GOVT. HOLKAR (MODEL AUTONOMOUS) SCIENCE COLLEGE, INDORE

(An ISO 9001:2015 & ISO 14001:2015 Certified Instituion)

SSR DOCUMENT

2017-18 to 2021-22

CRITERION –7

Institutional Values and Best Practices

Metric No. : 7.2.1

Document Title:

SURESH T SILAWAT

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B. Emancipation of Digital Transformation of Education: Blending Pedagogy with Technology

V.Sample examples of Pedagogical Innovation

Sample examples of Pedagogical Innovation

Content

Government Holkar (Model, Autonomous) Science College, Indore (M.P.)

Department of Statistics

PEDAGOGY WITH GROUP ACTIVITY
ASSIMILATION BASED LEARNING

Faculty :

Dr. UNNATI BHAYARE

PROF. RITA KUMAWAT

PROF. SURBHI GHODKI

Targeted Students :

B. Sc. III Sem [Minor]

CONCEPT LINE

01 Introduction

02 Method/ Approach

03 Learning Outcomes

04 Teaching Learning Process

05 Progression in Learning

Without curiosity and research, Progress would slow to a halt, and our lives as we know them would be completely different.

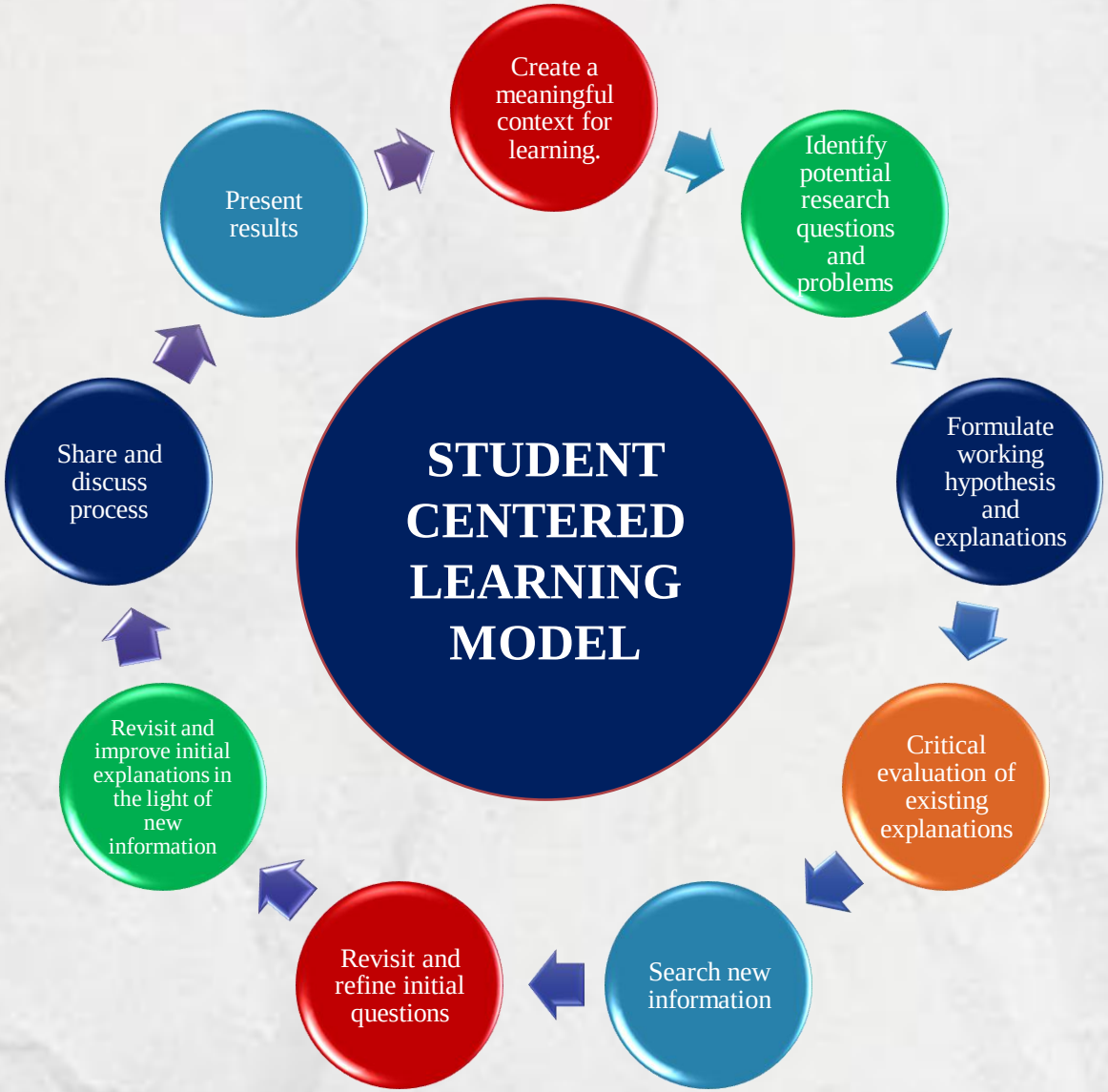
Introduction

In Continuous and Comprehensive Evaluation (CCE), Dept. of Statistics Planned an activity to be performed by B.Sc. IIIrd sem (Minor) students. In which whole of the class strength was divided into eight groups and then allotted different statistics based topics of quantitative aspects from their core syllabus to them.

Where the students gather all the relevant information of their respective topics from different platforms. After collecting the information, they summarize whole the information and made a flex on the given topic. At the last students demonstrate their assign topics through flex in groups within a given time limit. The department recognizes active participation by the students. This group activity work helps the students to restore and sharpen their memory, enhances problem-solving skills in them. The main aim of introducing this **Group Activity Assimilation based work in CCE** is to increase the teamwork quality among students and to give a equal platform to slow learners with advance learners on one stage.

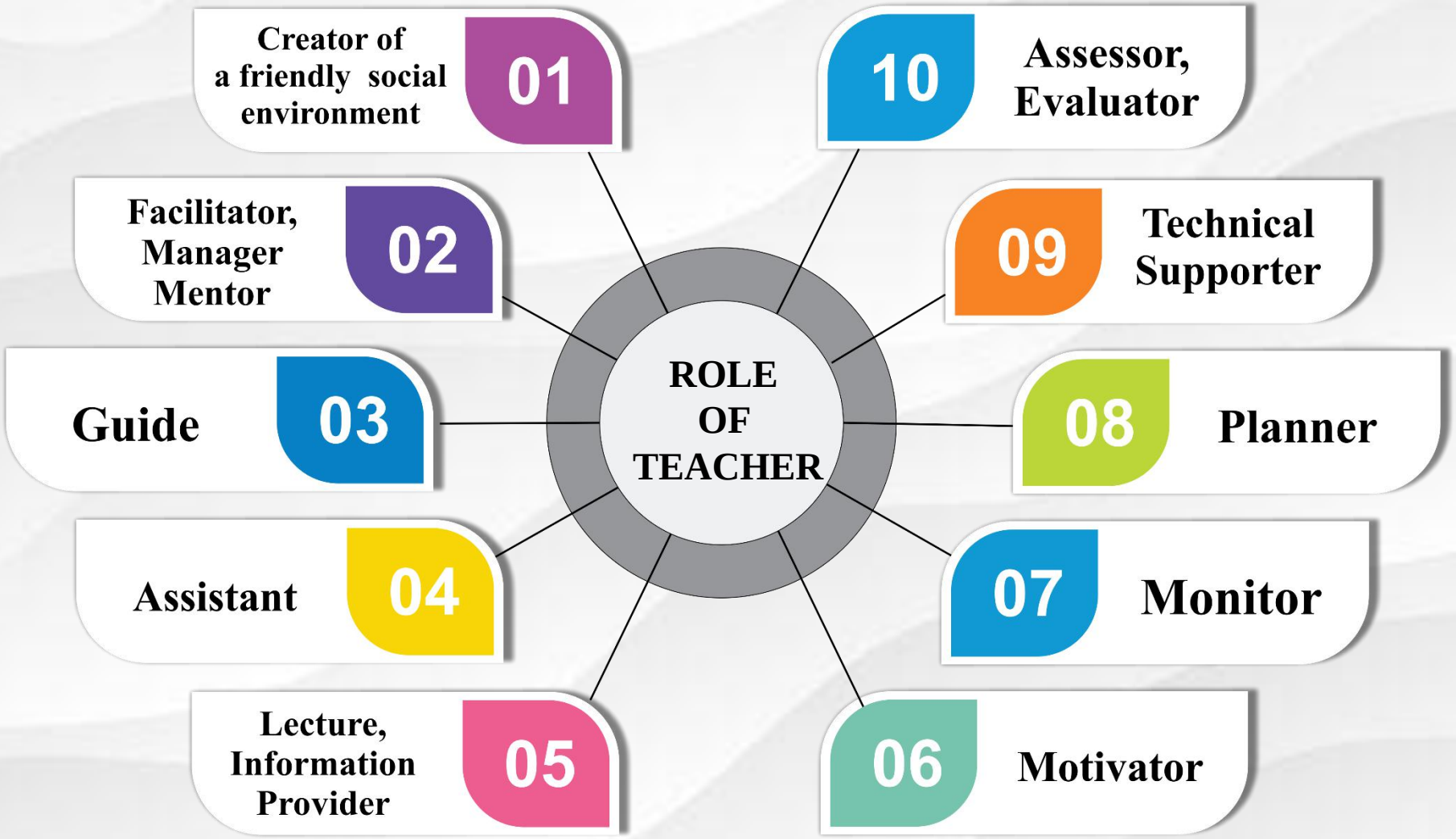
Method/ Approach

Student - Centric method - Participative learning through group discussion process.

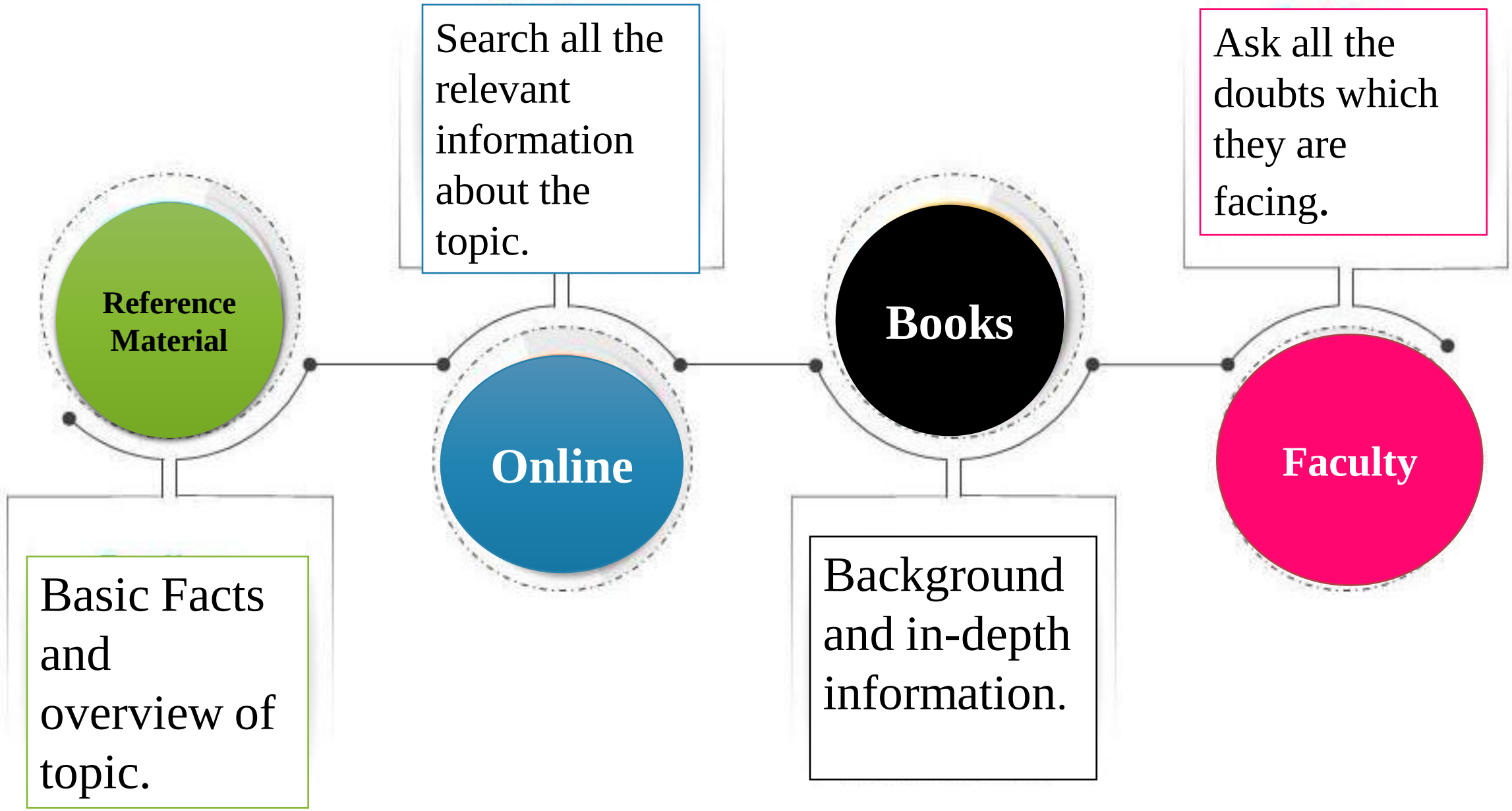


QUANTITATIVE DATA

ROLE OF TEACHER AS A FACILITATOR



Knowledge Cycle



LEARNING OUTCOMES

Remember

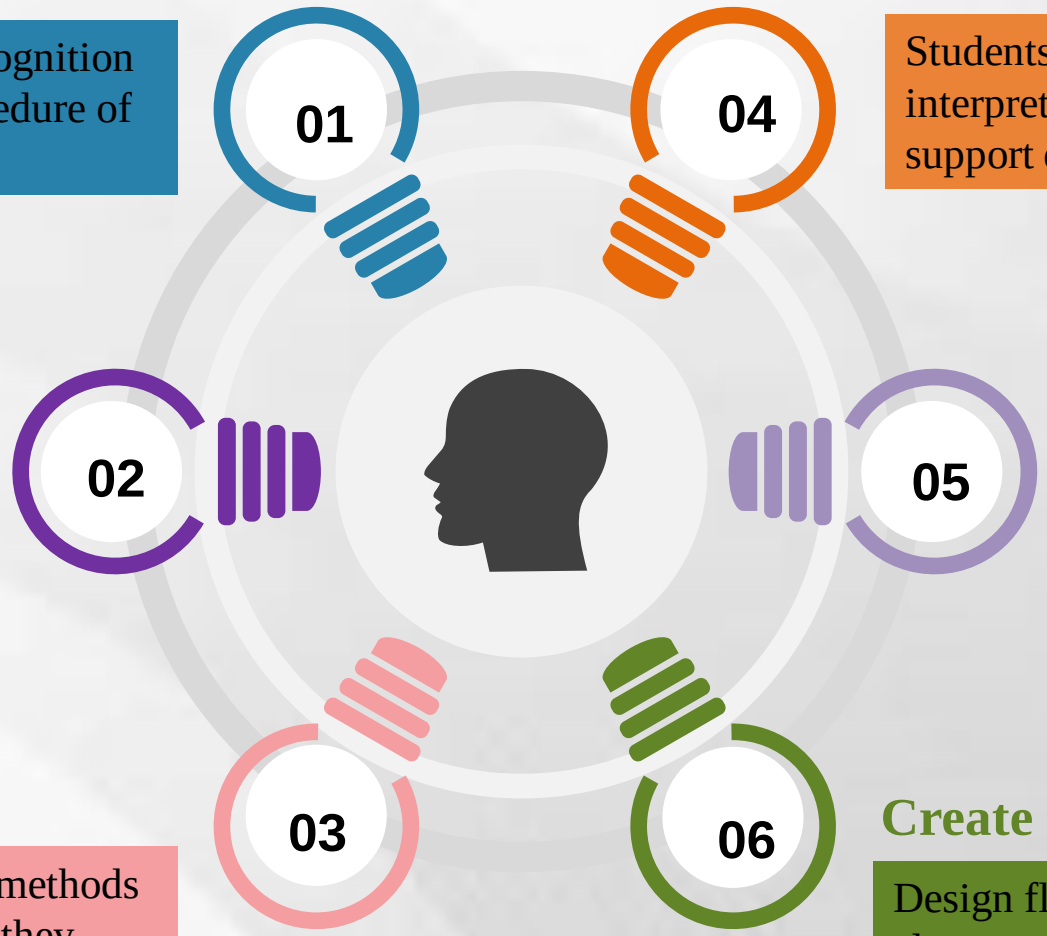
Define the topic and recognition of terms, ideas and procedure of their respective topics.

Understand

Discuss alternative approaches to calculating quantitative data.

Apply

Apply abstractions or methods to specific data which they have taken from authentic sites.



Analyze

Students will analyze and interpret statistical data as they support decision making

Evaluate

Make judgements about the ideas or methods using the specific data and determines the long term effects.

Create

Design flex and graphical elements to clarify text.

Teaching Learning Process

Work as a responsible member of a team to meet an organizations objectives

Use current and emerging technologies affectively to create flex and handle multiple priorities

To predict the impact of economic crises

Demonstrate professionalism in work quality, appearance, attitude and workplace behaviour

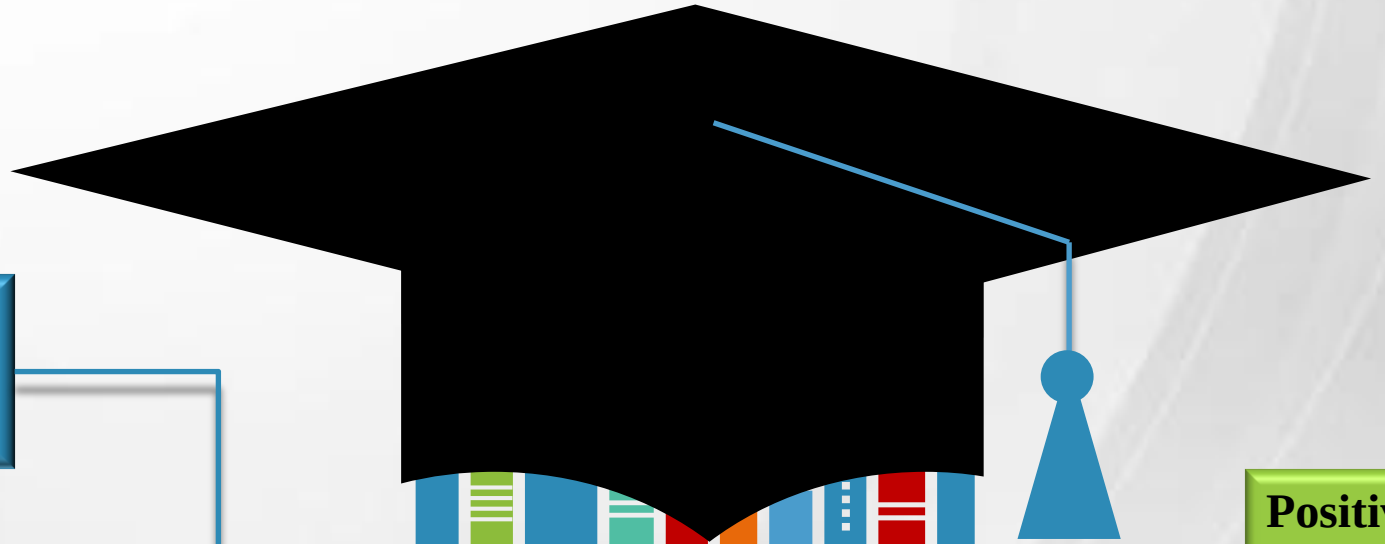
Builds critical thinking and problem solving skills in data analysis.

Communicate clearly and effectively through oral and written interactions

Impact solving their real life problems.

Group activity leads to teamwork.

STRENGTH DEVELOP



Develops communication and Collaboration

Initiates creative thinking and problem solving

Direct towards vision and mission

Cognitive skills

Time management

Positive attitude situational awareness, conflict resolution etc.

Break complex tasks into parts and steps.

Active listening (allowing time for others to speak and being open to their views).

Progression in Learning

Divide the classroom into 8 groups for making flex or collecting information for flex based on group discussion

Faculty pinpoints finer points that were left out by the students

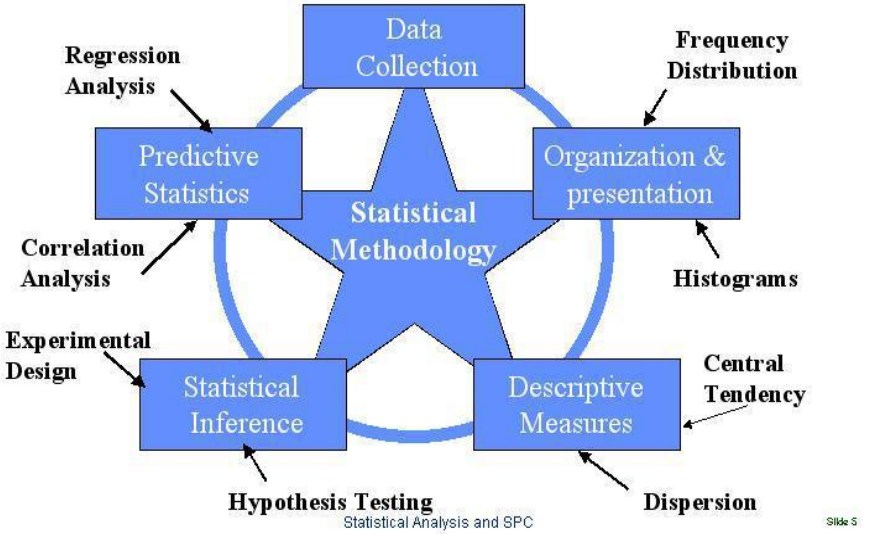
Steps

1. Situational analysis
2. Statement of objectives
3. Recommendation of measures
4. Logical Discussion
5. Faculty explains the real life solution behind the.

Flex made by Students

Statistical Methodology

Statistical methods are procedures for drawing conclusions about populations utilizing information provided by random samples.

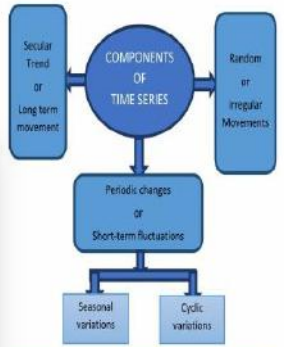


Statistical Analysis and SPC

Slide 5

COMPONENTS OF TIME SERIES

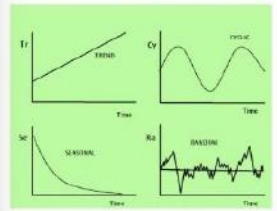
TIME SERIES : A time series may be a defined as a collection of readings belonging to different time periods , of some economic variable or composite of variables.



1) **SECULAR TREND :**
By secular trend or simply trend we mean the general tendency of the data to increase or decrease during a long period of time.

2) **PERIODIC CHANGES :**
i) Seasonal Variations : These variations in a time series are due to the rhythmic forces which operate in a regular and periodic manner over a span of less than a year, i.e., during a period of 12 months and have the same or almost same pattern year after year.
ii) Cyclic Variations : The oscillatory movements in a time series with period of oscillation more than one year are termed as cyclic fluctuations. One complete period is called a "cycle".

3) **IRREGULAR (OR RANDOM) COMPONENT :**
Apart from the regular variations , almost all the series contain another factor called the random or irregular or residual fluctuations, which are not accounted for by secular trend and seasonal and cyclic variations. These fluctuations are purely random, erratic, unforeseen ,unpredictable and are due to numerous non recurring and irregular circumstances which are beyond the control of human hand such as revolution earthquakes, wars, floods, epidemics etc.



Submitted to-
Department of Statistics

Submitted by –
Ankit Mishra, Diksha Patel , Nitin Mandloi ,Shivangi Singh Rajpoot, Sneha Thakur , Uday Bhalse

AGRICULTURE CENSUS

Agriculture Census is a Statistical Operation for collecting, Processing and Dissimilating Data on the structure of Agriculture, covering the whole or a significant part of country.

1970-71 : Over One Lakh village level functionaries were involved in the collection of no. of operational holding, hand use cropping pattern etc.

1976-77 : The scope was evidenced to include a seperate input survey to obtain information on the use of various input such as fertilizers, manures, pesticides etc.

1998-81 : The scope was increased by collecting seperately detaiks about the holding operated by scheduled castes and scheduled tribes.

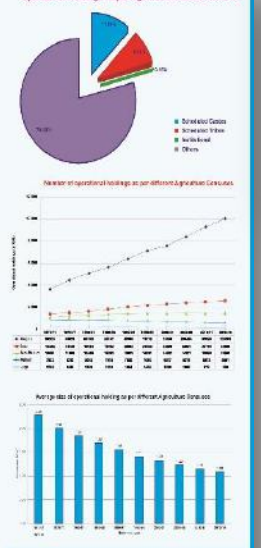
1985-86: Computers are used for the first timein the history of agricultural census for processing the agriculture census data.

1995-96 : For the first time number of operational holdings and area operated were collect gender wise i.e. male and female and one more group of hlders was added i.e. institutional hldings.

2000-01: An estimate for the important parameter, viz. number and area of operational holdings was made for bihar and meghalaya but no such attempt was made for jharkhand.

2010-11 : After last two census in which some status could not conduct the census. but in agriculture census 2010-11 all status / UTS conducted the fieldwards.

2015-16 : In this census data on source of irrigation was not collected.



Presented By

Sameeksha Meshram, Sneha Bhatt, Anushree Sondahare, Sakshi Patel Surekha Patel, Niharika Patel,

GROUP PRESENTATION RUBRIC

The teacher will use this rubric to evaluate each group's presentation.

S.N.	Trait	Criteria → Mark ↓	Excellent	Good	Average
1.	Presence of students in the classroom	5	Always being present in the classroom	Less present	Occasionally/not present
2.	Presentation	8	Presentation was well organised, well prepared and everything was complete in great detail.	Presentation was organised and there were some details that were incomplete.	The presentation lacked organisation and had little evidence of preparation
3.	Flex made by Students	7	Flex is presented in an organised way, had a good amount of material.	Flex is presented in partially organised way where little content was lacking.	Flex is presented in disorganised way had a no valuable material.
	Total Mark	20	-	-	-

Thank you

Govt. Holkar (Model Autonomous) Science College, Indore (M.P.).

DEPARTMENT OF STATISTICS

PEDAGOGY WITH RETROSPECTION AND EXPLORATION BASED LEARNING

PEDAGOGY WITH RETROSPECTION AND EXPLORATION BASED LEARNING

Faculty

- Dr. Rashmi Awad
- Prof. Shalini Yadav
- Prof. Kunika Tiwari

Targeted Students

- B. Sc. III Sem

CONCEPT LINE -

- Introduction
- Aim of introducing this teaching method
- Learning Outcomes
- Teaching Learning Process
- Sustainable development goals achieve
- Skills Develop among students
- Progression in learning
- Assessment for Learning [Rubric Method based Evaluation System]
- Corroborative Evidences

Introduction

- Types of data
- Sample & Population
- Statistical Tests

Explain different Statistical Terminologies

Give information about CCE and Project work

- Case Study for CCE
- Project based on Primary Data for Practical Internal Assessment

- How to search research paper for case study
- How to make report

Give outline of Case Study

Give outline of Project work

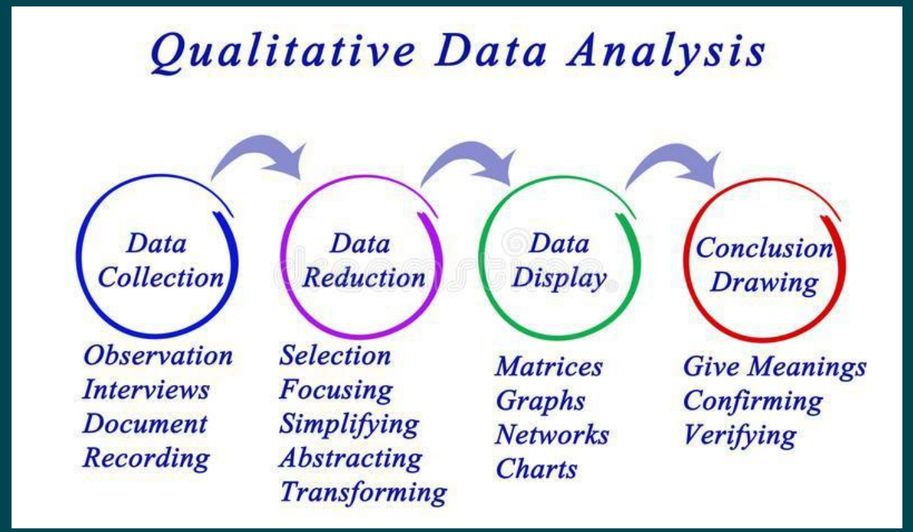
- How to collect primary data through Google form
- How to set objectives
- How to apply test
- How to interpret the result and draw conclusion
- How to prepare Project file and PPT

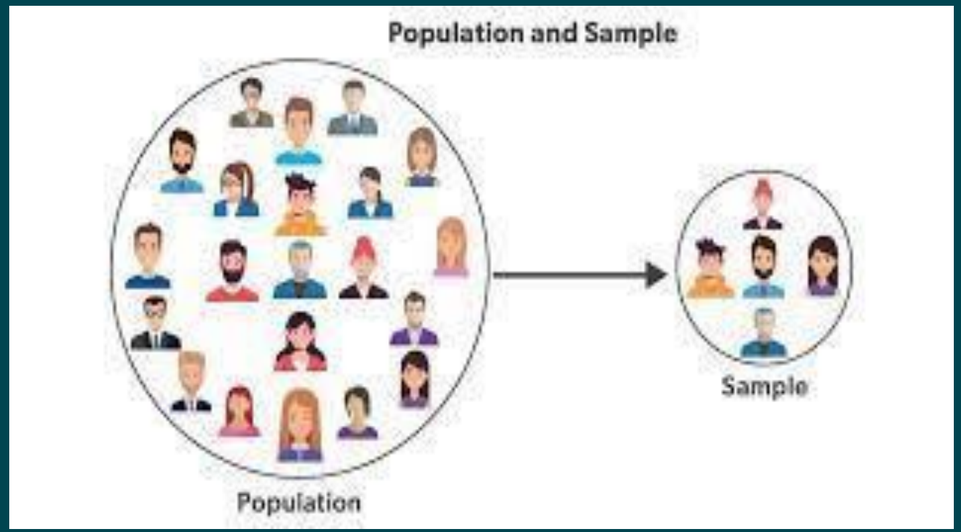
Different Statistical Terminologies

Statistics

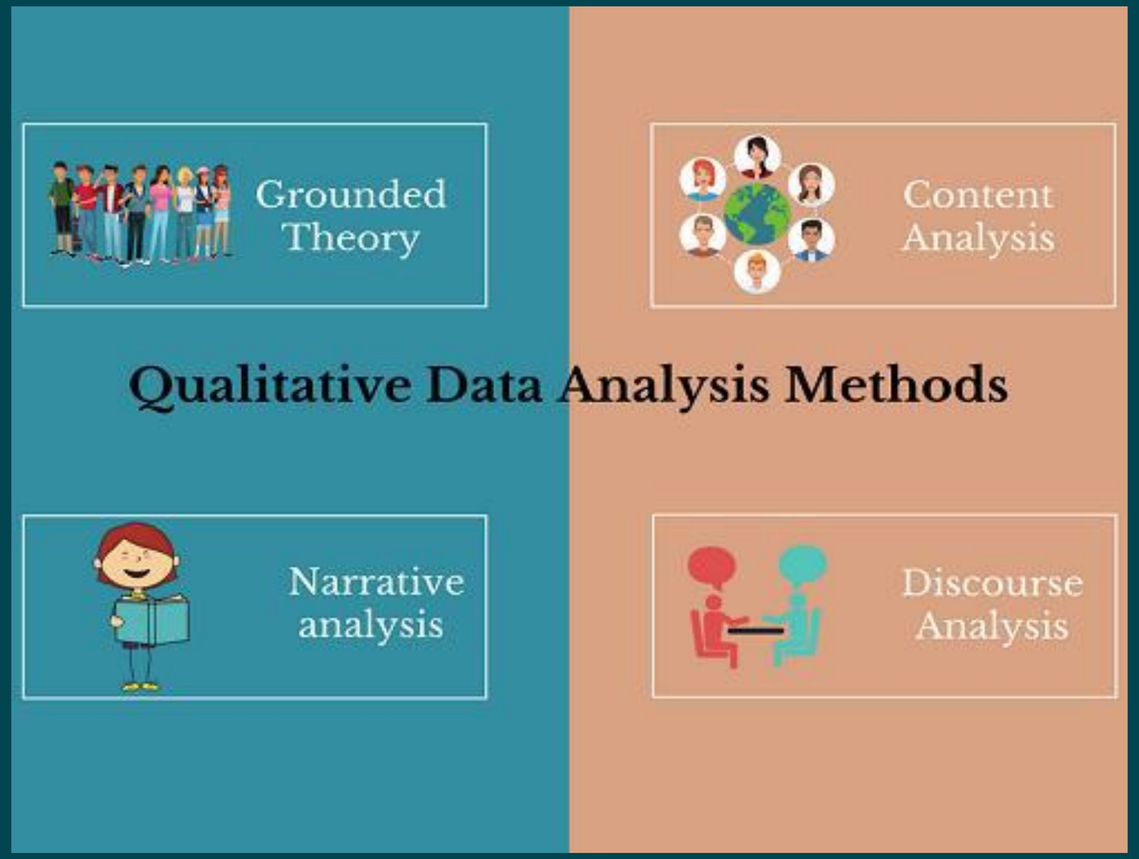
[stə-'ti-stiks]

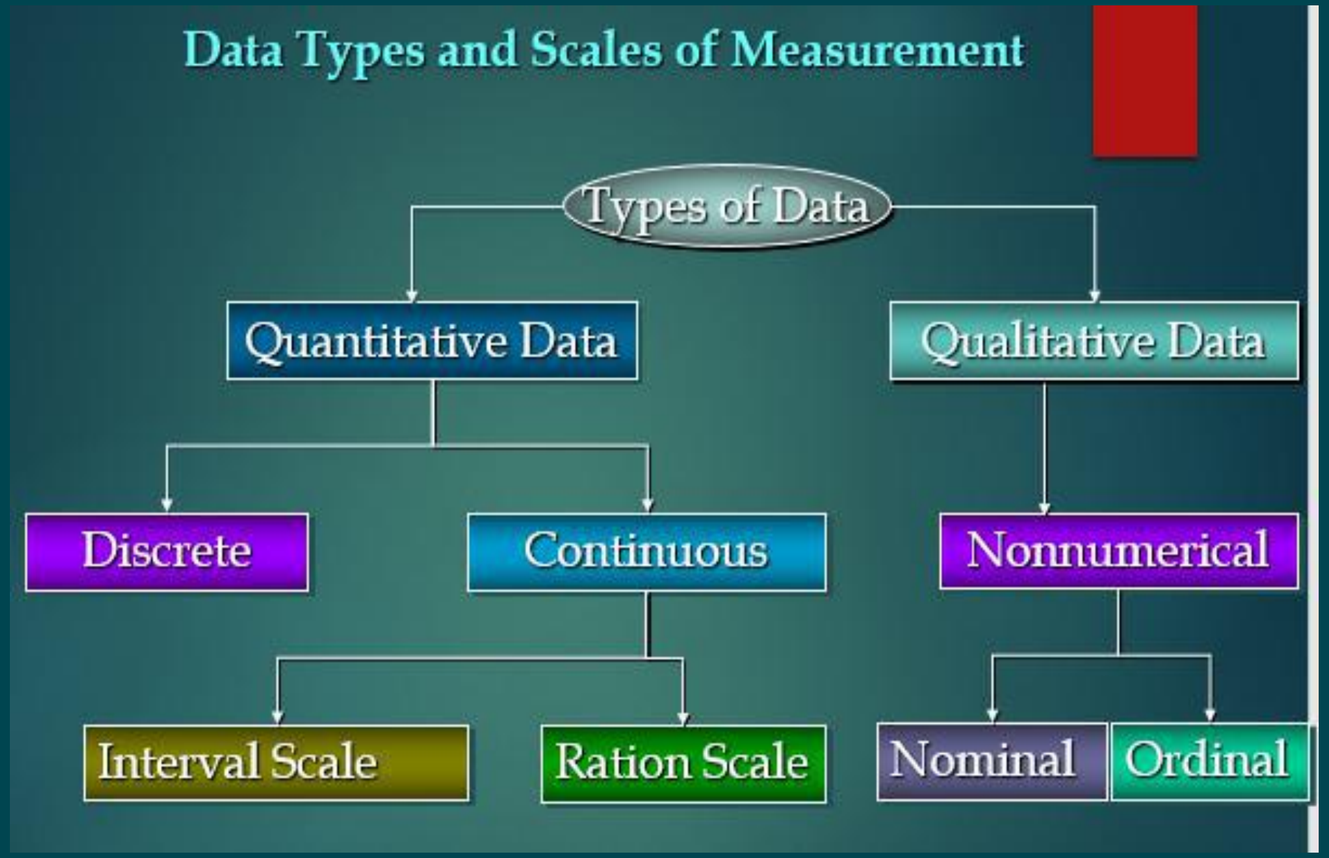
A branch of applied mathematics that involves the collection, description, analysis, and inference of conclusions from quantitative data.





How to use Statistical Tests on Qualitative Data





Aim of introducing this RETROSPECTION AND EXPLORATION based teaching method

- To encourages students to be more engaged and to learn actively.
- To develop imagination and creativity among students.
- Allow students to demonstrate their capabilities while working independently.
- To connect students with the real world.
- To built skills for college, career and life.
- To provides opportunities for students to make familiar with new ICT tools.
- To develops a student’s ability to work with other students, building teamwork and group skills.
- It helps the teachers communicate in meaningful ways with the student.
- The teacher learns more about the student as a person.

Learning Outcomes (according to Bloom's Taxonomy)

Define

Define the basic concepts like Categorial data, Population, Sample, Statistical Tests.

Understand

Students go throw the research paper and then they explain the paper by making a Case Study for their CCE work.

Design

For their Practical Internal assessment project work, they collect primary data using goggle forms.

Analyze

Students categories the data, organize it, examine it and then set objectives.

Apply

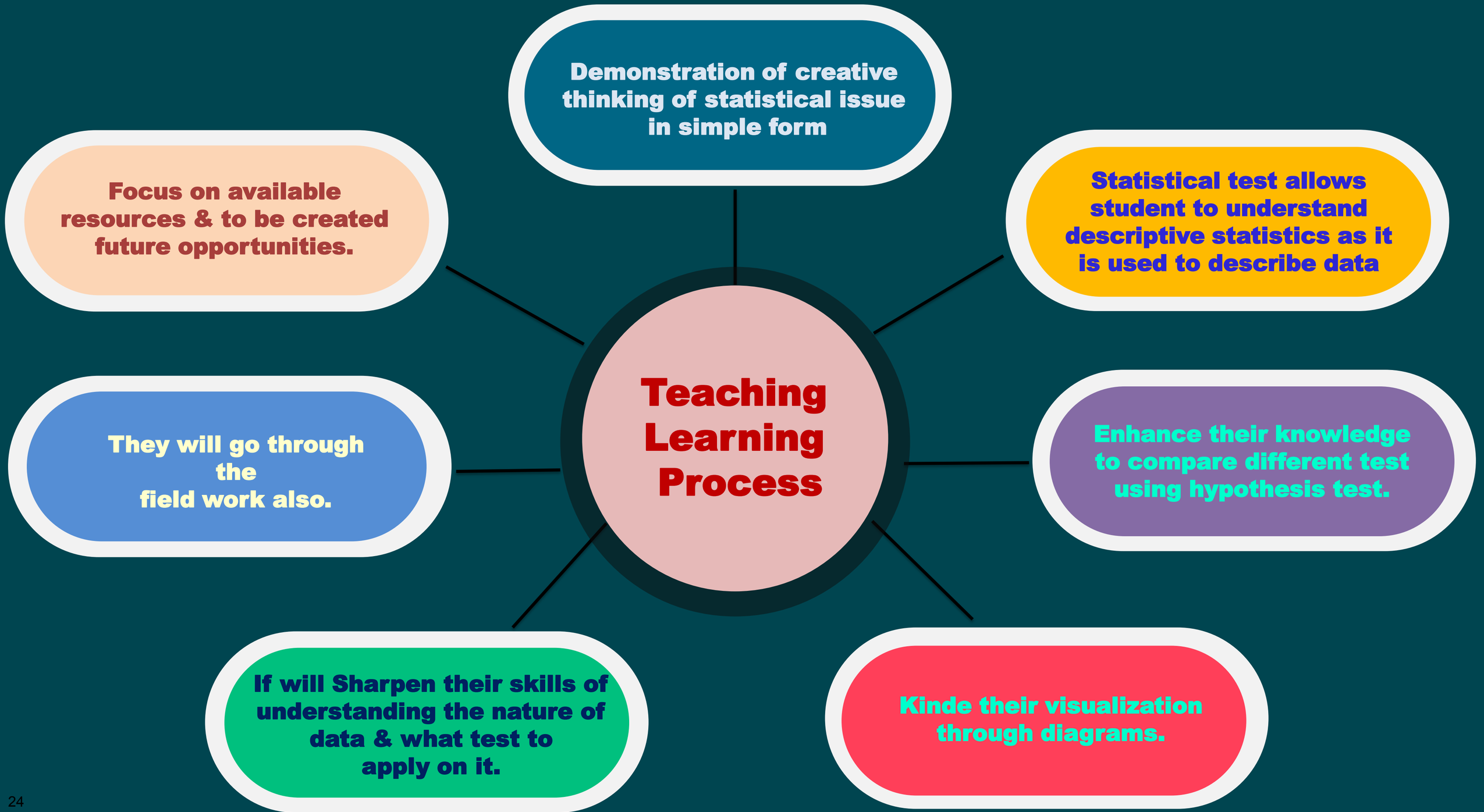
Now students achieve the set objectives by applying different statistical tools and tests.

Evaluate

Students appraise their findings, give result and draw conclusion.

Create

At last students prepare the project file and present their findings through PPT Presentation


Demonstration of creative thinking of statistical issue in simple form
Focus on available resources & to be created future opportunities.
Statistical test allows student to understand descriptive statistics as it is used to describe data
Teaching Learning Process
They will go through the field work also.
Enhance their knowledge to compare different test using hypothesis test.
If will Sharpen their skills of understanding the nature of data & what test to apply on it.
Kinde their visualization through diagrams.

SUSTAINABLE DEVELOPMENT GOALS [SDG]

ACHIEVE

Quality Education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Partnership for the Goal

Strengthen the means of implementation and revitalize the global partnership for sustainable development

Progression

1 CURIOUS "crawl"	2 CREATION "walk"	3 IMPACT "run"	4 TRANSFORMATION "fly"
			
Curious to design google form which increases their ability of using techniques.	Reimagine the research paper for further statistical application, Improve analytical skill in students.	Packaged the data in new way with the help of Statistics, enhance their knowledge for identifying the data type.	Beyond classroom they visited to different people for data collection.

Progression in learning

Case Study for Continuous Comprehensive Evaluation (CCE)

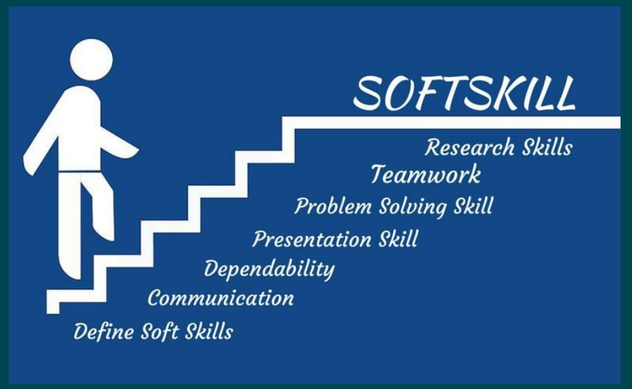
- Students select a research paper
- Studied and understand it
- Prepare a case study on it according to their own understandings

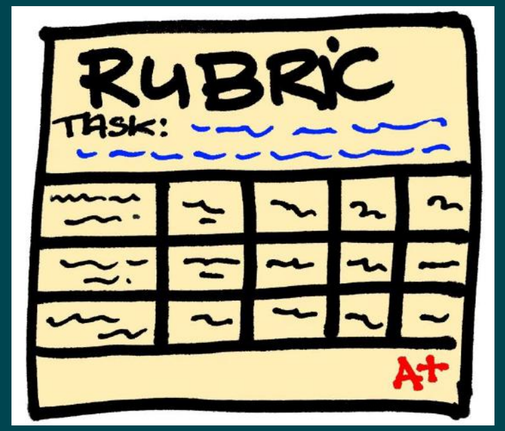
Project based on primary data for Practical Internal Assessment

- Students made Google form for Primary data collection
- Set Objectives by defining Statistical hypothesis
- Analyze the data
- Apply Statistical test
- Draw Result and Conclusion
- Prepared Project file
- Present their findings through PPT presentation

Skills Develop among Students

- Encourages independent thinking
- Communication Skills
- Collaboration Skills
- Enhances Creativity
- Critical Thinking and Problem Solving Skills
- Personal and Time Management
- Inquiry Skills
- Technology Skills





EVALUATION SYSTEM BASED ON RUBRIC METHOD

- **Assessment Method for learning**
  - **Continuous Comprehensive Evaluation [CCE] (20)**
    - Attendance (5)
    - Report (8)
    - Presentation (7)
  - **Practical Internal Assessment (40)**
    - Attendance (10)
    - Report (14)
    - Presentation (16)
      - PPT (8)
      - Viva (8)

Table: 1 Rubric#R1: Continuous Comprehensive Evaluation (CCE) based on Case Study Maximum Marks: 20

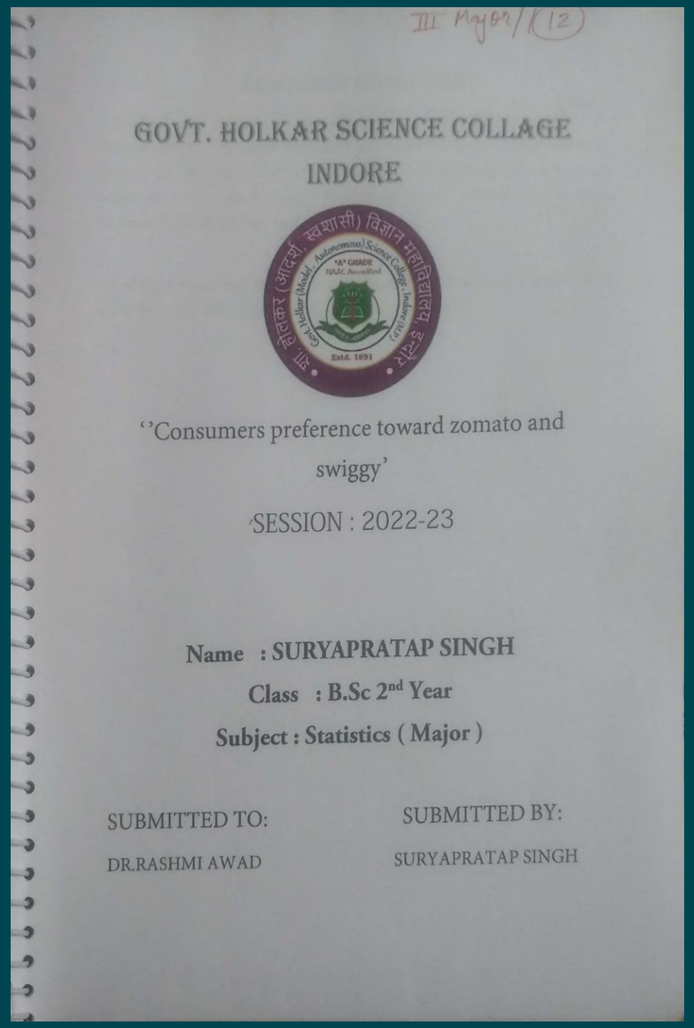
Criteria	Marks Assigned	High	Medium	Low
Attendance (Including Regularity and Punctuality)	05	Exhibits perfect attendance. Continually on-time	Late or absent sometimes in class and lab during the whole session.	Late or absent frequently in class and lab during the whole session.
Rating		4-5	2-3	0-1
Report	08	Project report is according to the specified format, references are appropriate	Project report is according to the specified format, but not well prepared, references are not appropriate	Project report not Prepared according to the specified format, references are missing
Rating		6-8	3-5	0-2
Presentation	07	Contents of presentation are appropriate and well delivered. Time guidelines were followed. Proper eye contact with audience and clear voice with good language.	Contents of presentation are appropriate but not well delivered. Time guidelines were violated marginally. Eye contact with few people and unclear voice	Contents of presentation are not appropriate and not well delivered. Time guidelines were violated significantly. Poor delivery of presentation.
Rating		6-7	4-5	0-3
TOTAL MARKS	20			

Table: 1Rubric#R1: Continuous Comprehensive Evaluation (CCE) based on Case Study Maximum Marks: 20

Table: 2 Rubric#R2: Practical Internal Assessment based on Project based on primary data Maximum Marks: 40

Criteria	Marks Assigned	High	Medium	Low
Attendance	10	Exhibits perfect attendance. Continually on-time.	Late or absent sometimes in class and lab during the whole session.	Late or absent frequently in class and lab during the whole session.
Rating		8-10	5-7	0-4
Project Report	14	Project report is according to the specified format, references are appropriate	Project report is according to the specified format, but not well prepared, references are not appropriate	Project report not Prepared according to the specified format, references are missing
Rating		10-14	5-9	0-4
Presentation	PPT 08	Contents of presentation are appropriate and well delivered. Time guidelines were followed. Proper eye contact with audience and clear voice with good language.	Contents of presentation are appropriate but not well delivered. Time guidelines were violated marginally. Eye contact with few people and unclear voice	Contents of presentation are not appropriate and not well delivered. Time guidelines were violated significantly. Poor delivery of presentation.
	Viva 08	Masterfully defends research by providing clear and insightful answers to questions.	Competently defends research by providing very helpful answers to questions.	Answers questions, but may lack insight. Does not adequately defend research.
Rating		11-16	5-10	0-4
TOTAL MARKS	40			

Corroborative Evidences



III Major/(12)

GOVT. HOLKAR SCIENCE COLLAGE

INDORE

''Consumers preference toward zomato and swiggy'

SESSION : 2022-23

Name : SURYAPRATAP SINGH

Class : B.Sc 2nd Year

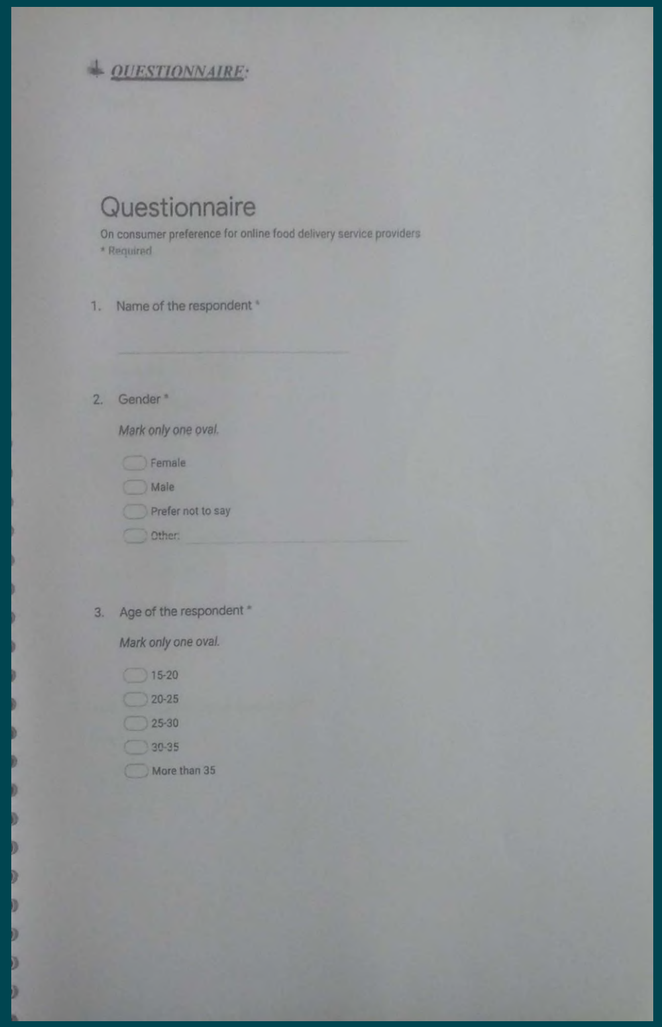
Subject : Statistics (Major)

SUBMITTED TO:

DR.RASHMI AWAD

SUBMITTED BY:

SURYAPRATAP SINGH



QUESTIONNAIRE:

Questionnaire

On consumer preference for online food delivery service providers

* Required

1. Name of the respondent *

2. Gender *

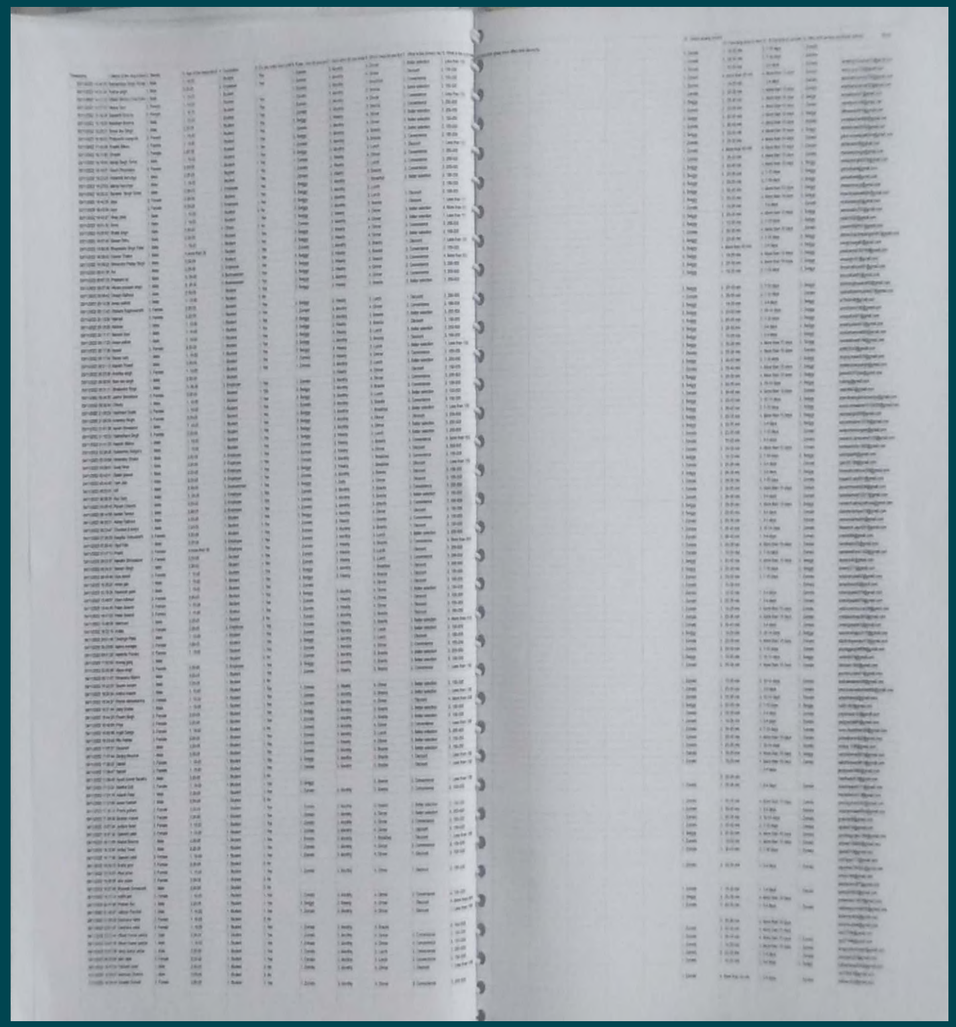
Mark only one oval.

- Female
- Male
- Prefer not to say
- Other:

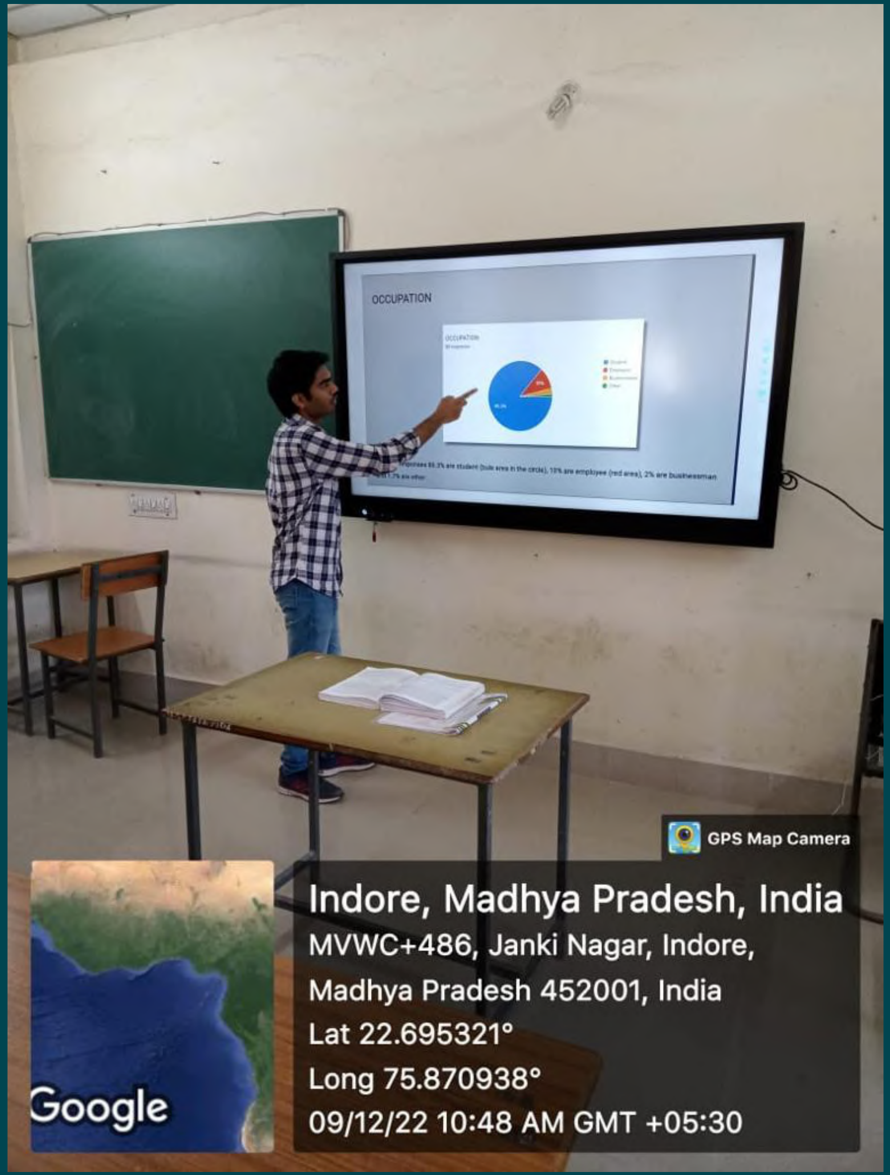
3. Age of the respondent *

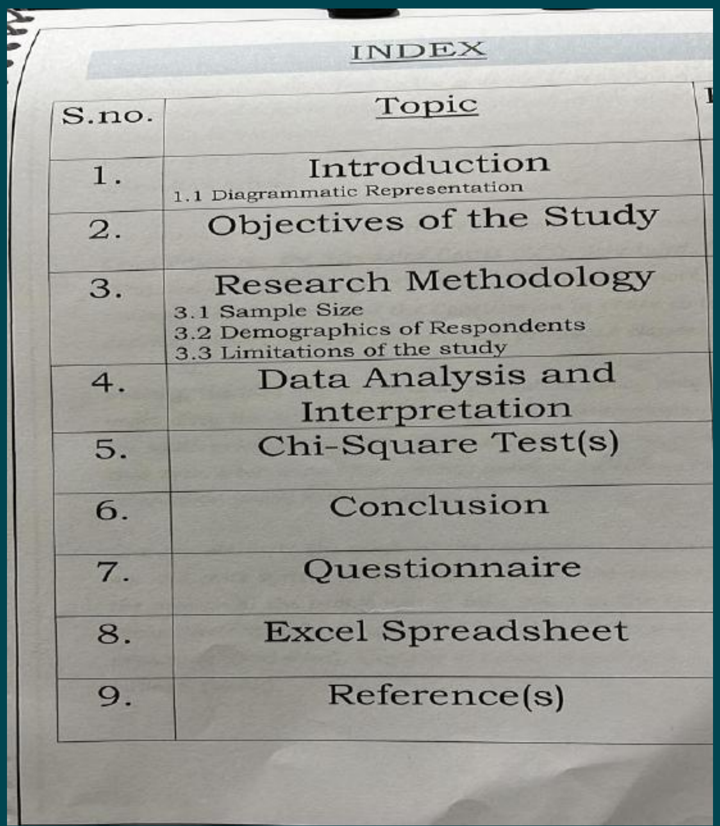
Mark only one oval.

- 15-20
- 20-25
- 25-30
- 30-35
- More than 35



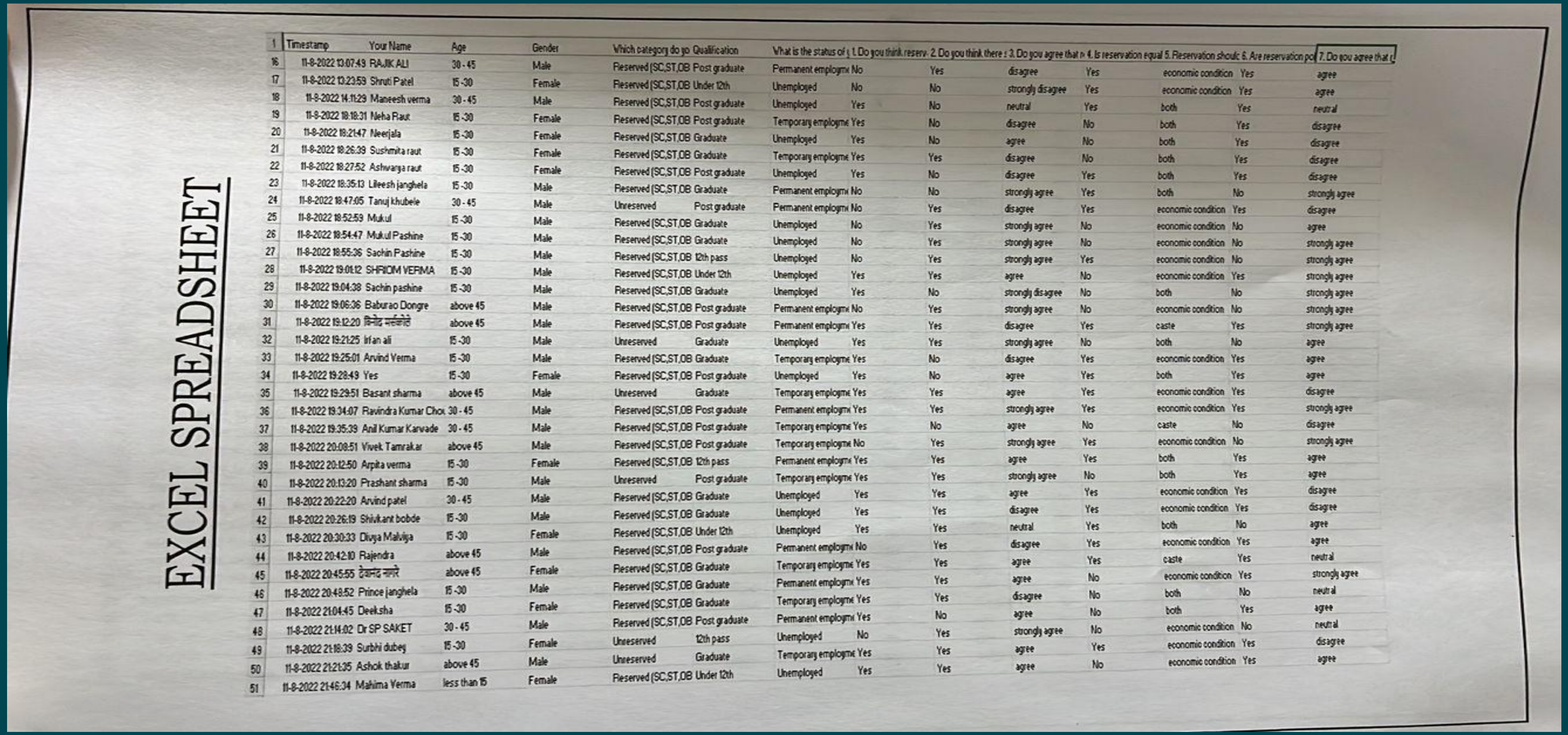
Corroborative Evidences

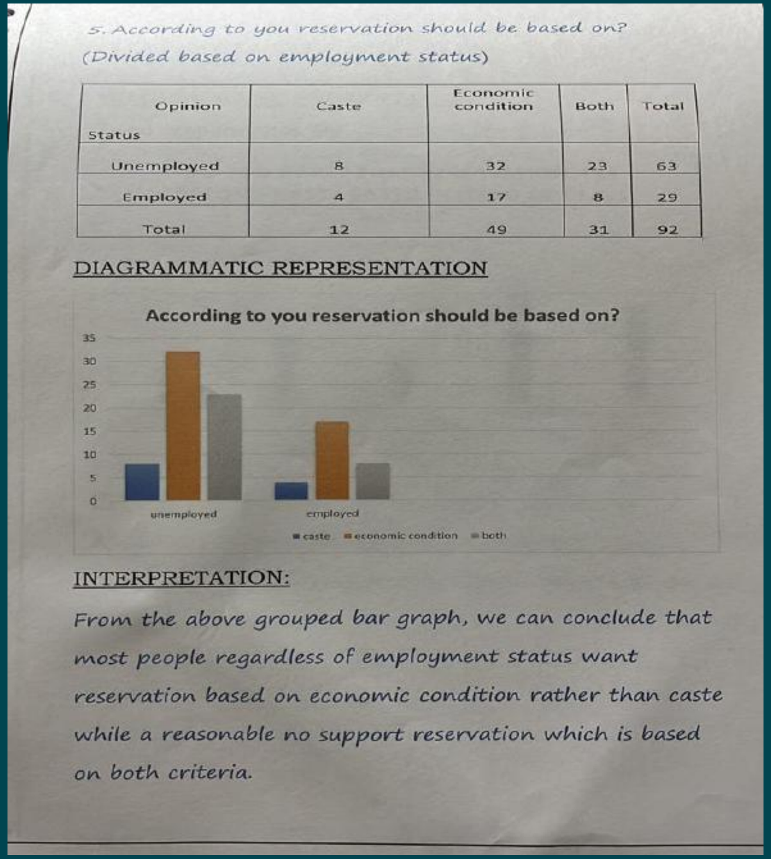




INDEX

S.no.	Topic
1.	Introduction 1.1 Diagrammatic Representation
2.	Objectives of the Study
3.	Research Methodology 3.1 Sample Size 3.2 Demographics of Respondents 3.3 Limitations of the study
4.	Data Analysis and Interpretation
5.	Chi-Square Test(s)
6.	Conclusion
7.	Questionnaire
8.	Excel Spreadsheet
9.	Reference(s)





5. According to you reservation should be based on?
(Divided based on employment status)

Opinion / Status	Caste	Economic condition	Both	Total
Unemployed	8	32	23	63
Employed	4	17	8	29
Total	12	49	31	92

DIAGRAMMATIC REPRESENTATION

INTERPRETATION:

From the above grouped bar graph, we can conclude that most people regardless of employment status want reservation based on economic condition rather than caste while a reasonable no support reservation which is based on both criteria.


THANK
YOU

GOVT. HOLKAR (MODEL, AUTONOMOUS) SCIENCE COLLEGE, INDORE (M.P.)

DEPARTMENT OF CHEMISTRY

SESSION : 2022-23

Pedagogy based on Role Play Activity

Faculties-Dr Namrata Pathak

Dr Namita Bende

CONCEPT LINE

- Introduction
- Pedagogy used
- Learning outcomes
- Role Play pedagogy in Teaching- learning process
- Progression in learning
- Assessment method for learning

INTRODUCTION

Role Play activity for Components of Spectrophotometer was executed by students to increase their creative and communication skills.

It was the best way to learn about Spectrophotometer for Exam. This activity help students to do work in Industry and Research laboratories(Quality Control, Purity Testing , Structural Analysis and other Spectroscopic activities).

Role play activity develops students personality.

Pedagogy used

Role Play Activity (Creativity and Communication skill development).

LEARNING OUTCOMES

It enhance the good observational skills.

It also help to analyse, Understand, Discover, Explore, Solve problems, Co-operation and Teamwork.

It enhances students Self Confidence and Personality which will helpful for preparations for interview.

This Activity aims to make students work in a team and for the team.

This activity will develop leadership qualities in students. It taught students to be fearless in any situation.

This activity develops several aspects of students personality including Cognitive, social and Moral Development.

ROLE PLAY PEDAGOGY IN TEACHING- LEARNING PROCESS

It enhance their understanding and their Imagination

It Sharpen their analytical skills

It Group activity leads to team work

It boost self confidence of students

Progression in learning

Introduction was given by Ketan Parmar and Mokshada Pater.

Activity has parts or components of Spectrophotometer which was played by following students of Class B.Sc III year-B8

1) Puja Baravalia-Modern Day Spectrophotometer
2) Akshaya P. -Source of light
3) Priyanka Bhandari- collimator
4) Chiya Bisen-Monochromator
5) Sandeep Dwivedi-Nicol Prism
6) Saloni Jangid- Sample container
7) Khushi Patidar -Detector and Display
8) Ragini Jatav-Graph

Pranav Sharma has discussed the Conclusion

Saarah Khan has made Poster making

Introduction by all students

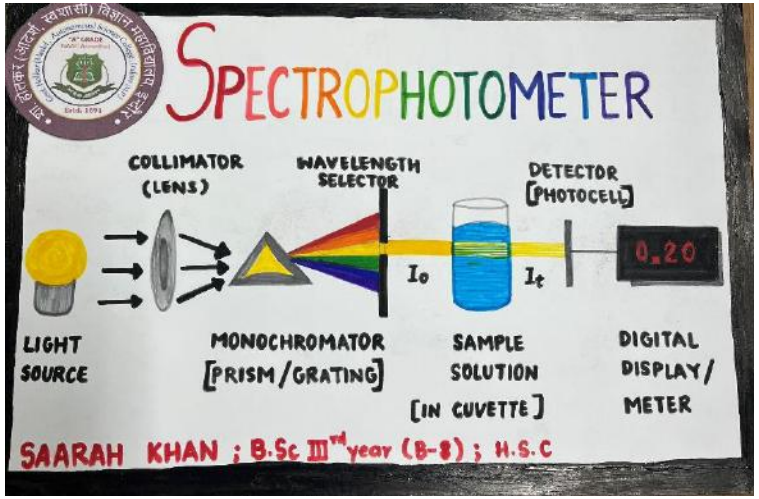
Components of spectrophotometer

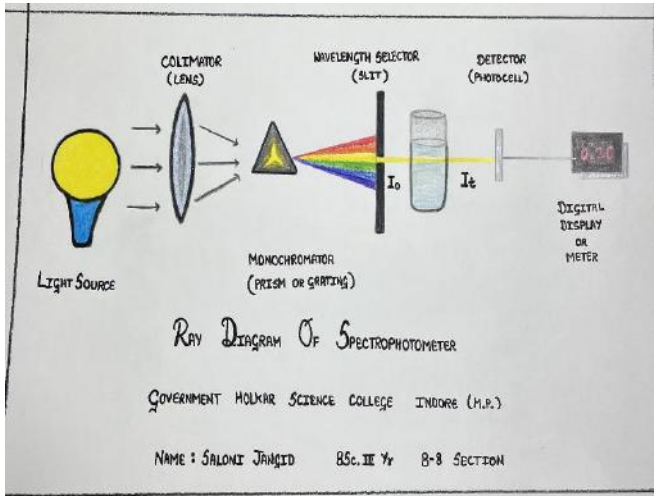
Components with faculties

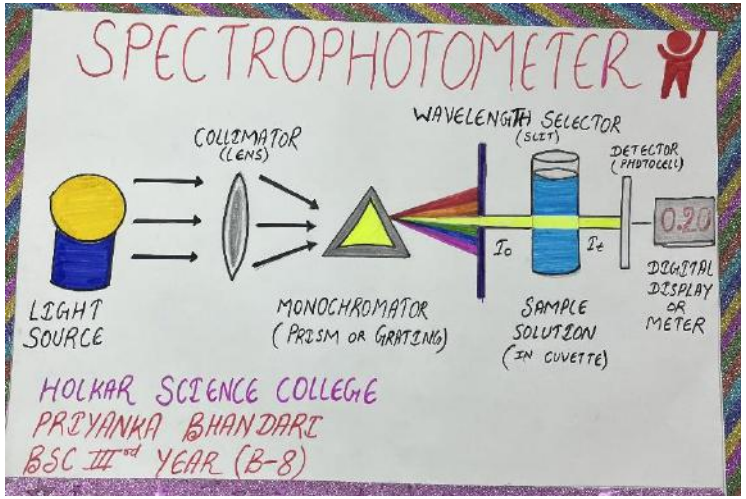
Conclusion and Applications

Assessment method for learning

• **Assessment of the Activity** was done by asking all students to draw a Ray diagram of components of Spectrophotometer.







An Experimental Learning Pedagogy as Solo Presentation

Richa Sharma

Dept. of Pharmaceutical Chemistry

Govt. Holkar (Auto.) Science College Indore M.P.

Subject – Pharmaceutical Chemistry

Topic Chemistry of Natural Product

Pedagogy with Solo Presentation

Students of M.Sc. I sem

Why ??

Terpenoid, Citral and Cholesterol are topics, which were difficult for some students. Those students for whom this topics are easy ,came forward to give presentation on above topics.

An Introduction

- To promote student learning .
- By solo presentation students learn how to speak in front of a group , a broadly applicable professional skill.
- Students strengthen their vocabulary, grammar, speaking and writing skill.
- Students also gain more confidence and good communication skills.

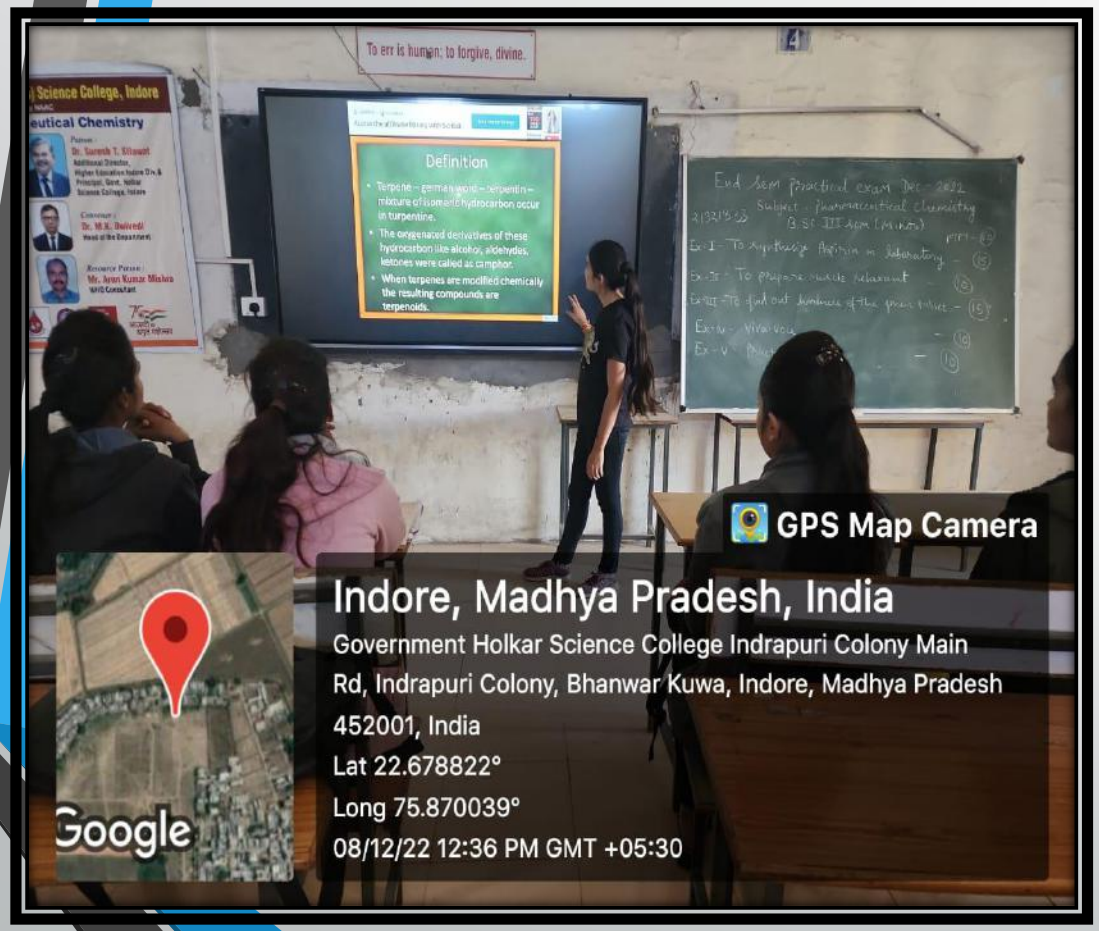
Progression in learning

- Terpenoids, Citral and Cholesterol & its synthesis are topics which were difficult for some students.
- Students came forward to give presentation on this topics.
- Solo presentation is scheduled on Dec. 08,2022 AT 12:00 PM.
- Students presented on above topics.

Learning outcomes

- **Understand** Rest of the class listen carefully and understand, what their classmate presented.
- **Apply** Students apply their classroom knowledge and communicate in a clear way.
- **Create** Students design an eye-catching presentation.

Pictures of Presentation




To err is human; to forgive, divine.
CONTD
cholesterol
GPS Map Camera
Indore, Madhya Pradesh, India
Government Holkar Science College Indrapuri Colony Main Rd, Indrapuri Colony, Bhanwar Kuwa, Indore, Madhya Pradesh 452001, India
Lat 22.678822°
Long 75.870039°
08/12/22 12:33 PM GMT +05:30
Google

Assessment Method for Learning

Following scheme is used to evaluate students presentation

S.NO.	Name of Students	Topic	Marking		Total (10)
			Presentation (5)	Content(5)	
1.					
2.					
3.					
4.					

Thank You

GOVT. HOLKAR SCIENCE COLLEGE INDORE (M.P)

DEPARTMENT OF ZOOLOGY

PEDAGOGY BASED ON PARTICIPATIVE LEARNING

TYPES OF BEAKS IN BIRDS

SUBMITTED TO

DR. RUCHI SHIVLE

DR. PRAMILA S.

SUBMITTED BY

B.sc 2nd year(3rd) sem

SECTION - B11

BATCH - 2022- 2023

Concept Line

Introduction

Pedagogy used

Learning outcomes

Model Preparation pedagogy in Teaching-learning process

Progression in learning

Assessment method for learning

Introduction

PARTICIPATIVE LEARNING IS AN APPROACH TO TEACING AND LEARNING WHICH FOCUSES ON THE LEARNER

PARTICIPATION ACTIVELY ENGAGES STUDENTS WITH THE SUBJECT MATTER, POSHES THEM TO CREAT CONCEPYS AND FORCES THEM TO SHOW EVIDENCE FOR THEIR CLAIMS. PUT SIMPLY , IT MAKES STUDENTS WORK HARDER

Learning Outcomes

PARTICIPATIVE learning helps students reflect on their understanding by encouraging them to make connections between their prior knowledge and new concepts. Often, active learning tasks ask students to make their thinking explicit, which also allows instructors to gauge student learning.

MODEL PREPARATION pedagogy in Teaching- learning process

- Models use familiar objects to represent unfamiliar things. Models can help you visualize, or picture in your mind, something that is difficult to see or understand. Models can help scientists communicate their ideas, understand processes, and make predictions.

Progression in learning

Seed Eating Type (Seed Crush)

- The seed eating beaks are short, stout and conica
- These are broad at the base and pointed at the tip.
- This type of beaks are characteristic of small seed eating or graminivorous birds such as sparrows, finches and cardinals etc.

CUTTING AND BITING TYPE

1. The cutting and biting type beaks are long and slender.
2. These are strong and provided with sharp horny edges.
3. This type of beaks can be used for various purposes.
4. These are found in crows (Corvus) and rovens, etc.

Jungle Crow

FRUIT EATING TYPE

1. The fruit eating beaks are sharp, powerful and hooked.
2. The upper beak is movable on the skull but in case of parrot it is freely movable.
3. This type of beaks are well adapted for tearing fruits and gnawing hard nuts and seeds.
4. Such beaks are found in parrots and cockatoos.

Parrot

PIERCING AND TEARING TYPE

1. The piercing and biting beaks are short, pointed, slightly hooked and sharp edged.
2. They are adapted for piercing and tearing the flesh into pieces.
3. They are operated by well deve- loped mandibular muscles.
4. These are commonly found in carnivorous birds such as vultures, hawks, eagle's, kites and owls.


Hawk


owl

INSECTIVOUROUS TYPE

1. The insectivorous beaks are found in swifts, swallows, flycatchers, night jars and hoopoe, etc.
2. In hoopoe the beak is long, slender and slightly curved.
3. The beak in hoopoe is adapted for turning the leaves and probing into soil for insect larvae, pupae and mites, etc.

Hoopoe

FISH CACHING TYPE

1. The fish catching beaks are long, narrow and sharp.
2. In cormorant the beak is slightly curved at the tip and have tooth-like processes adapted for capturing the fish.
3. In king fisher the beak is long powerful and sharply pointed to capture fish, frogs, tadpoles, molluscs and other aquatic animals.

KINGFISHERS

MUD PROBING TYPE

1. This type of beaks are very long, slender and slightly curved.
2. These are used as probes for thrusting in the mud for searching the food which comprises usually aquatic worms and larvae.
3. These are commonly found in stilts, snipes, sand-pipers, jacanas, lapwigs and curlews, etc.

STILT

MUD AND WATER STRAINIG TYPE

1. This type of beaks are broad and flat.
2. The margins of the jaws are provided with transverse lamellae or horny serrations making it an efficient filter or the sieve.
3. Because of the presence of transverse lamellae on the margin of jaws, the mud and water pass out leaving the food into the mouth.
4. This type of beaks are commonly found in ducks, teals, geese and flamingos.

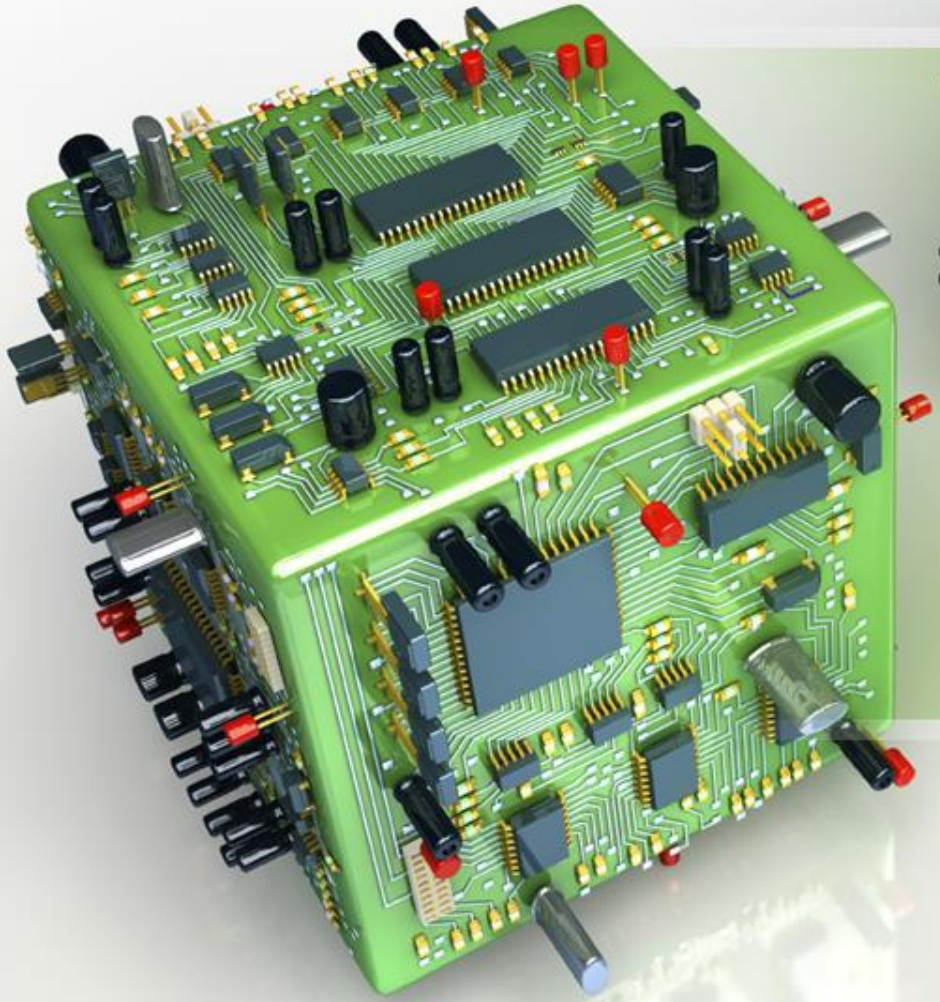
FLAMINGO

Assessment method for learning

ASSESMENT OF THE ACTIVITY WAS DONE BY ASKING ABOUT MODEL AND TYPES OF BEAK

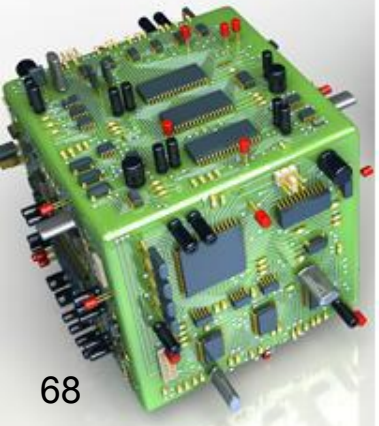
THANK YOU

Department of Electronics



PEDAGOGICAL INNOVATION IN CURRICULUM

Industrial Visit



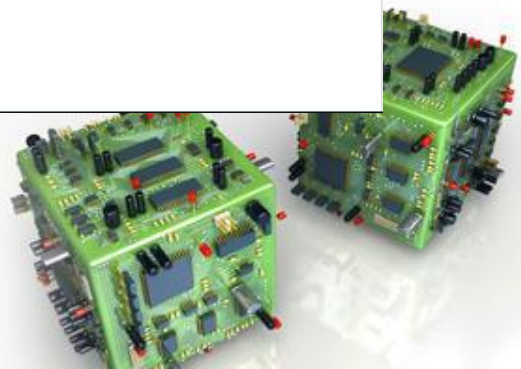
POLL CREATION USING LMS PORTAL:

HOME | ABOUT US | COURSES | CLASSES | WEBINARS / CONFERENCES | MY CITATION | FACULTY DISCUSSION | SCANNER | CONTACT

23	IIT Indore Academic Visit on 18 Nov 2022.	Are you going to join the Academic Visit to IIT Indore on 18 Nov 2022?	1) Yes 2) No 3) Not sure	1) Yes = 78 2) No = 1		List	In-Active	
24	IIT, Indore visit Attendance 18/19/2022 M. Sc. I SEM	I have taken my seat in bus	1) YES	1) YES = 37		List	Active	
25	IIT, Indore visit Attendance 18/19/2022 M. Sc. III SEM	I have taken my seat in bus	1) YES	1) YES = 42		List	Active	
26	Electronics Complex, Indore visit Attendance 19/19/2022	I have taken my seat in bus	1) YES	1) YES = 35		List	Active	
27	CMP-11/12/2022 M. Sc. IV SEM	Condensed Matter Physics-II में होने वाली दिक्कत के समाधान हेतु आज 7:00 बजे से 7:30 मैं उपस्थित रहूंगा/रहूंगी.	1) हाँ 2) आवश्यकता नहीं है			List	Active	

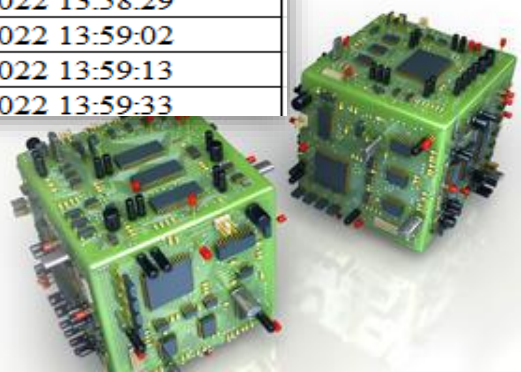
POLL ENTRY | BACK TO USER PORTAL

In the above screenshot of lms portal the red marked poll was created for the industrial visit



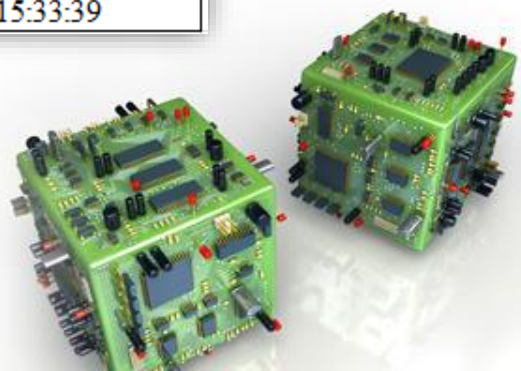
List of students participated in the poll creation:

	A	B	C	D	E
1	**Government Holkar (Model Autonomous) Science College**				
2	**Electronics Complex, Indore visit Attendance 19/19/2022**				
3	**I have taken my seat in bus**				
4	**S.No.**	**Name of the voter**	**Mobile No**	**Vote For**	**Vote Date Time**
5	1	Deepanshu Bhisikar	9340803388	YES	19-Nov-2022 13:52:43
6	2	Praveen Singh Parmar	6267339756	YES	19-Nov-2022 13:52:59
7	3	Kuldeep Panchal	8959874780	YES	19-Nov-2022 13:53:54
8	4	Jatin mujalda	8269457179	YES	19-Nov-2022 13:54:20
9	5	Arshita Pandey	8080475834	YES	19-Nov-2022 13:54:45
10	6	Yash rathore	8839326386	YES	19-Nov-2022 13:54:46
11	7	RAJIT TOMAR	9589256747	YES	19-Nov-2022 13:55:05
12	8	Nilesh Patil	9691216328	YES	19-Nov-2022 13:55:09
13	9	Sahil gupta	7225800550	YES	19-Nov-2022 13:55:27
14	10	Ajay Kumar Pandey	9752125658	YES	19-Nov-2022 13:55:34
15	11	Bhumika Agrawal	9406555701	YES	19-Nov-2022 13:55:41
16	12	Ayush Upadhyay	1234567890	YES	19-Nov-2022 13:56:38
17	13	Samprita Pandey	9171988968	YES	19-Nov-2022 13:57:22
18	14	Baghel Sohan Bhagwan	7972391534	YES	19-Nov-2022 13:57:23
19	15	Shreya pagare	7724939286	YES	19-Nov-2022 13:57:37
20	16	Deeksha pandey	7770886820	YES	19-Nov-2022 13:57:48
21	17	Vikash Tripathi	7067245861	YES	19-Nov-2022 13:58:29
22	18	Arpita Dwivedi	8839845312	YES	19-Nov-2022 13:59:02
23	19	Yashasvi kamde	9630654857	YES	19-Nov-2022 13:59:13
24	20	Roshni Rane	8319753768	YES	19-Nov-2022 13:59:33



Continued…

	A	B	C	D	E
24	20	Roshni Rane	8319753768	YES	19-Nov-2022 13:59:33
25	21	Shivam Pandey	7566200290	YES	19-Nov-2022 13:59:33
26	22	Yashi pateriya	9589705755	YES	19-Nov-2022 13:59:48
27	23	Rishabh Bhuriya	6265064683	YES	19-Nov-2022 14:00:29
28	24	Shalabh dixit	7974037013	YES	19-Nov-2022 14:00:40
29	25	Gaurav Choudhary	7974301351	YES	19-Nov-2022 14:00:58
30	26	Vinod kumar chauhan	9630964940	YES	19-Nov-2022 14:01:37
31	27	Satyam bisen	9516252771	YES	19-Nov-2022 14:02:01
32	28	Abhishek kumar mahobiya	7224897034	YES	19-Nov-2022 14:02:20
33	29	Khushi Mansoori	9165741886	YES	19-Nov-2022 14:02:23
34	30	Yash Ramje	6263077119	YES	19-Nov-2022 14:02:23
35	31	Radheshyam dangi	8516910300	YES	19-Nov-2022 14:02:46
36	32	Hansraj Muzzalda	9630887611	YES	19-Nov-2022 14:05:08
37	33	Kratika yadav	8319284756	YES	19-Nov-2022 14:05:29
38	34	Satyam Shivhare	7470969466	YES	19-Nov-2022 15:28:41
39	35	Sakshi Verma	7470582876	YES	19-Nov-2022 15:33:39



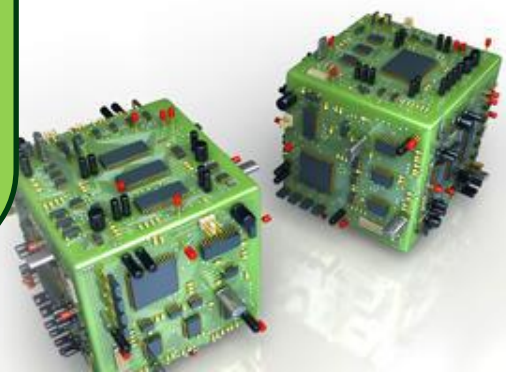
Introduction

- One day educational tour was organized by the **Department of Electronics**, Govt. Holkar (model autonomous) Science College, Indore on November 19, 2022 to visit Electronics Complex, Pardesipura, Indore(M.P.).

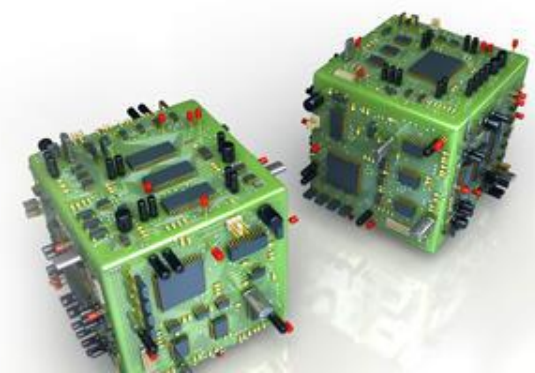
The Journey started at 10:30 AM from Holkar science college, we took a stop for breakfast, after having breakfast , the group reached destination at 12:00.

At Industry, **Mr. S.K. Billore (nursery incharge)** , **Dr. Chaturvedi** and **Mr. Ramesh Barde** welcomed everyone. There after he briefed about Company and diverse electronic equipment present.

Primary aim of this tour was to enhance student's knowledge towards practical electronic technology. Over this students procured knowledge about PCB Designing and Assembling .



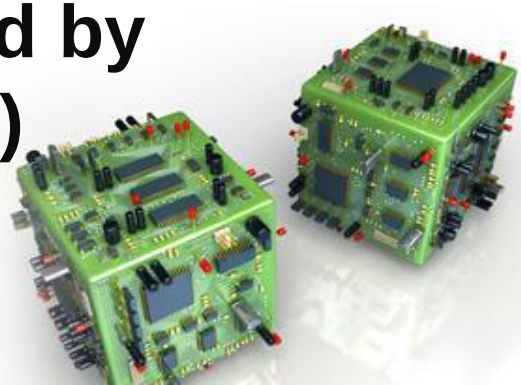
- **It was amazing effort by our Principal Sir, Dr. Suresh T. Silawat, H.O.D. - Dr. Netram Kaurav and faculties of Government Holkar(Model Autonomous) Science College (Electronics Department), with the team of Electrical and Electronics Pvt. Ltd. And Mines Instrument Pvt. Ltd. Industries to outset this plan as a success practically**



LED Assembling Workshop

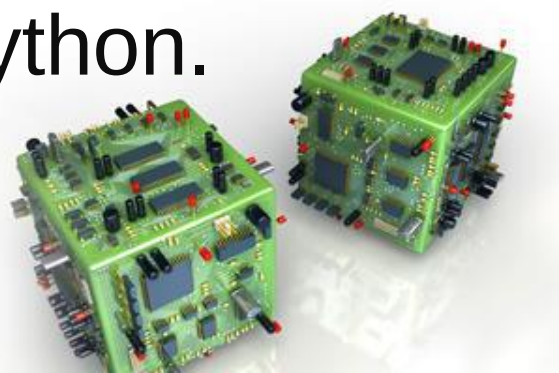
Entrepreneurship Camp

- **LED Assembling Workshop was organized by the Department of Electronics where students got to learn about the different parts of an LED Bulb and how to assemble them.**
- **The Students also learned about the tools used in the process of assembling.**
- **The student assembled white light LEDs as well as seven color LEDs.**
- **All these products were presented in the Entrepreneurship Camp organized by Govt. Holkar (Model Autonomous) Science College Indore.**



Certificate Courses :

- Department of Electronics is conducting several courses for students to enhance their industrial skills.
- Right now we are running two certificate courses Fabrication and Maintenance of Laboratory Equipment and Basic Programming with Python.



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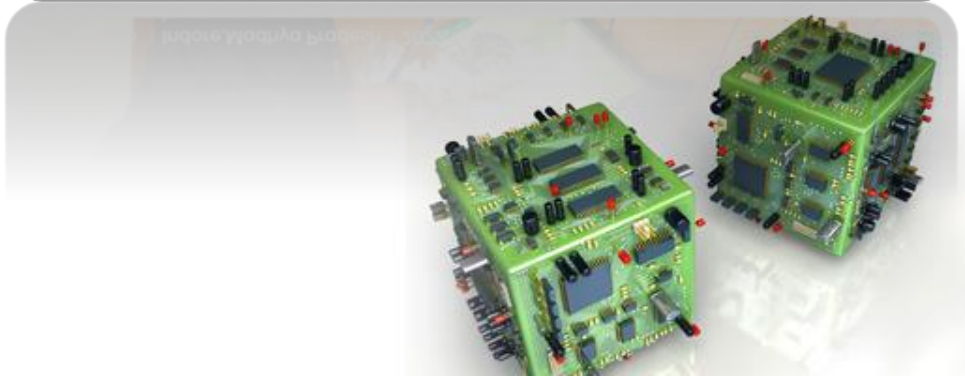


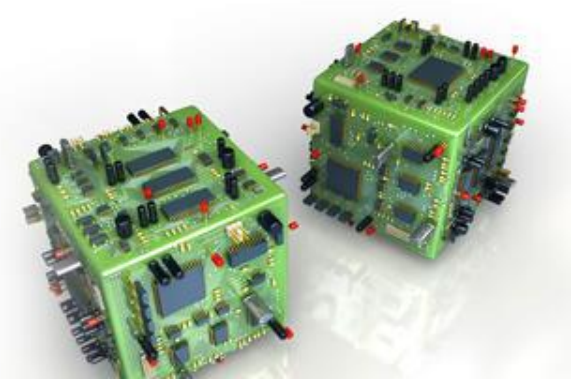
Pedagogy Used :

We have used the following pedagogies in the above mentioned activities :

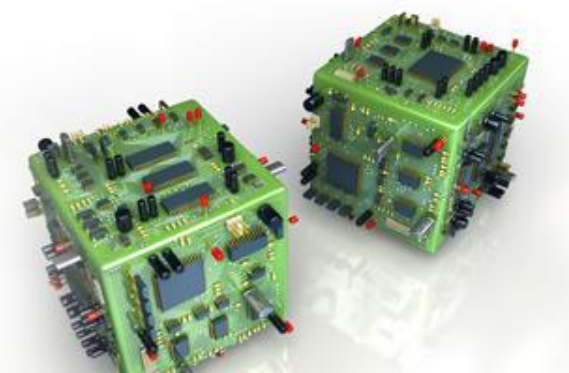
- Collegial Approach
- Constructive Approach
- Uplift Intrapersonal Skills
- Discrete Learning
- Scaffolding Approach

Learning Outcomes :

- From Industrial visit, students learned about the fabrication and assembling of electronics equipment.
- The students analyzed the working process of a startup company
- The students learnt the basics of business.
- During LED fabrication workshop, the students learnt co-ordination and co-operation.



Thank you



* Computer Science Department

Subject: Data Science

Topic: Analysis of Data

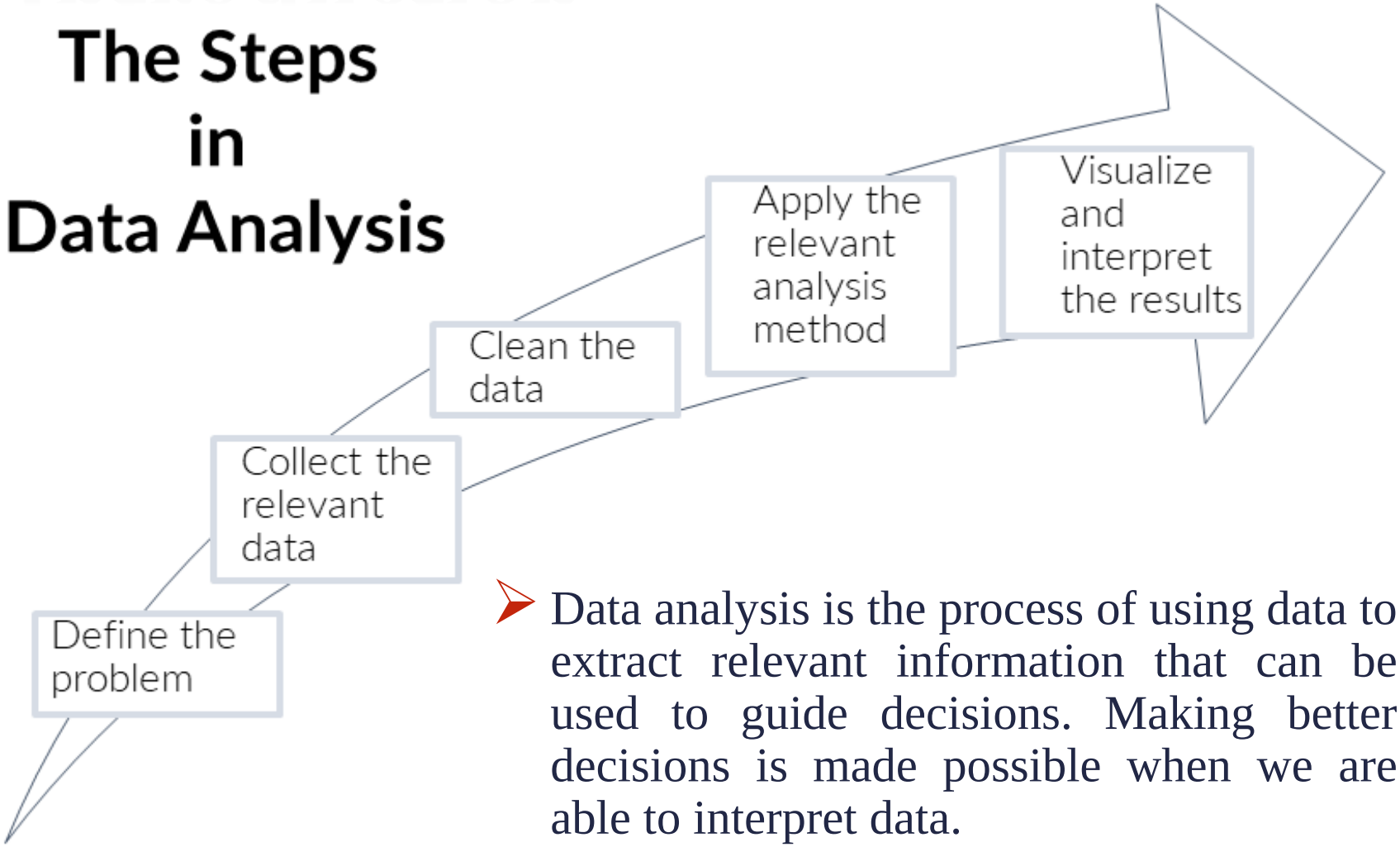
Pedagogy with

Problem Solving (Deign Thinking)

* Why ?

- Every time we make a decision in our daily lives, we consider what happened previously or what would happen if we make that particular choice. This is a straightforward example of data analysis.
- Analyzing our past or future and making judgments in light of it is all this is.
- Data analytics is important because it aids in performance optimization. Implementing it into the model means trying to identify more efficient ways of doing work.

Introduction



- Data analysis is the process of using data to extract relevant information that can be used to guide decisions. Making better decisions is made possible when we are able to interpret data.

* WHAT IS DESIGN THINKING?

- Design thinking is a user-centric, solutions-based approach to problem-solving that can be described in stages:

Stages of Design Thinking

- Empathize: research your users' needs.
- Define: state your users' needs and problems.
- Ideate: challenge assumptions and create ideas.
- Prototype: start to create solutions.
- Test: try your solutions out.

Learning Outcomes

Define	Definition and concept of the data and data set
Explain	Explain various types of data and different ways of collecting data.
Apply	Applying various processes of cleansing and converting data for the preparation of a data set.
Analysis	Analysis of the prepared data set to extract information
Implement	Implement code in R that analyses a given data set.

* Problem Solving based Pedagogy in Teacher Learning Process

- Enhance their visualization
- Promote Self- Learning
- Develop Transferable Skills
- Improve Teamwork Abilities
- Impact Solving their Real World Problem

Progression in Learning

```
1  library(dplyr)
2
3
4  #importing dataset
5  house_rent_data<-read.csv('House_Rent_Dataset.csv')
6  head(house_rent_data)
7  attach(house_rent_data)
8
9  boxplot(Rent ~ Size)
10
11 #removing missing values
12 house_data<-na.omit(house_rent_data)
13
14 boxplot(Rent ~ Size)
15
16 #analyzing data
17 dim(house_data)
18 summary(house_data)
19 str(house_data)
20 sum(is.na(house_data))
21
22
23 #checking relation between columns
24 cor_matrix<-cor(house_data[,c(2,3,4,11)])
25 cor_matrix
```

* Progression in Learning(Cont.)

```
26
27  #Counting number of houses on the basis of BHK value
28  BHK_count<-house_data%>%group_by(BHK)%>%summarise(Count = length(BHK))
29  BHK_count
30  png(file = "house_per_bhk.png")
31  hist(BHK)
32  dev.off()
33
34
35  #Most common house sizes
36  house_size<-house_data%>%group_by(Size)%>%summarise(Count = length(Size))%>%top_n(8)
37  head(house_size)
38  png(file = "house_per_size.png")
39  hist(Size)
40  dev.off()
41
42
43  #average size per BHK
44  avg_size_BHK<-house_data%>%group_by(BHK)%>%summarise(Avg_size = mean(Size))
45  avg_size_BHK
46
47
48  #average rent per BHK
49  avg_rent_BHK<-house_data%>%group_by(BHK)%>%summarise(Avg_rent = mean(Rent))
50  avg_rent_BHK
```

* Progression in Learning(Cont.)

```
#tenant type
house_tenant_type<-house_data%>%group_by(Tenant.Preferred, BHK)%>%summarise(Count=length(BHK))
house_tenant_type


#splitting data in 80:20 ratio for training and testing
split=sample.int(n=nrow(house_data), size=floor(0.8*nrow(house_data)))
train=house_data[split,]
test=house_data[-split,]
head(test)
head(train)


model<-lm(Rent ~ Size, data=train)
summary(model)
test$predicted_rent<-predict(model,test)
head(test)

plot(Size, Rent, col="blue", main = "Rent vs Size Regression",
abline(lm(Rent~Size)),cex=1.3,  xlab="Size", ylab="Rent")
```

* Progression in Learning(Cont.)

```
#tenant type
house_tenant_type<-house_data%>%group_by(Tenant.Preferred, BHK)%>%summarise(Count=length(BHK))
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head(test)

plot(Size, Rent, col="blue", main = "Rent vs Size Regression",
abline(lm(Rent~Size)),cex=1.3,  xlab="Size", ylab="Rent")
```
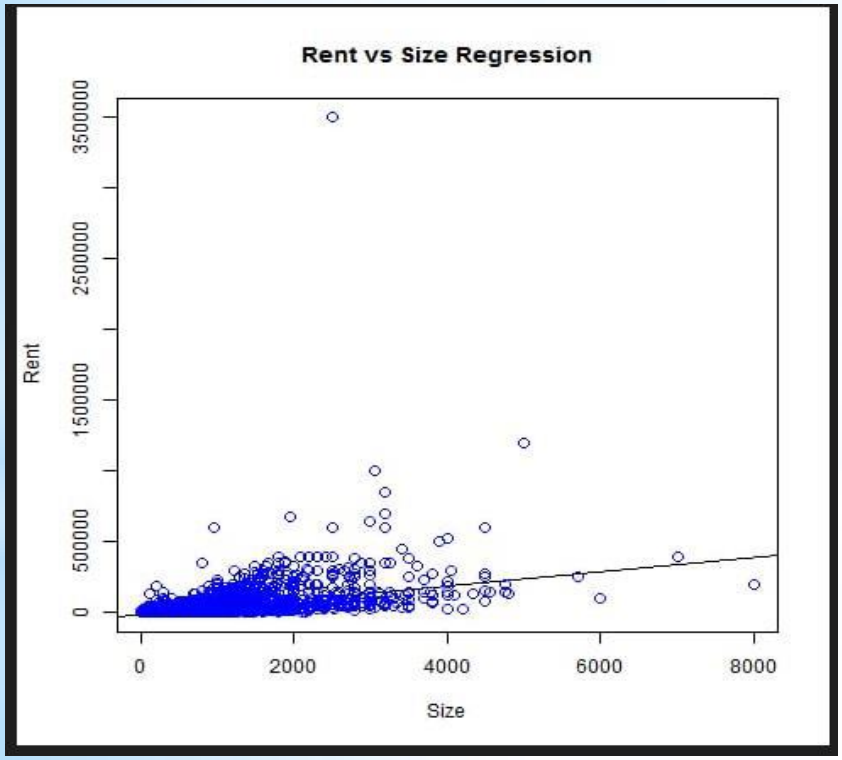
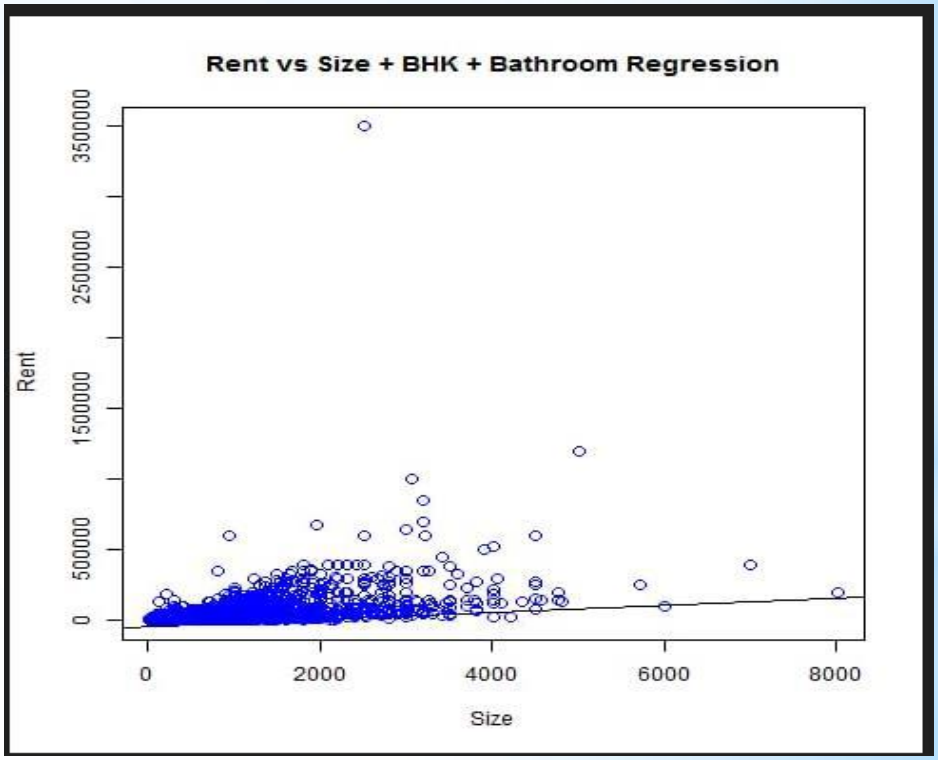

* Progression in Learning(Cont.)



Linear Regression



Multiple Regression

Assessment for Learning

- Based on Work done by student.
- Explanation of Algorithm that applied for analysis of Data.
- Implementation of Code in R.
- Percentage of Accuracy of the Result.

Government Holkar (Model, Autonomous) Science College, Indore (M.P.), India

Department of Pharmaceutical Chemistry

A Participative Learning Pedagogy

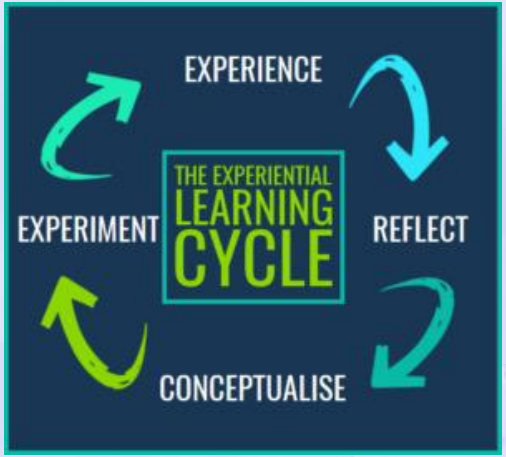
Experiential Learning : Skill Based Practical

Dr. Rashmi Agarwal
Department of Pharmaceutical Chemistry

Experiential Learning : Skill Based Practical

Cultivate, organize and/or manage a business, enterprise or creative idea from development through implementation by creating a consumable product with proper techniques.

- Combines direct experience with focused reflection;
- Builds on past knowledge and experiences;
- Requires active involvement in meaning construction;
- Encourages collaboration and exchange of ideas and perspectives;
- Can take place in the classroom, in the community, or in the workplace



Learning Skills


critical thinking


creativity


collaboration


communication

Life Skills


flexibility


leadership


initiative


productivity


social skills

Brief of Activity: Preparation and Sale of Pharma Products

Department Of Pharmaceutical Chemistry encouraged and guided students to *participate and prepare pharmaceutical products* to sell and earn profit. They *prepared three products in pharma department laboratory ie. cold relieving balm, muscle relaxant and sanitizer each of Rs. 20/- the preparation, packaging, labelling and selling all the work was done by students* the students got very good response from faculties and students and this has developed new enthusiasm amongst the students to become successful entrepreneur.

Process : Preparation and Sale of Pharma Products

Identify Resources and Tools to make the Product

Use Proper Technique in Production to ensure quality and standard of the product

Package ,Label and Make the product ready for consumer for profitable price

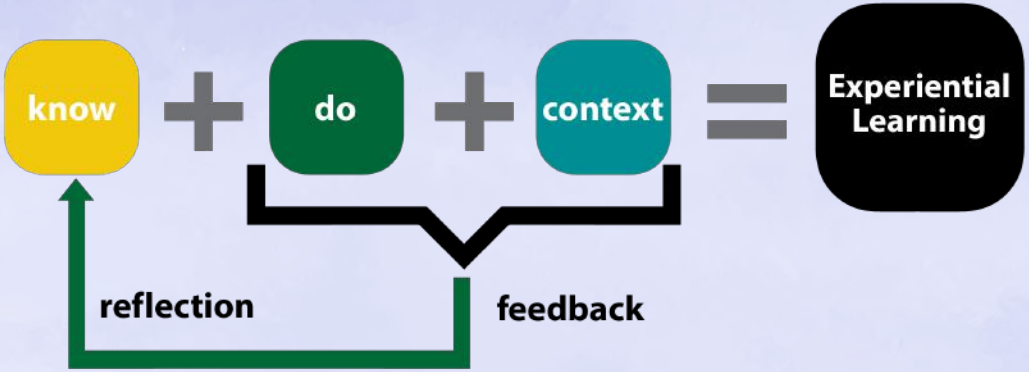
Interact and Generate Business by using People Skills and USP of product

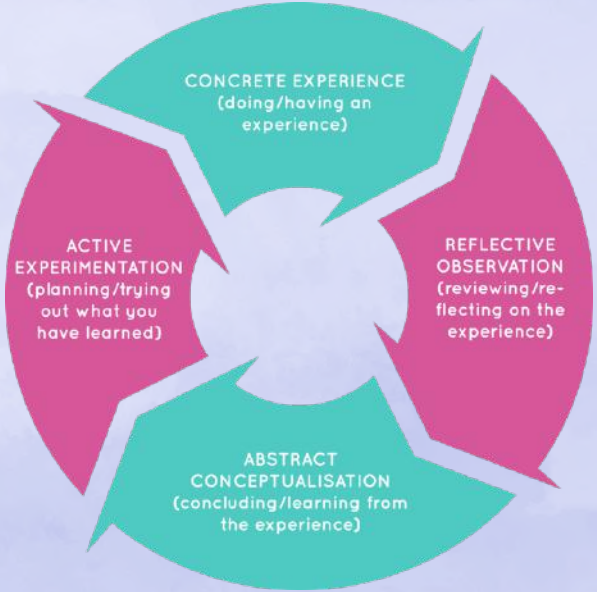
Preparation and Sale of Pharma Products

Experiential Learning : Skill Based Practical

Pedagogy: Entrepreneurial Skill Development

- Aim to provide adequate support and guidance, and allow ample scope of reflection on their practices.
- Make learning more meaningful, and to allow linkages to real-life scenarios
- Building better understandings with interactions and experience





Preparation and Sale of Pharma Products

Experiential Learning : Skill Based Practical

Pedagogy: Entrepreneurial Skill Development

Technical Focus Points

Enabling student with technical knowledge to create a quality product in laboratory

- Know all the factors that determine scale
- Know where and how to develop a product/service
- Know how to set a quality standard and regulate safety

Entrepreneurial Focus Points

Allow the student to sale and market the product to learn business and commercial skills.

- to find different kinds of suppliers of goods and service
- Know roughly how to calculate a break even
- Know how to calculate unit costs on this basis including identification and absorption of all overheads

Outcomes and Assessments

- **One-on-one spontaneous oral assessments with the instructor**
- **Self-evaluation and/or group evaluation of a task performed**

These methods incorporate elements of reflection or self-assessment. In experiential learning, the student manages their own learning, rather than being told what to do and when to do it. The relationship between student and instructor is different, with the instructor passing much of the responsibility on to the student.

Learning outcome:

Technical hands-on experience in creating products and also demonstrate an ability to summarize and present information via an oral presentation/product that meets professional standards, in a professional setting. Thus, students will develop skills and knowledge through their engagement in experiences that connect classroom theory with engagement and situations in a professional setting.

Thank you!

GOVT. HOLKAR (MODEL, AUTONOMOUS) SCIENCE COLLEGE, INDORE

DEPARTMENT OF BIOTECHNOLOGY

PEDAGOGICAL INNOVATION IN CURRICULUM

PRESENTED BY:
ANKITA RAIKWAR
SUSHMITA BAURASI

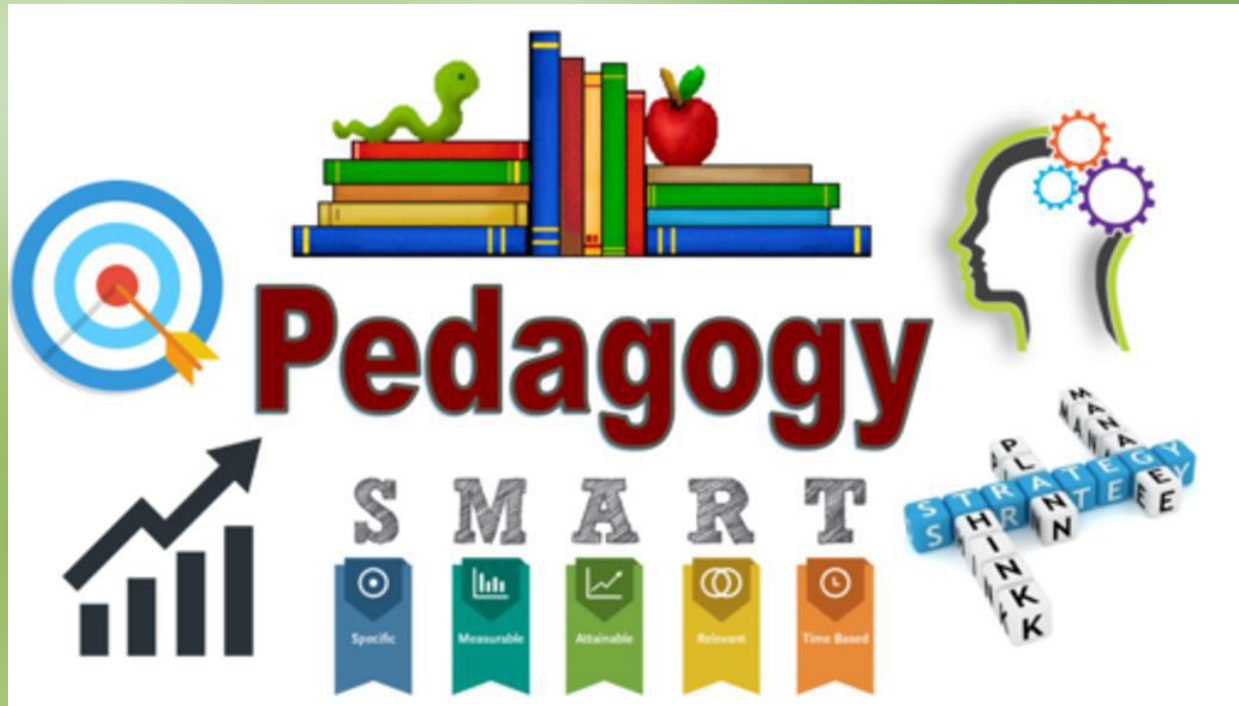
Concept Line

Introduction
Pedagogy used
Learning outcomes
Project-Based Learning Constructivist pedagogy in Teaching- learning process
Activity Topic: Preventive Measures for Global Warming
Case Studies
Progression in learning
Assessment method for learning

INTRODUCTION

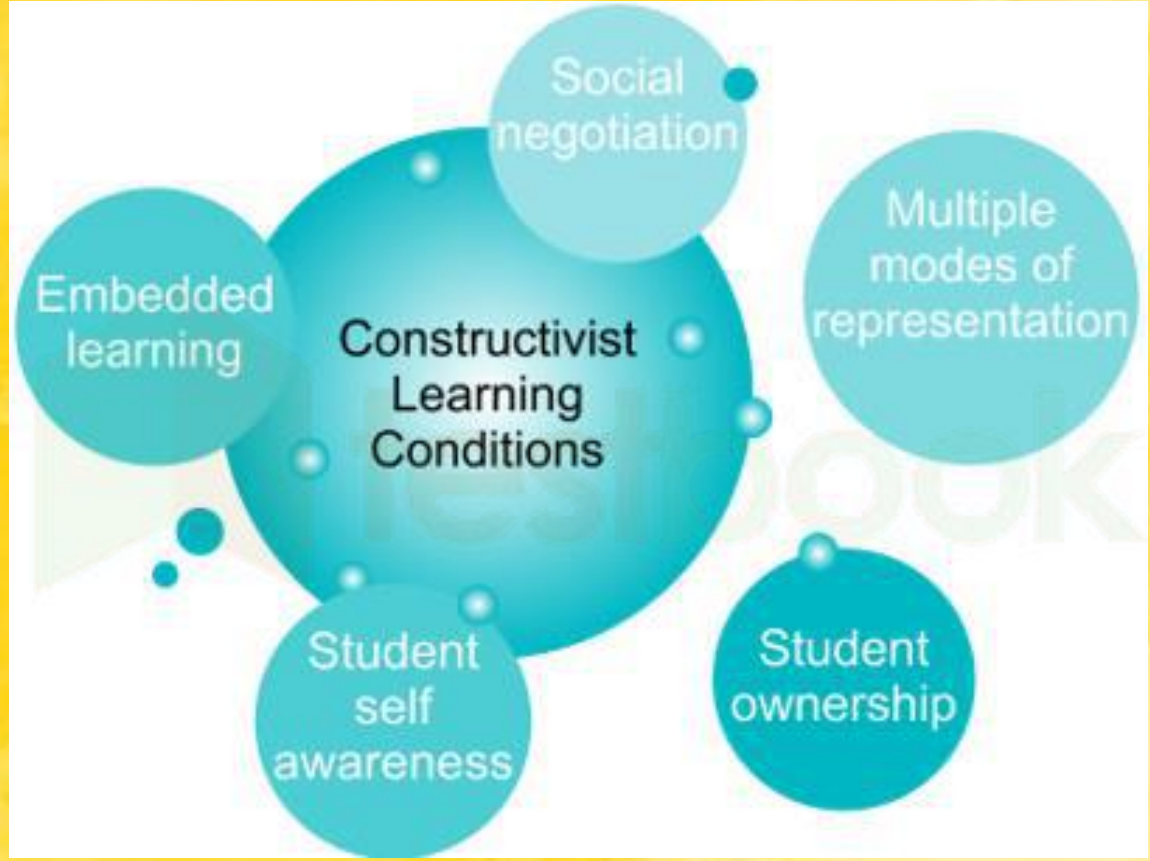
- Pedagogy, the science of teaching and learning, is based on the theories of learning.
- The salient features of 20th centaury's pedagogy:

1. Well structured education system.
2. Instructional objectives.
3. Teacher-centered teaching.
4. Drill and practice.
5. Reinforcement.
6. Memorization.



PEDAGOGY USED

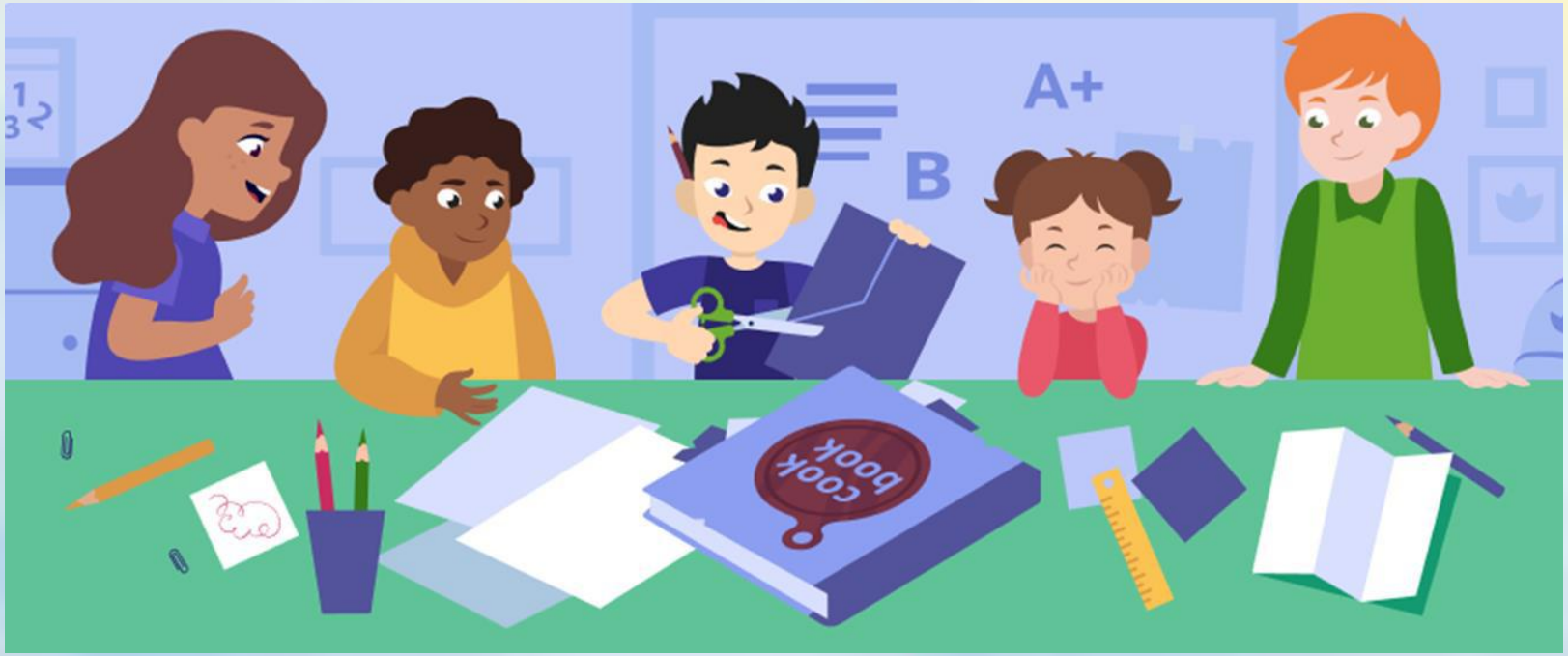
CONSTRUCTIVIST Pedagogy




CONSTRUCTIVISM
Active Engagement
Student Perspecive
Student Experience & Background
Student Constructed
Learning is constructed through meaningful real-world experiences.
Student Culture
Problem-Solving

CONSTRUCTIVIST PEDAGOGY

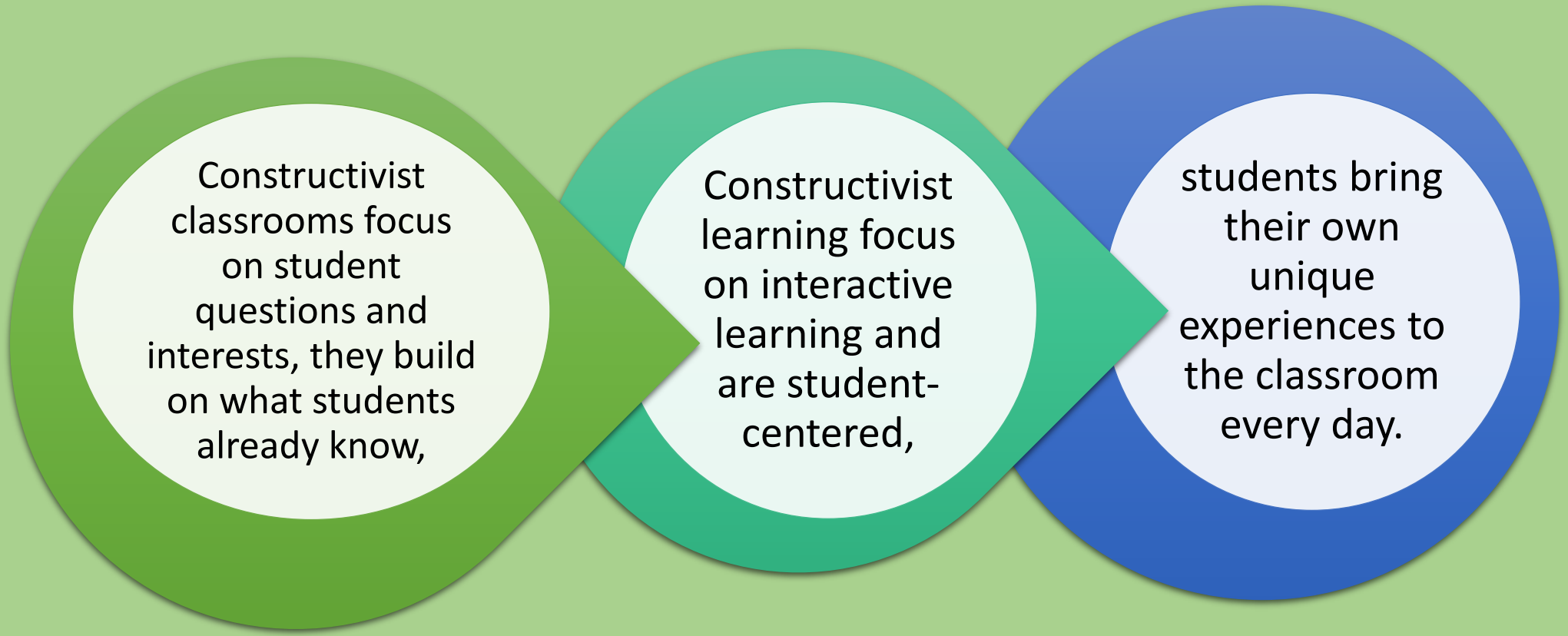
- Constructivist classrooms include students in planning, implementation, and assessments.
- students may work in small groups, access centers and play a more active role in their learning and develop a sense of responsibility.



CONSTRUCTIVIST PEDAGOGY

- A relatively new teaching method, project-based learning falls within the Constructivist approach.
- As the name suggests, in project-based learning students complete projects in which students acquire knowledge, research, think critically, evaluate, analyze, make decisions, collaborate, and more.

LEARNING OUTCOMES



ACTIVITY TOPIC:
PREVENTIVE MEASURES FOR GLOBAL WARMING

GLOBAL WARMING

Definition:

"Global warming is a gradual increase in the earth's temperature generally due to the greenhouse effect caused by increased levels of carbon dioxide, CFCs, and other pollutants. "

Man-made Causes:

Deforestation

Use of Vehicles

Chlorofluorocarbon

Industrial Development

Natural Causes of Global Warming:

Volcanoes

Water Vapour

Melting Permafrost

Forest Blazes

Effects of Global Warming:

Rise in Temperature

Threats to the Ecosystem

Spread of Diseases

Climate change

Preventive Measures:

Plant a tree

Renewable energies

Sustainable infrastructure

Responsible consumption & recycling

CASE STUDIES: GLOBAL WARMING

THE ARCTIC

- NASA is using unprecedented resources to discover how the drastic changes in Arctic carbon are likely to influence our climatic future.
- A recent report found a nearly 10-fold increase in the number of large fires in the Arctic region over the last 50 years, and the total area burned by fires is increasing annually.
- Initial results from NASA's Carbon in Arctic Reservoirs Vulnerability Experiment (CARVE) airborne campaign have allayed concerns that large bursts of methane, a more potent greenhouse gas, are already being released from thawing Arctic soils.

WILDFIRES

- Currently, wildfires are estimated to spew 2 to 4 billion tons of carbon into the atmosphere each year on average — about half as much as is emitted by fossil fuel burning.
- As atmospheric carbon dioxide continues to increase and global temperatures warm, climate models show the threat of wildfires increasing throughout this century.
- In Earth's more arid regions like the U.S. West, rising temperatures will continue to dry out vegetation so fires start and burn more easily.
- In Arctic and boreal ecosystems, intense wildfires are burning not just the trees, but also the carbon-rich soil itself, accelerating the thaw of permafrost, and dumping even more carbon dioxide and methane into the atmosphere.

CASE STUDIES IN INDIA

When the hills shake Major natural disasters in the region over the past three decades:

Nature's fury: Part of a glacier broke off in Joshimath in Uttarakhand's Chamoli district on Sunday, causing a massive flood in the Dhauli Ganga river. ▪ PTI

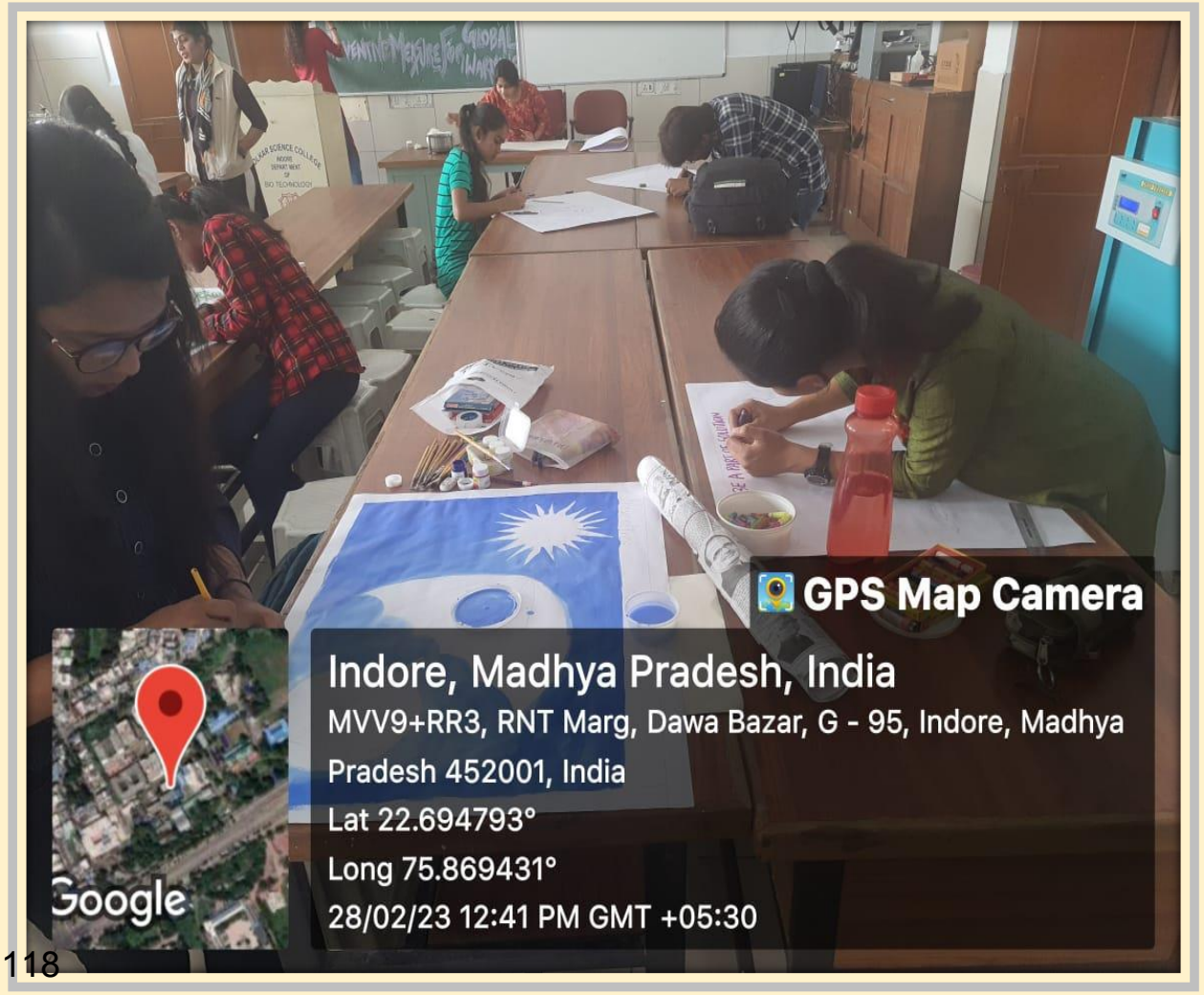
1991: Uttarkashi earthquake — An earthquake of 6.8 magnitude hit the undivided state of Uttar Pradesh in October 1991. At least 768 people were killed and thousands of homes destroyed

1998: Malpa landslip — The small village of Malpa was wiped out in a landslip in which nearly 255 people, including 55 Kailash Mansarovar pilgrims, were killed. The resulting debris partially blocked Sharda river

1999: Chamoli earthquake — An earthquake of 6.8 magnitude hit Chamoli district killing over 100 people. The adjoining Rudraprayag district was also heavily affected. Several ground deformations were reported as a result of the earthquake, and landslips and changes in water flow were recorded. Cracks were observed on roads and on the ground

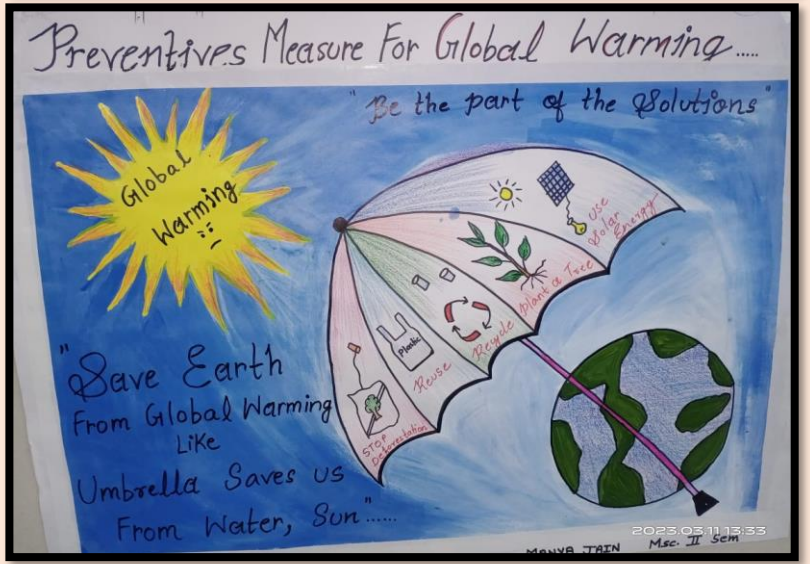
2013: North India floods — In June 2013, a multi-day cloudburst in Uttarakhand caused devastating floods and landslips. According to the State government, more than 5,700 people were presumed dead in the disaster. As bridges and roads were destroyed, more than 3 lakh people were trapped in the Valleys leading to the Char Dham pilgrimage sites

PROJECT-BASED LEARNING CONSTRUCTIVIST PEDAGOGY IN TEACHING- LEARNING PROCESS

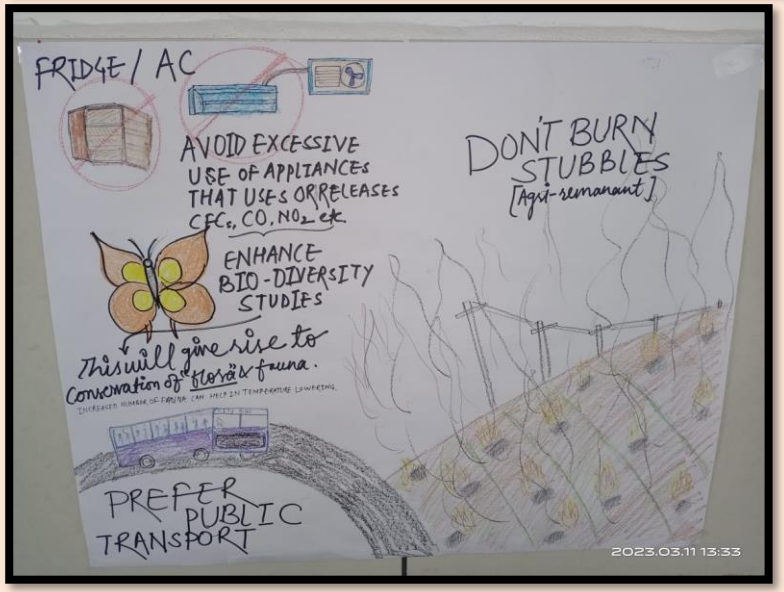


PROJECT-BASED LEARNING CONSTRUCTIVIST PEDAGOGY IN TEACHING- LEARNING PROCESS

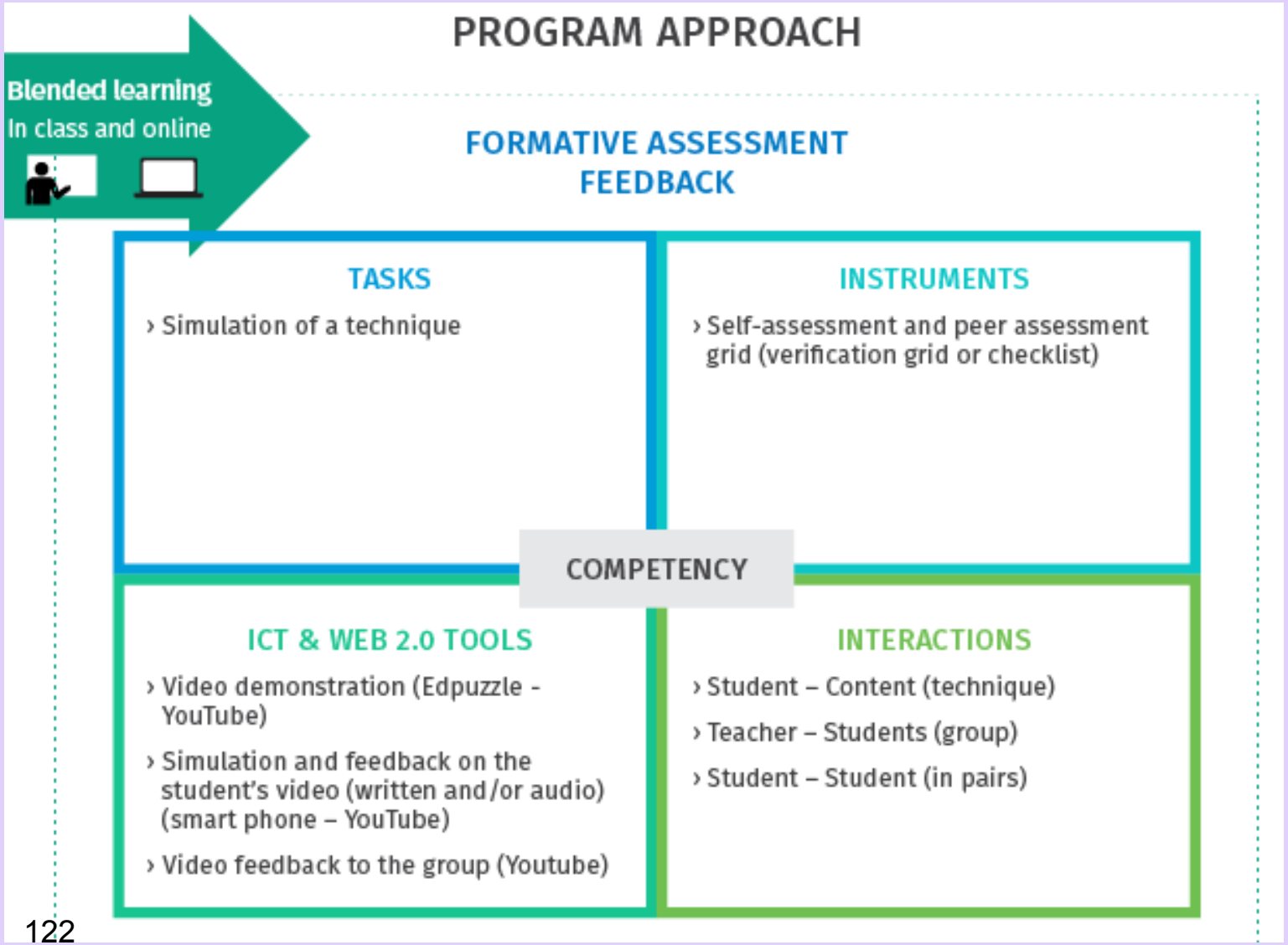
PROGRESSION IN LEARNING- STUDENT'S ACTIVITY



PROGRESSION IN LEARNING- STUDENT'S ACTIVITY



ASSESSMENT METHOD FOR LEARNING



PRODUCTS OF LEARNING	- Written works - Projects - Performance Tasks - Quizzes, MCQs - Use of Technology	- Assessment Rubrics - Rating Scales


Thank you for attention!
Save the environment!

Govt. Holkar (Model, Autonomous) Science College, Indore (M.P.)

Department of Forensic Science

Session - 2021-22

Problem Solving Pedagogy based on Treasure Hunt Activity

Faculties- Prof. Harshita Sonkar

Prof. Shivani Solanki

Concept Line

- Introduction
- Pedagogy used
- Learning outcomes
- Progression in learning
- Sports pedagogy in Teaching- learning process
- Assessment method for learning

Introduction

Forensic Scientist plays a crucial role in the Criminal Justice System. He/she observe the crime scene, identify and collect the evidences which link the relationship between suspect, victim and crime scene. Exactly in the same way treasure hunt activity is played.

In Treasure hunt activity, items/clues are hidden in a specific area for participants who decode the clues and find the treasure. It's aim to get group to try to complete challenges by working as a team and utilising their problem solving skills to come up with strategic plans to help complete the challenges with limited time throughout the activity.

Pedagogy used

Problem Solving, Sports Integration (Experiential Learning).

Learning Outcomes

- It enhance the good observational skills.
- It also help to analyse, Understand, Discover, Explore, Solve problems, Co-operation and Teamwork.
- It develops Patience, Listening skills and Concentration power.

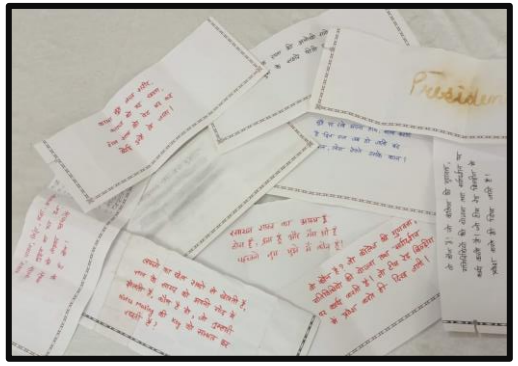
Sports Pedagogy in Teaching- learning process

- Treasure hunt activity enhance the psycho-motor capabilities.
- Boost the self- confidence of the participants.
- It teaches them to interact with each other, understand what the other is saying and try to solve the clues together to win the game as a team.

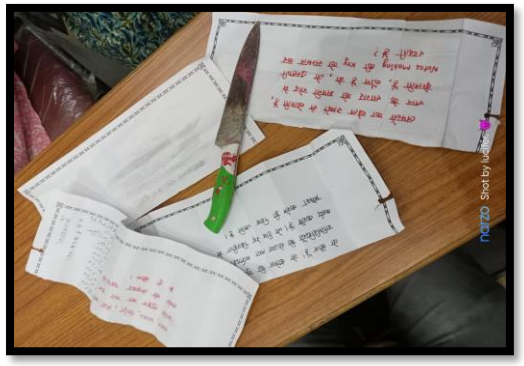
Progression in learning

Two Teams were formed namely Team A (M.Sc. Final Year) and Team B (M.Sc. Previous Year).The Activity started from the mysterious crime scene where initial clue were given to the teams. By solving the given clue, they jumped to the next clue. And then gradually with progression of activity, both the teams reached at the final level which was of reasoning/logical query. By solving the last clue, Team A won.

Starting point -Crime Scene



Clues - Decode by Team A & B



Final Clue - Weapon

Team A Won the activity

Assessment method for learning

- **Assessment of the Activity** was done on the basis of time evaluation where team A was ahead with time from beginning and won the activity.
- **Assessing the Team work :** Given the task of searching by hiding the separate clues at different location.
- **Evaluation of Critical Thinking :** By assigning the clues in the form of puzzles/riddles.
- **Reflection of Intellectual/Problem Solving Skills :** By resolving the difficulties given in the activity.

Govt. Holkar (Model, Autonomous) Science College, Indore
Department of Bioinformatics

Pedagogical Innovation in Curriculum

SUBMITTED TO
Dr KIRAN BILLORE
HEAD OF THE BIOINFORMATICS DEPARTMENT

SUBMITTED BY
PROF. FAIZAN AHMED HILAL
DEPARTMENT OF BIOINFORMATICS

- ✓ **INTRODUCTION**
- ✓ **THE PEDAGOGY USED**
- ✓ **LEARNING OUTCOMES**
- ✓ **PROGRESSION IN LEARNING**
- ✓ **ASSESSMENT METHOD FOR LEARNING**

✓INTRODUCTION

- PARTICIPATIVE LEARNING IS AN APPROACH TO TEACHING AND LEARNING WHICH FOCUSES ON THE LEARNER
- PARTICIPATION ACTIVELY ENGAGES STUDENTS WITH THE SUBJECT MATTER,POSHES THEM TO CREAT CONCEPTS AND FORCES THEM TO SHOW EVIDENCE FOR THEIR CLAIMS PUT SIMPLY, IT MAKES STUDENTS WORK HARDER.

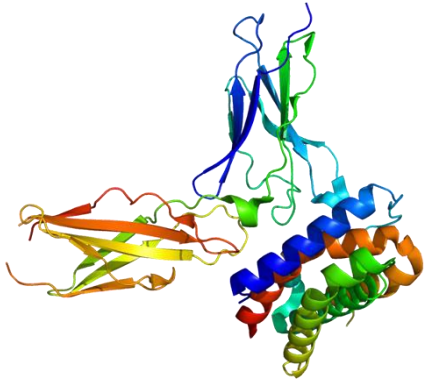
✓THE PEDAGOGY APPROACHE

- ***Experiential Learning***

Experiential learning is an engaged learning process whereby students "learn by doing" and by reflecting on the experience. Experiential learning activities can include, but are not limited to, hands-on laboratory experiments, internships, practicums, field exercises, study abroad, undergraduate research and studio performances.

Well-planned, supervised and assessed experiential learning programs can stimulate academic inquiry by promoting interdisciplinary learning, civic engagement, career development, cultural awareness, leadership, and other professional and intellectual skills.

HOMOLOGY MODELLING



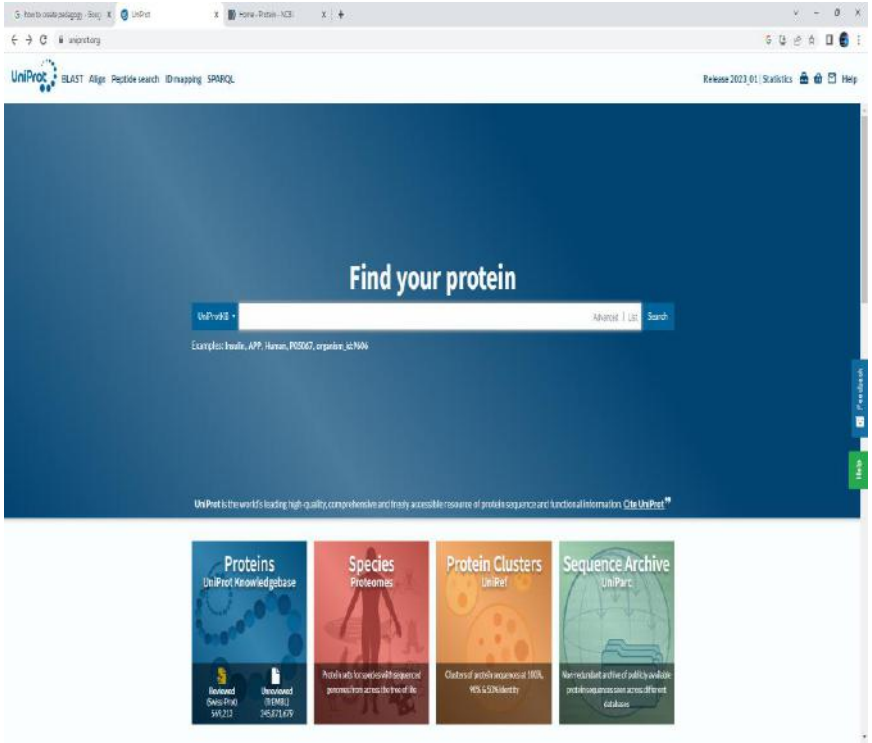
Homology modeling, also known as comparative modeling of protein, refers to constructing an atomic-resolution model of the "*target*" protein from its amino acid sequence and an experimental three-dimensional structure of a related homologous protein (the "*template*").

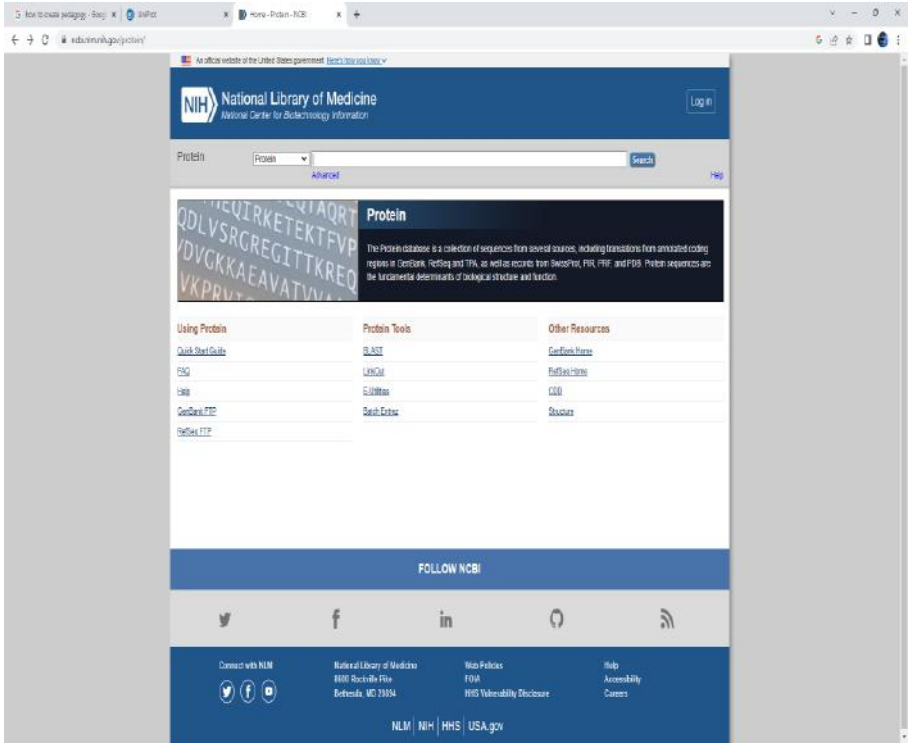
Homology modeling is one of the computational structure prediction methods that are used to determine protein 3D structure from its amino acid sequence. It is considered to be the most accurate of the computational structure prediction methods. It consists of multiple steps that are straightforward and easy to apply

Reference - https://pubmed.ncbi.nlm.nih.gov/

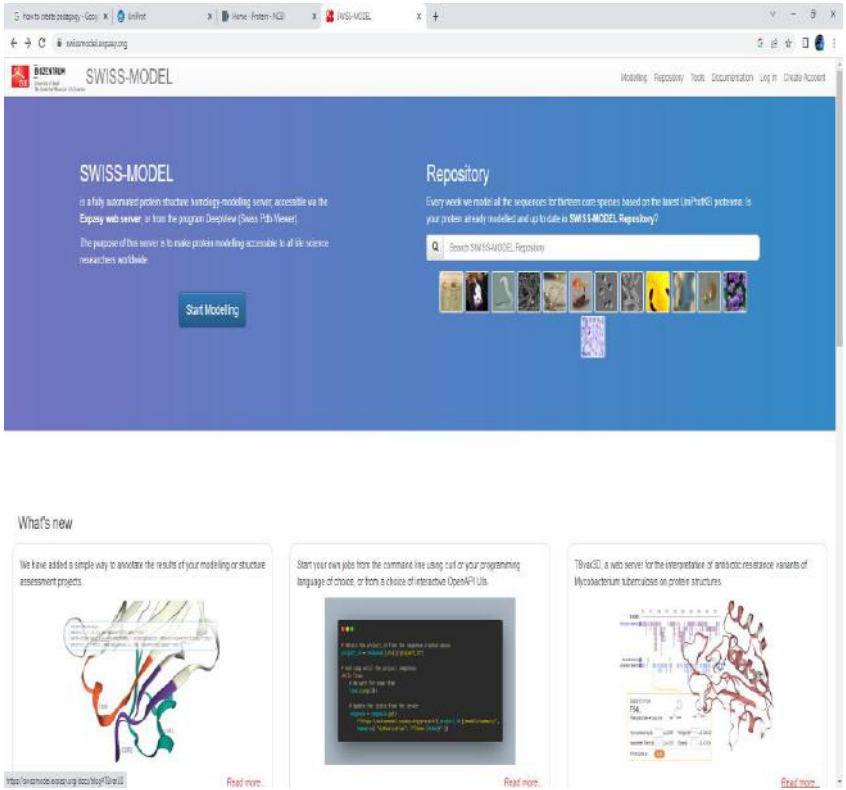
135

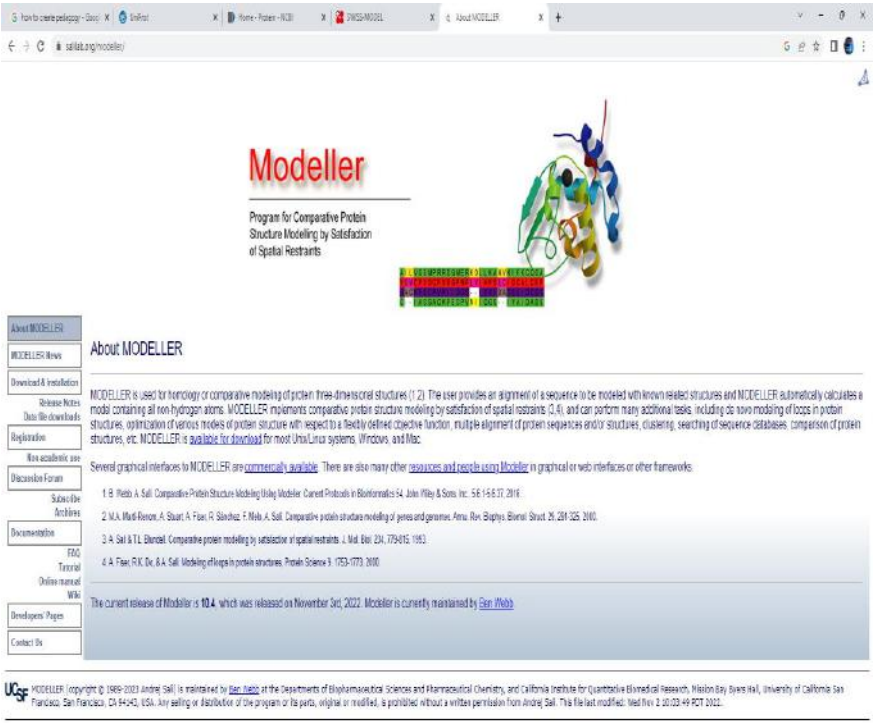
DATABASE USED FOR RETRIEVING PROTEIN SEQUENCE



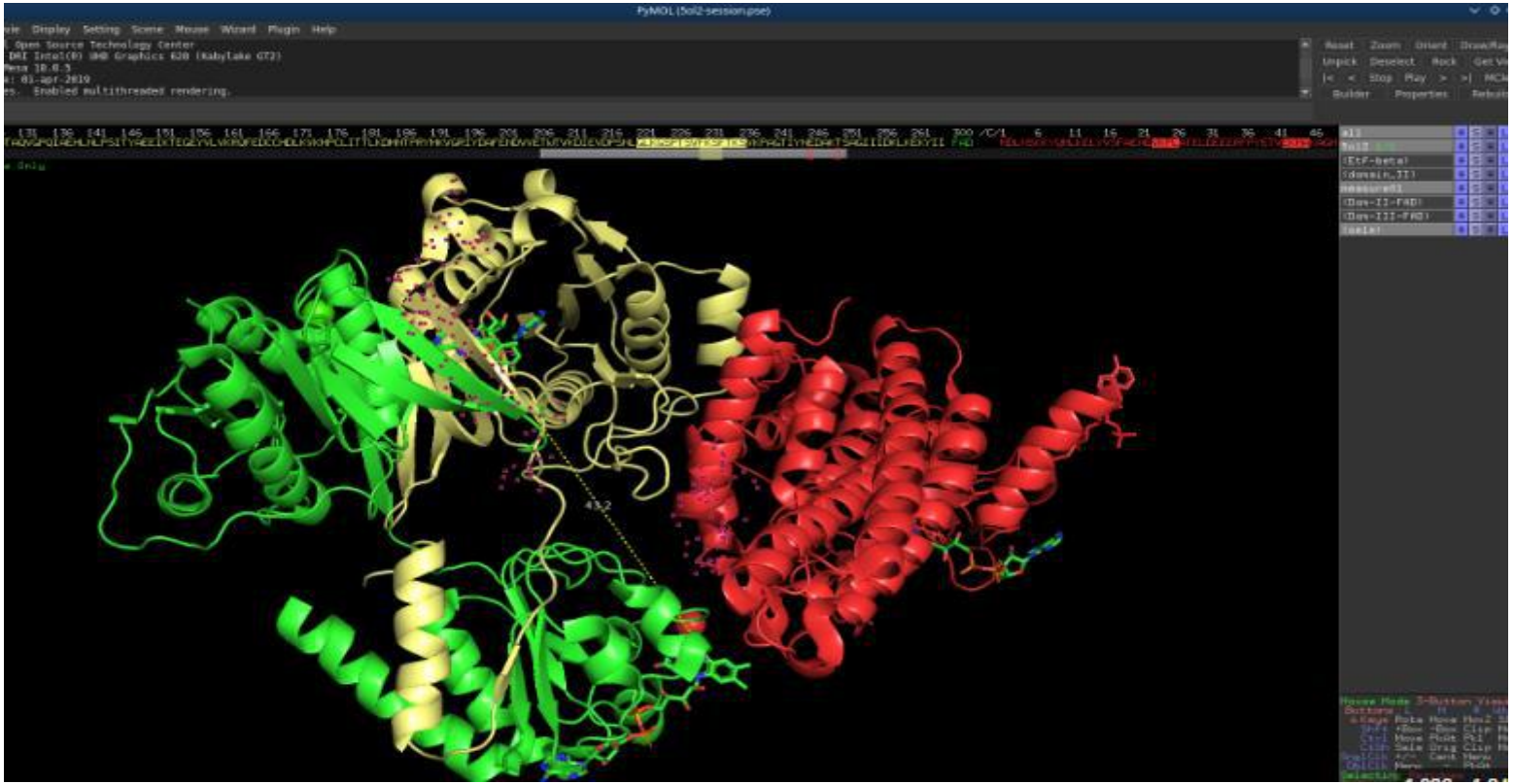


TOOLS USED FOR PREDICITING PROTEIN SEQUENCE





TOOLS USED FOR VISUALIZING STRUCTURE OF PROTEIN



THE PEDAGOGY USED

Target sequence

↓

Template recognition

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Alignment

↓

Backbone generation

↓

Loop modeling

↓

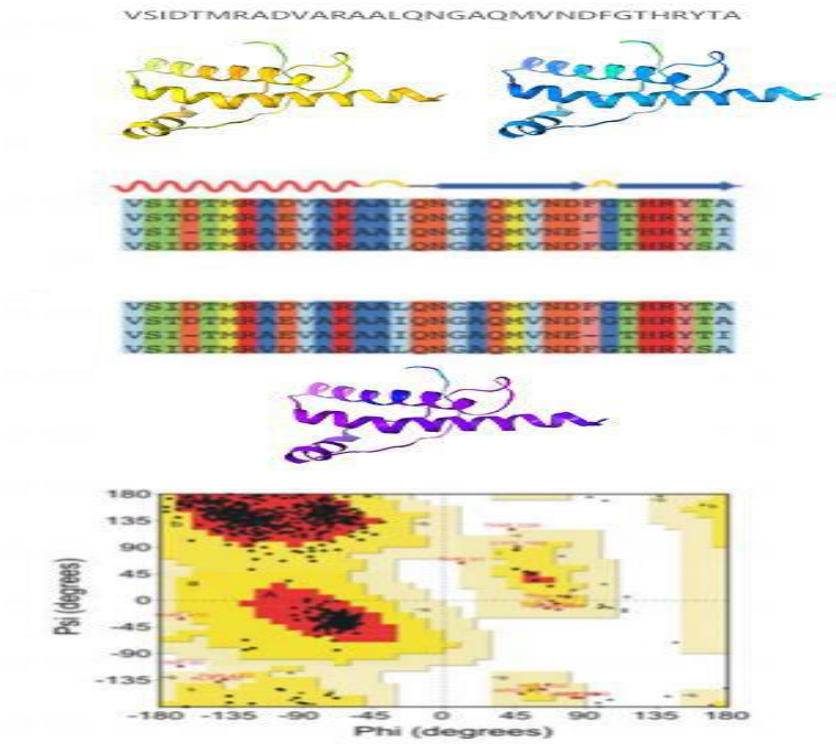
Side-chain modeling

↓

Model optimization

↓

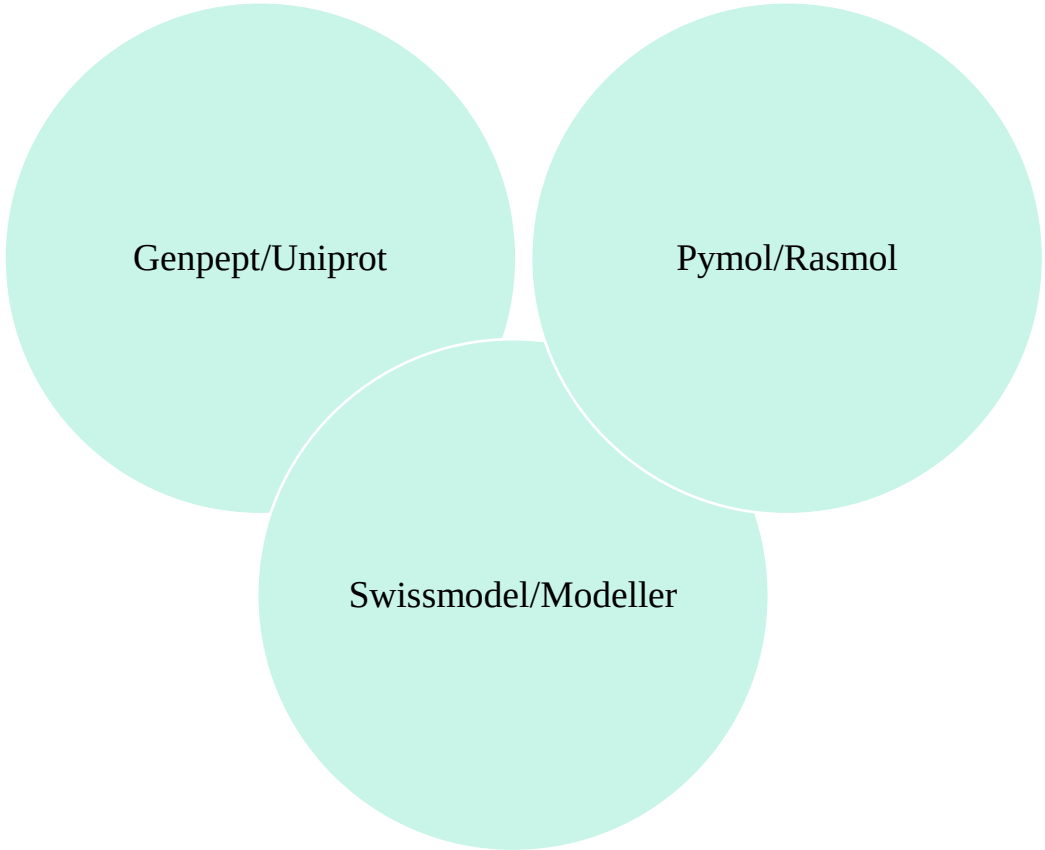
Model validation



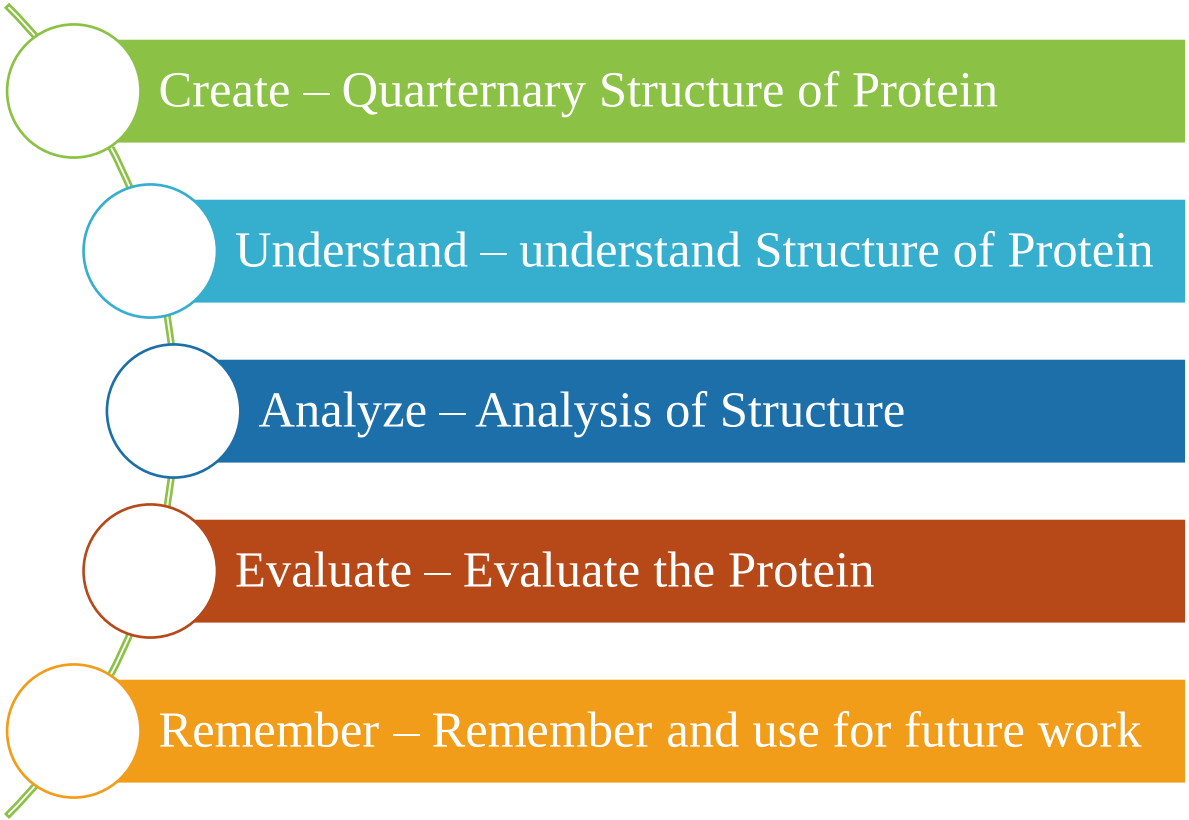
LEARNING OUTCOMES

- ✓ **Understand the tertiary structure prediction of proteins**
- ✓ **Helps student to understand the function of protein on the basis of 3d structures.**
- ✓ **Getting Knowledge about different types of motifs and domains.**
- ✓ **Predicted Structures used in Protein-protein docking , Protein – DNA Docking , etc.**
- ✓ **This predicted structures used in Molecular docking**
- ✓ **This Predicted Structures used in Computer Aided Drug Discovery**

ICT Integration



Bloom's Taxonomy

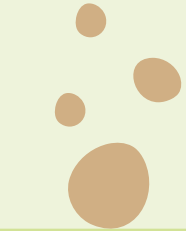


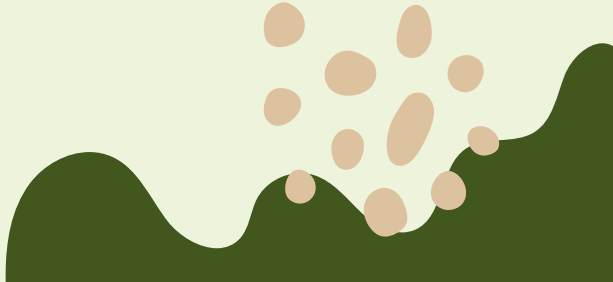
ASSESSMENT METHOD FOR LEARNING

Assessment of the activity was done by asking about prediction of 3d structure of proteins , homology modelling & its application.

Govt. Holkar (Model, Autonomous) Science College, Indore
Department of Botany

Pedagogical Innovation
in
Curriculum





An Educational Tour To Badgonda Nursery

ASSESSED HARD SPOTS FOR STUDENTS

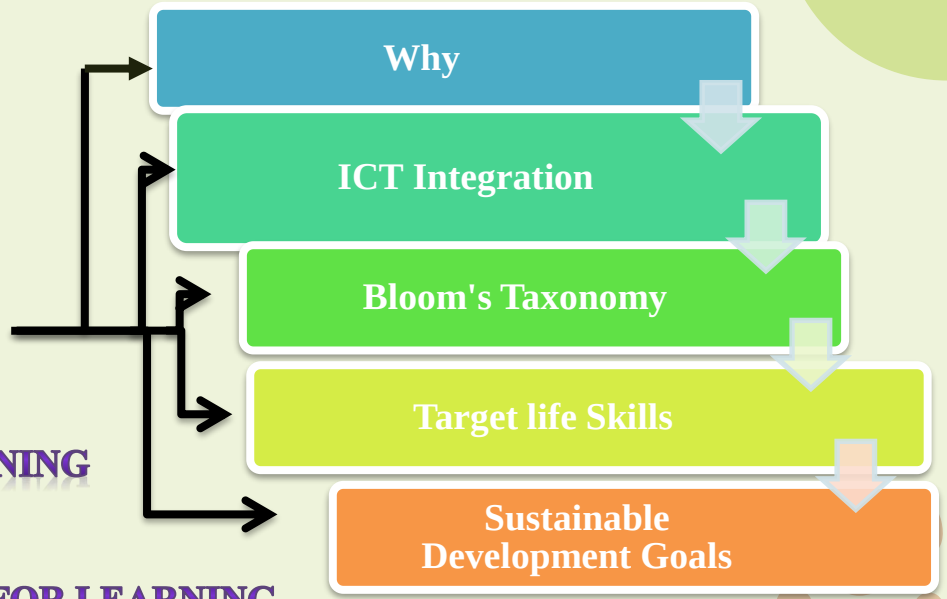
INTRODUCTION

THE PEDAGOGY USED

LEARNING OUTCOMES

PROGRESSION IN LEARNING

ASSESSMENT METHOD FOR LEARNING



ASSESSED HARD SPOTS FOR STUDENTS

- Analyze Taxonomic Hierarchy and Identification of Flora.
- How to Collect the plants.
- Preparation of Herbarium.
- To learn Methodology of Vermicompost preparation.
- Methods of “Jeevaamrit” (soil fertility booster) preparation and its uses.
- Learning Nursery management skills.
- Explore and Analyze RET (Rare, Endangered and Threatened) plants.

Introduction

Department of botany, Govt. Holkar (Model Autonomous) Science College, Indore on November 18, 2022 visited Dr. Bheemrao Ambedkar Nursery, Badgonda (M.P.). Principal , Dr. Suresh T. Silawat and H.O.D Dr. Sanjay Vyas wished all the students for best and safe journey.

Students were Accompanied by the Professors and staff members, Dr. Uday Chitnis, Prof. Amiya Pahare, Dr. Seemawati Sisodiya, Dr. Pramila Sadhav , Prof. Sarika Tundele, Dr. Krati Ghavri, Prof. Poorva Shrivas and Mrs. Kavita Mujalde.

THE PEDAGOGY USED

Educational Tour

Experiential learning

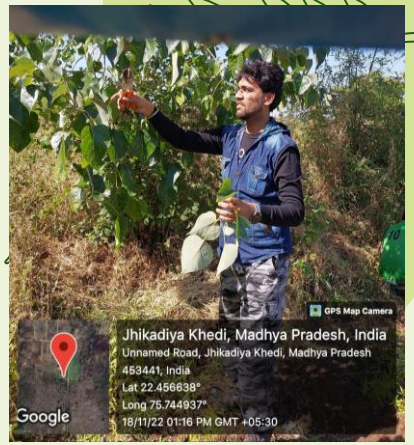
Student-centric methods
for teaching and learning.

LEARNING OUTCOMES

Why??

- Vermicomposting
- Taxonomic Identification
- Herbarium preparation
- Plant collection
- Conserve RET
- Nursery management skills

Vermicomposting Unit



Plant Collection

ICT Integration

PlantNet (Mobile Application)

PlantSnap (Mobile Application)

Google lens

iNaturalists (Mobile Application)

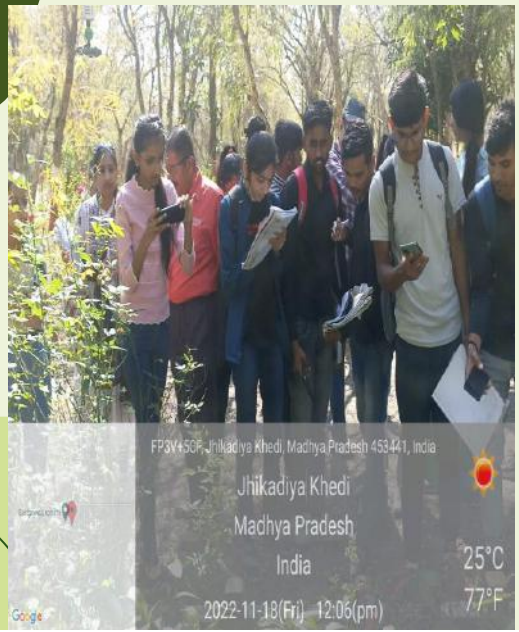
Bloom's Taxonomy

- Understand- Plant identification
- Remember – Vermicomposting method
- Analyse – RET Species
- Apply – Herbarium preparation
- Evaluate – Flora Identification through ICT

Target life Skills

- Nursery management skills
- Awareness towards Environment protection
- Proficiency in organic manure Preparation
- Develops sensitivity towards nature
- Learn Team work
- Learn to be Accommodative

Sustainable Development Goals



Observation of Endangered Plants

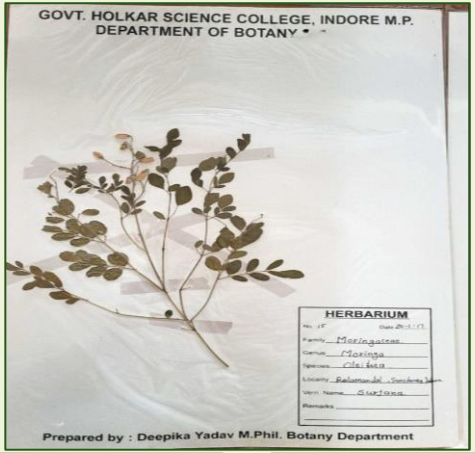
- Biodiversity conservation
- Awareness towards RET
- Knowledge about medicinal value of flora

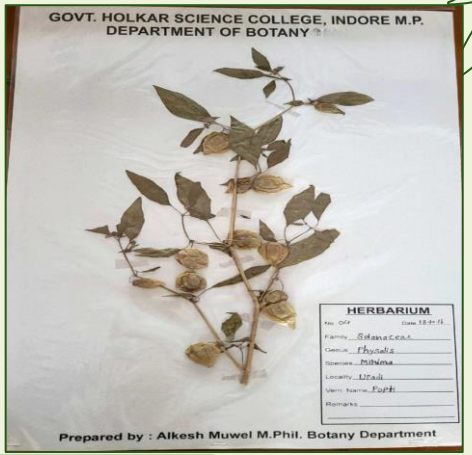
Observation of Endangered Plants

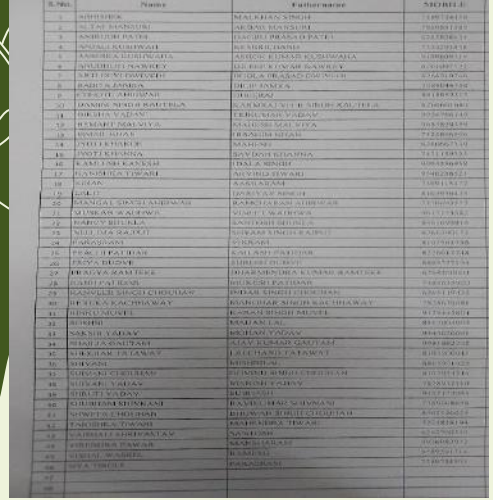
Progression in Learning

- Knowledge about Plant collection
- Herbarium preparation skills
- Awareness towards biodiversity conservation
- Understanding of horticulture techniques

ASSESSMENT METHOD FOR LEARNING







List of students

Herbarium Preparation