Pedagogical initiatives by individual faculty as a part of 'Student Centric Learning'

1. Content Delivery through animated videos

The lectures and practical demonstrations are conveyed through youtube channel. Animations are involved in designing the videos. Content is displayed on the youtube channel and reviews & comments are addressed. Significance of this method are that animations and videos boosts conceptual clarity. It is an easier tool for last minute revision. The play, pause and rewind option adds convenience in learning. Missed lectures or practicals can be understood with ease and Wide range of audience can be addressed and their queries can be addressed.

PO's attained: PO1, PO2, PO3, PO4,PO6, PO7, PO8, PO9, PO10, PO11

2. Student-Centric Learning:

Students have been assigned seminars on different topics prescribed in the curriculum. Besides, the students are given complete guidance of the exhaustive literature required for the seminar preparation. Students are asked to give powerpoint presentations in the class. Every powerpoint presented and elaborated by the presenter is rigorously discussed among the students. Students are asked to prepare a thorough presentation of the topic by using powerpoint presentation. During presentation, the other students of the class are permitted to ask questions regarding their queries. Meanwhile the discrepancies noticed in the presentations were compensated by the faculty by additional inputs. Thus the faculty has facilitated to present the topics in the form of lecture or presentation. In this exercise the student apply critical thinking and lateral thinking to make subject more precise and concise. Here, students meticulously evaluate, analyze, consolidate and integrate the information to simplify various concepts. Hence, this is a new age learning method where students are made autonomous to develop insight of the subject.

By applying this method, students become technosavy and familiar to the use of ICT solutions in learning. The participation of students in discussion enhances the interactive and participative learning. It also boosts the communication skills of learners thereby enhancing the knowledge and learning level of the learners. This method boosts confidence, conceptual understanding and application skill in students.

PO's attained: PO1, PO2, PO3, PO5, PO6, PO8, PO9, PO11

3. Learning by doing:

A: Herbaria preparation-

This is a unique method of learning where students have been asked to visit fields for the collection of medicinal plants. In the beginning, students are guided about selection, collection and observation of medicinal plants. After collection of the specimen, students have been demonstrated regarding preservation techniques of the plant specimen. Students are asked to mount the dried specimen and record the field characteristics. Hence, every herbarium is a voucher specimen for authentication and future reference.

This method of preservation is extremely important since researchers and Ayurvedic practitioners across the area visit the herbarium as a reference material and it provides an ideal platform for collaborative and interdisciplinary learning.

PO's attained: PO1, PO2, PO3, PO4, PO6, PO9, PO11

B: Preparation & preservation of permanent slides-

In this method, students are guided for the study of unique internal characters of various crude drugs. Since, the characters are highly conservative, constant, consistent and characteristic, they are extremely important for the authentication of herbal crude drugs.

The method consists of preparation of permanent slides by taking transverse sections. The students are given demonstration about the section cutting, staining and techniques of preparation of permanent slides. The slides have been observed under digital microscope and photographed, along with its detailed description of diagnostic characters. These slides are often flashed as templates before performing the practical for new entrants for their ready reference and easy of doing.

This method is extremely important to observe the live field characters of different stages of the growth of crude drugs which is useful for monographic study.

PO's attained: PO1, PO2, PO3, PO4, PO6, PO9, PO11

4. Self Learning:

This is an advanced method of learning where students are chased and challenged to apply their knowledge and skill to make the subject more easy, interactive and understandable. In this method, group of students identified & topic incorporated in curriculum are assigned to them, besides inputs of literature are also provided to group to ease their work. Students refer different literature on principles, procedure and mechanism of reaction. Students have developed video

clips of concern topic of chemistry to make subject understandable and interesting. In this process students apply different methods to elaborate, explain and simplify facts more precisely and concisely. Moreover students get acquainted with exhaustive literature available in subject and cultivate habit of self-learning. Videos are uploaded on YouTube to provide open accessibility & it is observed that the work carried out by students got very favorable comments and "likes" in this regards.

PO's attained: PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10 & PO11.

5. Flipped classroom:

Flipped classroom is a type of Self learning where Instead of students being taught the foundations of a topic in the classroom and then using homework and assignments to individually expand and explore the topic, the flipped classroom model requires students to acquire foundational knowledge through self-study at home before using class time to delve deeper into the topic under the guidance of the teacher. The pandemic caused a surge in the use of the flipped classroom model, proved that this pedagogical approach can transcend time and location, offering unparalleled flexibility for all involved. The key benefits of flipped classroom are-

1. Flipping allows students to learn at their own pace.
2. Flipped learning is customized, active, and engaging.
3. Flipped lecture videos help students review for exams and master the content.
4. Flipped content can be richer through curation and continuous improvement.
5. Students in flipped classrooms may show better learning outcomes.

PO's attained: PO1, PO2, PO3, PO4,PO6, PO7,PO8,PO9, PO11

6. Use of Multiple Choice Questions (MCQ) Flash Cards:

In this method of learning, students have been asked to design flash cards with multiple choice questions on different topics incorporated in curriculum. Every student has designed five flash cards with different MCQ questions of the topic allotted to them. In this method, learners are motivated; stay focused and keeps moving forward. Moreover, this method eases faculty to evaluate learning progress and outcome. This method promotes inquisitiveness, logical reasoning and in-depth knowledge.

PO's attained: PO1, PO2, PO3, PO4, PO8, PO11

7. ICT-enabled learning:

This is a new age learning method of teaching. In this method, conventional method is adopted for the delivery of lecture. However, certain steps in the chapter like flowchart, complex diagram, graph, manufacturing process, drug delivery etc are intricate steps to convince students. It is beyond their scope to grasp the concept by conventional method. At this juncture, video clips of above mentioned concepts are flashed in the classroom to make a subject easy and understandable. In this way, conventional method has been blended with advanced method by using Information and Communication Technology (ICT) solutions in order to boost the knowledge, analytical ability and usage of modern tools.

PO's attained: PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO11

8. Blended learning:

Blended learning is an amalgamation of face to face learning and using multimedia i.e. use of animated video clips to make the learning more meaningful and understandable. In this method, the face to face discussions are blended with animated video clips when the concept or mechanism is very intricate and difficult to understand by learners. In this context, blended learning is more effective and boosts the conceptual understanding of students. The face to face learning blended with multimedia makes the learning more meaningful, fruitful, and result oriented. In this method, it has been observed that students develop critical thinking and also use lateral thinking due to the exposure of multimedia techniques.

PO's attained: PO1, PO3, PO4, PO6-PO9, PO11

9. Quick Review Method:

This is a unique method of the compilation of the information in a more precise, concise and condensed form. In fact, it is abstract information depicted to get the overview of the subject at a glance. This method is referred as a ready reckoner to understand the entire scenario of the concept at a stretch. This method is learner centric teaching method which may be practiced for all the subjects and it has helped to improve the core ideas of the specific concept. This method promotes self learning, analytical ability and lateral thinking. Moreover it has enhanced competence and confidence of the learners.

PO's attained:PO1, PO2, PO3, PO5, PO7, PO8, PO11

10. Model Making

Model making as a teaching-learning method bridges the gap between abstract theoretical concepts and tangible understanding. It not only enhances students' academic performance but also cultivates essential skills like critical thinking, problem-solving, and creativity, ensuring a holistic learning experience. This approach involves designing and constructing 3D molecular models of various compounds as well as instruments used in chemistry lab, enabling students to grasp the intricacies of bond angles, configurations, conformations, and dimensions, which are difficult to interpret through traditional 2D representations and enhances students' understanding of the working principles, design, and functionality of complex equipment which help in fostering a deeper comprehension of laboratory techniques and instrumentation. It transforms passive learning into an interactive and hands-on experience, deepening conceptual understanding. This method helps in enhancing fine motor skills, creativity, spatial reasoning and encourages teamwork, communication, and project management during group activities.

PO’s attained: PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO11

11. Differentiation Method

Differentiation in teaching and learning is an approach, assign task to students based on their specific academic abilities and their learning needs. Differentiation that tailors instruction to accommodate the diverse needs, learning styles, and abilities of students. The goal is to provide equitable learning opportunities for all students, ensuring that each individual receives the support they need to succeed. Differentiation can be applied in various ways, including adjusting content, process, product, and learning environment. In conclusion, differentiation is a powerful teaching strategy that helps ensure all students can learn effectively by addressing their diverse needs, learning preferences, and abilities. By using various approaches to modify content, process, product, and environment, educators can create a more inclusive and supportive classroom experience.

PO’s attained: PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO11

12. Mind Map Method:

Mind Mapping is a learning technique which uses a non-linear approach that encourages the learner to think and explore concepts using visual-spatial relationships flowing from a central theme to peripheral branches which can be inter-related.

The great advantage of a Mind Map is that it literally "maps" the way a person's brain sees and creates connections; once mastered, it brings incredible clarity and ease to decision-making process, using all of the ways the brain processes information - word, image, logic, number, rhythm, colour and spatial awareness, so that the person is literally thinking with his or her whole brain. Because of these benefits, the use of Mind Mapping holds promises as a technique to aid students in learning.

PO's attained- PO1, PO2, PO6, PO7, PO8, PO9, PO11

13. Collaborative Learning:

This method of teaching and learning has been implemented in theory as well as practicals to enhance and improve the learnability of students. In this method a group of five students has been identified in which three students were advanced learners and two were slow learners based on the overall performance of the students. At the outset, topics of the theory and practicals have been sorted out from the curriculum. The students were asked to select the topics of their choice in order to make the process easy and practicable. Besides the topics, students were also given exhaustive literature of the concerned topic for each group. They were also given proper guidance regarding planning, design and implementation. Moreover, students were given understanding about the benefit and outcome of this method. After the completion of illustrative charts of the topics distributed to different groups of students, the charts are evaluated for its precision. Subsequently students are asked to present these charts to the class. Before presentation, all five students of the group have mutually consulted and decided to present the specific part of the topic as per their convenience. During presentation the other students are given time to ask questions about their doubts. Lastly the whole exercise has been video recorded for the future use as a source of motivation and information.

This method of teaching-learning has enhanced knowledge, planning ability, communication skill, leadership, conceptual clarity and collaborative learning. Lastly the slow learners have been improved and enhanced their learning competency.

PO's attained: PO1, PO2, PO3, PO5, PO8, PO11

14. Graphical Abstract Designing:

This method is applied for experiential learning. The detailed process is explained to students at the start of practical. Experiment is performed by students under the guidance of the teacher. While performing practical, photographs are taken & maintained for each step. All photos are arranged as per appropriate sequence along with caption for each step by students to make graphical abstract. All the graphical abstracts are prepared under the guidance of concerned teacher. The color prints of all abstracts are attached in journal. The objectives for this method are to develop presentation skills amongst learners, collaborative work culture, to involve students for better cognition, to express their methodology in concise manner.

PO's attained- PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO9, PO11

15. Case Based Learning

The Subjective, Objective, Assessment and Plan (SOAP) Note is an acronym representing a widely used method of documentation for healthcare providers. The SOAP note is a way for healthcare workers to document patients' clinical data in a structured and organized way. It reminds clinicians of specific tasks while providing a framework for evaluating information. It also provides a cognitive framework for clinical reasoning. The SOAP note helps to guide the healthcare workers use their clinical reasoning to asses, diagnose, and to treat a patient based on information provided by them. SOAP notes are an essential piece of information about the health status of the patient as well as a communication document between healthcare professionals. The structure of documentation is a checklist that serves as a cognitive aid and a potential index to retrieve information for learning from the record.

PO's attained- PO1, PO3, PO4, PO5, PO6, PO8

16. Survey Based Assignments

At undergraduate level, Students study, formulate and evaluate conventional dosage forms. Such conventional dosage forms are easily available in market and students are well exposed to them quiet well as everyone is buying and using this conventional dosage form routinely. But same is not true when it comes to the Novel Drug Delivery Systems (NDDS). So the prime objective of this method is to make students aware about the current status of Novel DDS in market. The students were allotted a certain type of DDS which is categorized as novel. The students need to

go through in detail about theoretical aspects and prepare an assignment. Students collect data about the available marketed products for the allotted DDS through using survey method. This acquaints students to therapeutic categories of drugs converted in NDDS, formulation aspects, applicability, prices, and current status.

PO's attained: PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 and PO10

17. Game-based learning

Game-based learning (GBL) involves adding game elements to non-game activities to encourage engagement. Pharmacy curricula are required to incorporate active learning to meet accreditation standards. The literature supports that well-designed GBL holds the attention of students and improves knowledge in some instances. Furthermore, these adaptable experiences can be leveraged for a variety of content areas in pharmacy education. Some activities utilized by educators require large amounts of technological expertise, while others involve minimal use of technology. Game-based learning (GBL) involves adding game of structures of drugs and mode of action of drugs. In this method we design game by preparing blocks of fictional groups of drug molecules. Students must fit appropriate block at correct position so that correct structure of drug must formed. In other game blocks of differ stages of mode of action have prepared, student must ask to arrange all blocks according to proper sequence, so correct mechanism should be got for particular class of drugs. In this method students are more focused engaging self-motivated for getting insight knowledge of the subject.

PO'S attained: PO1, PO2, PO3, PO4, PO7, PO8, PO10, PO11