the radiological equipments. For each item, match the correct name of the Scientist who developed /discovered it.

| Column I | Column II |
|---|---|
| 1.X-Ray tube | a. Numata and paatero |
| 2.OPG | b. Hounsefield |
| 3.CT Scan | c. W. C Roentgen |
| 4.X-Rays | d. W.C. Coolidge |

A) 1-d, 2-a, 3-b, 4-c
B) 1-b, 2-c, 3-a, 4-d
C) 1-c, 2-b, 3-d, 4-a
D) 1-a, 2-d, 3-c, 4-b

## Sequencing type

- Requires the candidate to position text or graphic objects in a given sequence.

- These are particularly good for testing methodology, knowledge of sequences, order of events or level of gradation.

Arrange in sequence the following stages of tooth development

1) Histodifferentiation
2) Initiation
3) Morphodifferentiation
4) Proliferation
5) Apposition

- A) 1,3,4,5,2
- B) 2,4,1,3,5
- C) 2,5,1,3,4
- D) 2,1,3,4,5

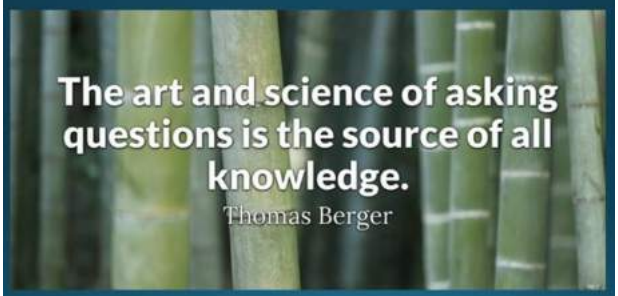
## True/False

- The richest source of Natural Vitamin C is Gooseberry
- A) True
- B) False

## Text/numerical questions

- If the single dose of paracetamol for an adult aged 25 yrs is 500mg,the single dose for a 10 yr old child will be.....mg
- A) 100
- B) 150
- C) 200
- D) 250

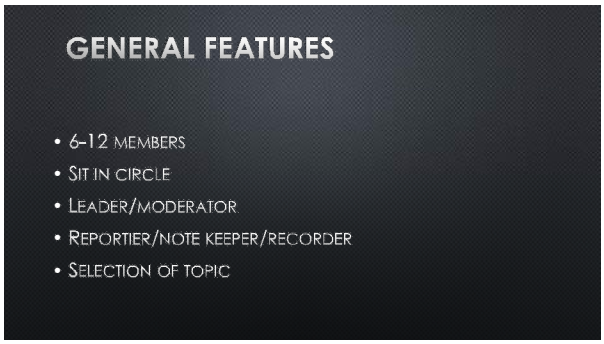
- 2) The atomic number of Tungsten is
- A) 64
- B) 74
- C) 84
- D) 94



## Group Discussion

The group discussion was initiated by Dr. Astha Chaudhry. As was proposed, a group of individuals with similar interest who gather either formally or informally to bring up ideas, solve problems or give comments for discussion can be named as “Group Discussion”.

She explained that group discussion is like a football game wherein ball is passed between each member of the team wherein each member is supposed to contribute his idea, knowledge towards a common goal. The general principles of formation of group and group discussion were discussed.







Focus group discussion is when the group is made up of participants with similar background and they discuss on a common topic. In a class focus group discussion can be carried out by giving the topic of the class to the students before hand. The class is divided into groups, each group is given a topic that they are supposed to read and come prepared. Each member of the group will contribute in the discussion and then each group leader will present their discussion points in front of the whole class for everybody’s learning. The facilitator will then summarize the topic and cover the deficiencies if any.

Spot group discussion refers to giving the topic of discussion to the students on the spot. Students are just given instructions a day before the class to get their textbooks and laptops for the class. During the class, teacher will divide the class into 4-5 groups and divide the topic to be studied into 4-5 subtopics. Each group will then discuss about their topic for 20

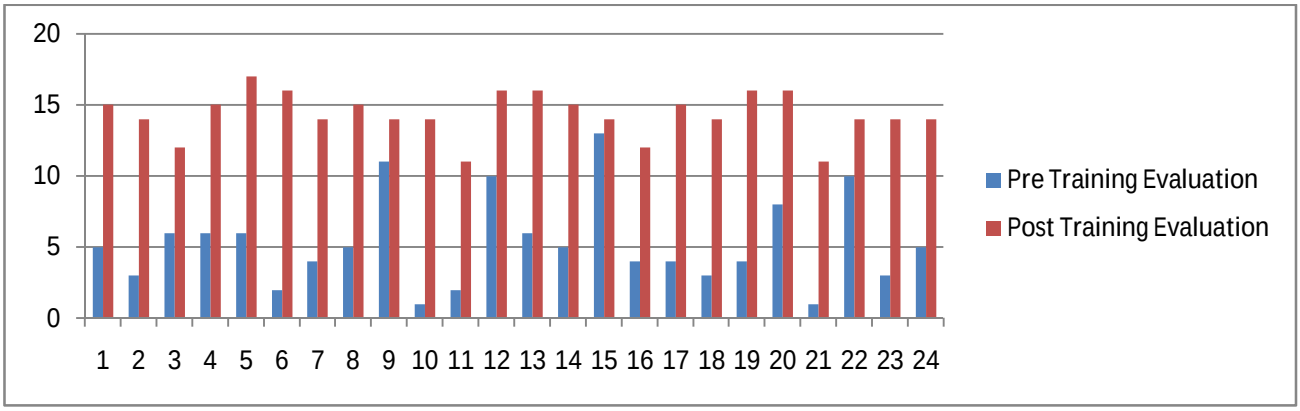
minutes reading the content from the text book and prepare a small ppt of 5 minutes each to be presented before the whole class by the team leader. The procedure was then undertaken by dividing the participants in to four Sub-Groups to discuss four components of "Effect of Smart phone and Social media". The TORs were "Profession & Work"," Personal Life", "Health" and " Social Issues like Crime & Political Issues"

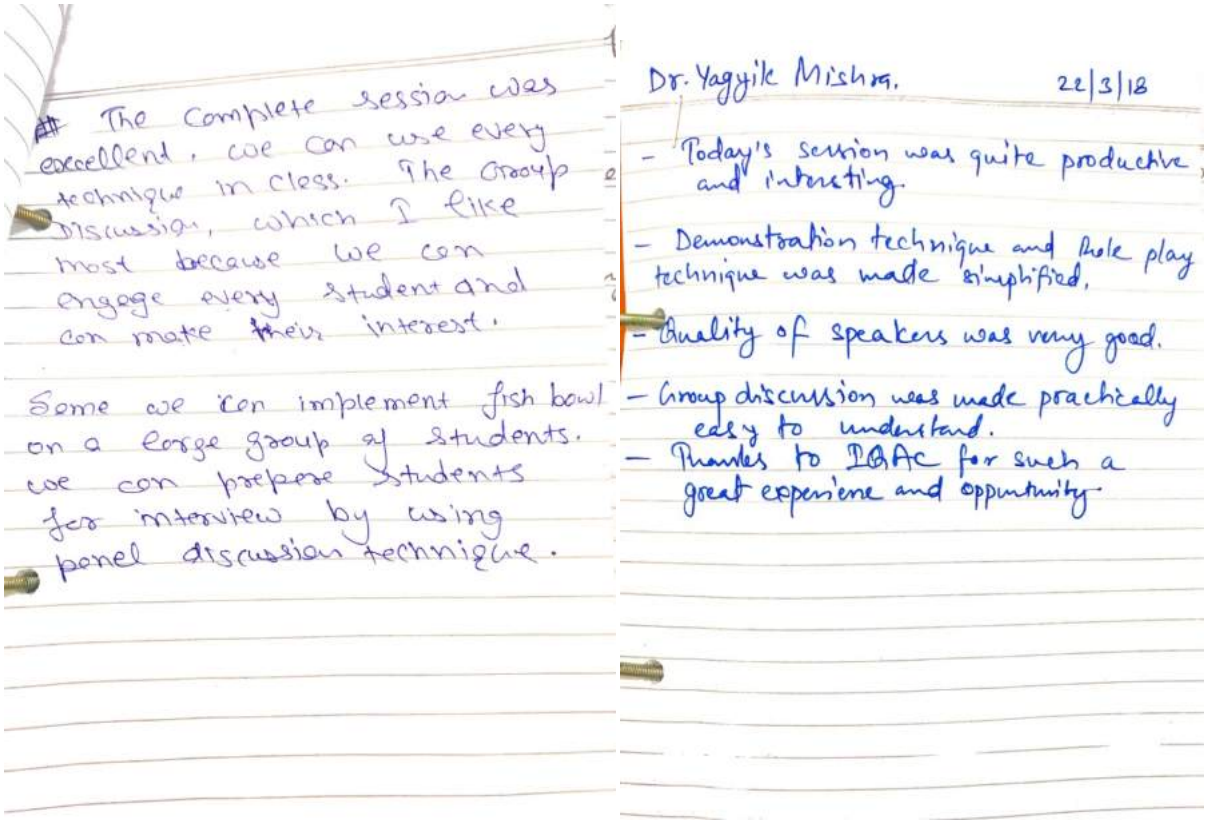

(Dr Astha Explaining about Focus group discussion and spot group discussion)


(One of the group leaders Dr Ravi Mehrotra presenting about his discussion topic).

The role of facilitator in conducting these group discussion was clearly explained to the participants.

**Pre & Post Training Assessment.** Capacity Building in Teaching Technology was held on March 21st &22nd , 2018 at SGT University under the aegis of IQAC. It was organized to train new employees in the teaching methodologies that are being adopted and encouraged in the University. The training program saw enthusiastic participation from all the departments. To make the training focussed and result oriented, a pre -training and post training evaluation was conducted. The results when compared have given very positive outcome. Each participant showed marked improvement. The responses recorded by the participants reflect clear grasp of the concepts discussed and facilitated. The evaluation was done independently and not by facilitators. The graph shows the increment in knowledge was extremely laudable. During post training all had double digit no as compared to pre-training where only 4 had double digits. All participants also were asked to give un-named frank opinion in blank white sheets.





The Complete session was excellent, we can use every technique in class. The Group Discussion, which I like most because we can engage every student and can make their interest.

Some we can implement fish bowl on a large group of students. we can prepare students for interview by using panel discussion technique.

Dr. Yagyik Mishra. 22/3/18

- Today's session was quite productive and interesting.
- Demonstration technique and Role play technique was made simplified.
- Quality of speakers was very good.
- Group discussion was made practically easy to understand.
- Thanks to IQAC for such a great experience and opportunity.

**Certificate Distribution:**

Certificates were distributed to all the Participant Faculties, by Professor T D Dogra, the Director of IQAC and Prof.S C Mohapatra.



(Certificate distribution to Ms Yashika From FET and Mr Sandeep Sahu from FCM)


**All participants and team of facilitators from IQAC**