



SGT UNIVERSITY

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Pedagogic Methods & Implementation policy

Registrar
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Policy for various Teaching Methodology used in different programmes

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1. Introduction/Preamble

Teaching is a one-way communication by an Instructor wherein knowledge is imparted to the listeners/learners. But it seldom determines, the amount of knowledge acquired by the learners. So now a days, the word teaching is seldom used alone. It is used along with learning, as the most accepted criterion for measuring good teaching is the amount of student learning that occurs.

The education process in our nation as well as globally is going through a paradigm shift wherein stress is laid on the "outcome based education" i.e the entire teaching learning process for the learners has to be framed keeping the intended outcomes in mind.

The attainment of outcomes by the teaching process are largely determined by the teaching method employed by the instructor/teacher.

Hence, it is imperative that appropriate teaching methods or pedagogical tools are used by instructors to derive the best learning outcomes. Moreover, the National Educational Policy 2020 lays due emphasis on the incorporation of student centric pedagogy and learning process. Therefore, the educational institutions are required to lay down specific guidelines about the various methods and tools that can be used by their faculty to impart the necessary knowledge, skills and attitude to the learner.

Thus, keeping in view, SGT University has laid down these guidelines for the use and adoption of specific pedagogic practices by the faculty for the best learning outcome of the learners.

2. Scope of Policy

This policy is applicable to all the teaching faculty of the University and will serve as the reference for the faculty members to understand the principles of the pedagogic practices that are advocated by the University.

Teaching pedagogy however is dynamic and ever changing depending on the needs of the learner. So, it is strongly urged that faculty members need not limit themselves to only the methods mentioned in this policy but continue to innovate new methods and adopt pedagogic practices that are best suited to their discipline and to their learners.

Since our SGT University is a multi-disciplinary University catering to medical, non-medical and humanities specialities. Naturally, there will be diversity in the pedagogical practices. There may be certain methods that are applicable to only one group of faculty. So, this policy will just serve as a framework for the pedagogic principles that are followed and emphasized by the University.

3. Rationale and Objective

The education system worldwide has seen the shift from being a "teacher led or teacher centric" system to a 'student/learner centered' system. The teaching and learning process has changed from an Instruction paradigm to a learner paradigm

where learners are given charge of their learning process and teachers act as facilitators for them, guiding them during their learning process. The student centered system allows the students to choose their courses and participate in their learning process. This system is strongly advocated in the National Educational Policy 2020 circulated by the Ministry of Human Resource Development, Government of India. The adoption and implementation of student centered and participatory learning techniques requires a change and flexibility in the curriculum, pedagogic practices and assessment techniques. Therefore, it is pertinent that our University also adopts the principles and practices of student centered learning as envisaged in NEP. Also, the COVID-19 pandemic led to a major shift in the education process from being offline to a complete online system with tremendous change in the existing pedagogic practices that were followed in the University.

This policy document is therefore prepared to outline the various student centric and contemporary methods of teaching that are being adopted and advocated by our University. The objective of creating this policy is to ensure the uniformity in the pedagogic principles throughout the multiple faculties of University even when different methods may be adopted by different faculties. Also, it aims to lay down a framework to create a pedagogic system in the University that is relevant to the contemporary times and is at par with the reputed national and international Institutions.

4. Teaching/Pedagogic Principle

The term pedagogy is derived from paidagōgos wherein agogos means "I lead" and pais, a genitive of paidos means "child" hence, it means "to lead a child." This implies the teaching principles that are followed to guide/lead a child.

Higher Education Institutions like ourselves are catering to adults (Biologically ≥ 18 yrs) and not children. The teaching methods that are used to instruct the child cannot be used to teach the adults who come to the Institution with their own aspirations and have their own life experiences and attitude which determines their learning.

The science that deals with the education of adults is called as 'Andragogy' which literally means "leader of man". Andragogy or adult learning principles were popularized by Sir Malcolm Knowles in 1968.

NEP focuses on the adoption of the learner centric or student centric principles. Hence, the most important task for a teacher or a facilitator is to identify their learners.

The learner in higher education institutions are adults, hence it is important that andragogy or adult learning principles are followed. Also, the learners even though adults are diverse with different characteristics, attitude, interests etc. Some learners may be fast learners and some may be little slow. Hence, it is important to tailor the teaching approach catering to this diversity of learners.

The different teaching methods outlined here are based on the principles of adult learning as well as the student centric teaching and learning process which involves active participation of students.

Since, the andragogy finds its utility in higher education, capacity building and human resource development also, the term is not synonymous with 'only teaching methods'. Hence, even though the andragogic principles will be the mainstay, the term pedagogy will be used throughout this document to refer to the teaching methods.

These principles will be in alignment with the education principles advocated in Bloom's taxonomy. The 3 domains of education system i.e knowledge, skills and attitude and the 6 levels of learning as advocated by Bloom's will be catered through the pedagogic methods.

5. Teaching Methods

A **teaching method** to be used by a teacher is determined partly on subject matter to be taught, partly by the nature of the teacher but majorly it should be in relation with the characteristics of the learner and the type of learning it is supposed to bring about.

The traditional or the teacher centric method is the **didactic or lecture method**. This is generally the most common type of method that is practiced. It is a unidirectional flow of information from a teacher to the students. The questions by the students if any are generally answered at the end of the session. The content can be delivered to the students through oral extempore, powerpoint, black/white board, audio-visual aid etc. This is the least effective method of teaching as it does not gauge the existing knowledge of students about the topic nor does it measure the learning derived after the content transfer.

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.

Hence, the various student participatory teaching methods are advocated by our University which are described as follows:

5.1 **Student Interactive Session (SIS)**

Student Interactive Session (SIS) is a bi-directional dialogue between teacher and students wherein a teacher delivers a content while interacting with students. The existing knowledge of students' about the topic is assessed during the interaction and subsequent knowledge is build upon by raising relevant questions and asking students to attempt answering and explaining in between. This method 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.

This can be undertaken by way of regular teacher-student interaction, student-student interaction or by usage of audio visuals. The students should be constantly encouraged to become active participants. This facilitates an environment that fosters long term memory retention. 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

Various methods are used to initiate the interaction with students. These include :

- 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

5.2 Demonstration

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.

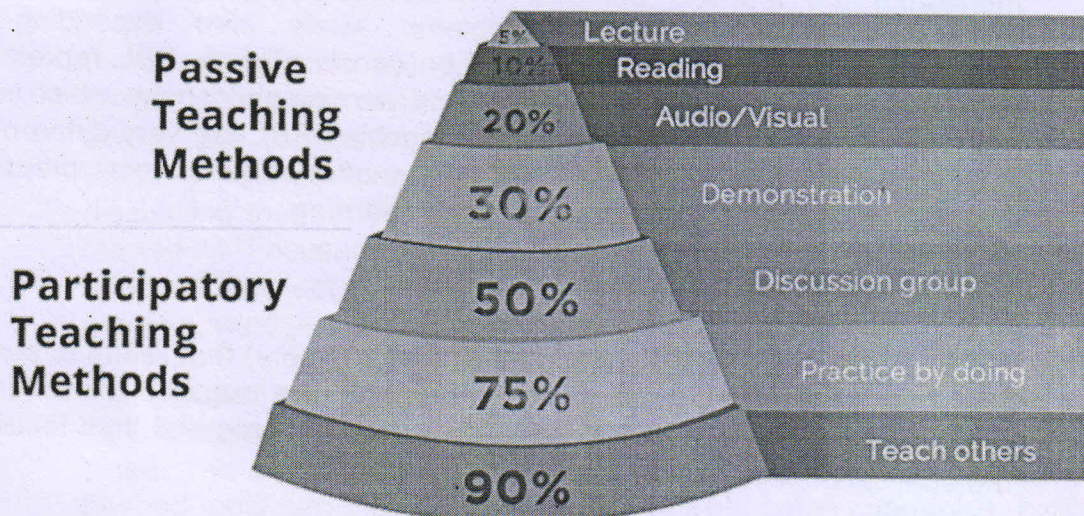
Demonstrations are similar to written storytelling and examples in that they allow students to personally relate to the presented information. Memorization of a list of facts is a detached and impersonal experience, whereas the same information, conveyed through demonstration, becomes personally relatable. Demonstrations help to raise student interest and reinforce memory retention because they provide connections between facts and real-world applications of those facts.

5.3 Student's seminar

It involves detailed presentation of a topic by student himself. The students will be allotted topics before hand. They prepare the topics and present it in front of their peers either extempore or using white/black boards or through a powerpoint presentation. This is a very effective method of teaching as it involves direct participation of the student and maximum learning is achieved when a student clears the concepts of their fellow students. As can be seen from the learning pyramid, 90% retention of knowledge is there when one teaches others. So, in a traditional didactic method, increase retention will be with the teacher and the students will retain only 5% of the content delivered.

Whereas when a student is made to deliver seminar, his retention of knowledge will be maximum and when all the students are given chances to present their content, their retention as well as the intended learning will be achieved. This method will be extremely useful in postgraduate studies but it is also encouraged to be implemented in the UG curriculum. There can be constraints about completion of topic in intended time but it can be achieved by dividing the topic into smaller subtopics and asking 3-4 students to present in continuity so that 4 students are well versed with it and topic is also completed in time without burdening one student with the entire topic. This may seem as an easy option for the teacher/ facilitator but it involves careful selection of the topic for the students by the facilitator and also involves guiding the student in the process by sharing the reference materials, helping them with presentation, ordering and structuring the presentation.

This method apart from focusing on the cognitive(knowledge) domain, also focuses on improving the communication and presentation skills of the student thus helping the students prepare for life.



5.4 Project Based learning

Project-based learning is an instructional approach where students learn by investigating a complex question, problem or challenge. It promotes active learning, engages students, and allows for higher order thinking. This project can be related to the prescribed curriculum but it should be encouraged to find innovative solutions to the existing problems by means of synergy/technical projects/product.

Students explore real-world problems and find answers via the completion of their project. It may be by a single student or by a team of students.

The project can be related to science experiments, real life problems or a research project.

5.5 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. 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 since then has been broadened in applications for other programs of learning. It enhances critical appraisal, literature retrieval and encourages ongoing learning within a team environment. The PBL 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 process involves identifying what the students 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 teacher is to facilitate learning by supporting, guiding, and monitoring the learning process. The facilitator 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.

5.6 Case studies

Case studies is an instructional method (not a theory) that refers to assigned scenarios based on situations where students are required to explore and apply the knowledge that they have gathered. This method thus focuses on the application level of learning in Blooms taxonomy.

Case studies are created and used as a tool for analysis and discussion as students are required to observe, analyze, record, implement, conclude, summarize, or recommend. They are very often used in higher education particularly in business, law and medical schools.

Cases are often based on actual events which adds a sense of reality. Case studies have sufficient detail to necessitate research and to stimulate analysis from a variety of viewpoints or perspectives. They place the learner in the position of problem solver for example a case study to reach to a diagnosis of a particular condition.

It is one of the very effective method to teach complex scenarios as students become actively engaged in the materials discovering underlying issues, dilemmas and conflict issues.

5.7 Group discussion



Group Discussion(GD) is a student participatory technique that involves all the students at a given time. It is like a soccer game where the ball synonymous with topic is passed on to each team member for their inputs and the level of sharing of each participant in reaching to goal is achieved through their active participation and contribution.

This pedagogic technique is commonly followed in management schools, social sciences, psychological sciences and journalism where students contribute through their knowledge and opinions and in turn grasps the knowledge and facts shared by fellow group members and the moderator of the group, thus leading to the holistic and overall grasp about a topic.

In the medical and para-medical sciences also, this method can be used in clinicals in the form of case discussions, about the differential diagnosis or the appropriate treatment modality. These case discussions can also be practiced utilizing the problem based approach which involves multiple sessions of group discussions moderated by the facilitator giving key points/hints to reach to the conclusion/ final diagnosis.

Group discussion will require some beforehand knowledge about the subject/concerned topic for effective practice. This can be facilitated by beforehand distribution of topics and the desired learning material through learning management systems(LMS) or e-lectures, and subsequently discussing them in the classroom settings. These group discussions can be termed as "Focused Group Discussions" (FGD) where students discuss about a focused subject topic previously known to them and gradually build up their base knowledge via sharing by fellow students and inputs from the facilitator.

The 'on spot' distribution of subject topic to facilitate group discussion can also be undertaken if students are asked to bring the desired textbooks to their class. The facilitator can then divide the class into small groups and the desired topic can then be divided into multiple small sub-topics. Each group shall be allotted one sub-topic and students will be asked to read from the reference textbook/ online reading material for a designated time period.

Each group will form a group leader who will jot down the key points pertaining to the subtopic allotted taking inputs from all the group members. The facilitator at this point of time shall monitor each group and give necessary inputs to increase participation of each student and to guide the students towards creating a summary of the subtopic allotted. Once the allocated time is over, the leader of the group then formally describes or summarizes the topic through oral presentation or powerpoint. The collective presentations by each group would comprehensively cover the entire topic and the facilitator can then finally summarize the entire content filling the gaps leftover by students.

This type of group discussion can be called as "Spot Group Discussion".

The biggest advantage of this pedagogical technique is that there is greater involvement of the learners with maximum retention and learning through peer

interaction and through explaining others which is in accordance with the learning pyramid.

The selection of topic and its division into multiple smaller subtopics that are practically doable in the fixed timings of classroom setting is the prime as well as challenging task for the facilitator.

Another responsibility for the facilitator in this technique lies in the identification of weaker or non-participating students. The identified students can be made group leaders in subsequent sessions to increase the participation by each candidate.

5.8 Panel discussion

A panel discussion, involves a group of people about 4 to 8 in number, who are qualified to talk about the topic and gather to discuss a given problem or the topic, in front of large group or audience. Panels usually include a moderator who guide the discussion and elicits questions from the audience.

Generally, this method is seen in conferences with subject experts being the panellists and discussing the important aspects of a topic. The same scenario can also be replicated in a classroom setting with active participation of students. Selected students for panellists can be shared the theme/topic to prepare well in advance. The facilitator/student can be the moderator and introduces the theme of the discussion to the participants. The moderator also initiates the discussion on the issue under consideration. The questions are then addressed to the panelists in a pre-determined order. The panelists are called (in a pre-determined order) to express their views. The panel members may react to, respond to or complement the views expressed by co-panelists. At the end of the session, the moderator integrates and synthesizes the different points of view and presents them to the audience.

This type of participatory technique greatly increases the confidence and communication skills of the student and also results in practical application and clarity of concepts.

5.9 Role play

Role play as a teaching method give students the opportunity to assume the role of a person or act out a given situation. It is a learning structure that allows students to immediately apply the content learned as they are put in a particular role. This technique is an excellent tool for engaging students and allowing them to interact with their peers and respond from the perspective of their character to complete the task assigned to them. This can be performed by individual students, in pairs, or in groups which can play out a more complex scenario.

It can :

- Motivate and engage students
- Enhance current teaching strategies
- Provide real-world scenarios to help students learn

- Learn skills used in real-world situations (negotiation, debate, teamwork, cooperation, persuasion)
- Provide opportunities for critical observation of peers

It finds specific utility is community outreach to apprise the public about specific scenarios through nukkad natak and in teaching complex management processes.

This falls under the category of learning by doing as per the learning pyramid.

5.10 Fish bowl technique

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.

Students take turns in these roles, so that they practice being both contributors and listeners in a group discussion. This strategy is especially useful when one wants to make sure all students participate in a discussion, when students are required to reflect on what a good discussion looks like, and when a structure is needed for discussing controversial or difficult topics.

Fish bowls are not effective if the groups are large. This is because, if there are more people, all of them will not have the opportunity to express their opinions and views satisfactorily. Therefore, the limit to the group size is about ten to twenty people.

The fishbowl has many advantages like:

- As a problem solving tool:* when one group listens and reviews discussion of the other group, they are able to view the problem from more than one angle. Thus, there is more interaction and stimulating and relevant discussion.
- For team building:* This method is very effective in getting people to open up, to generate different views, and allow these views to be analyzed by the group.
- For improving inter-group communication and relations:* conflicts can be resolved by bringing together different groups with different and strong opinions.

5.11 Tutorials

Tutorial teaching is a method, which is delivered following the usual lecture. This is a type of remedial teaching that is individualized or given to a specific group of students. This helps the students to improve their cognitive and other academic abilities. It requires active participation from students and provides opportunities for students to engage more thoughtfully with the course concepts and discipline knowledge.

Apart from class lecture content, laboratory, fieldwork and workshop may also be used for small group learning in a tutorial.

5.12 Online teaching

The use of technology in education is growing multifold and the pandemic situation has posed a daunting challenge to facilitators to gain competence and to engage learners in an online environment.

But the growing culture of online courses and to attract multiple national and international students, it is imperative for teachers to be prepared and trained in successfully delivering the content online.

The online content delivery can be through synchronous or asynchronous mode and specific training is required to prepare e-content that is learner centric and engaging.

5.13 Blended learning

This pedagogical approach means a combination of face-to-face and online activities using digital learning tools. It is not just a mixture but it refers to a well-planned combination of meaningful activities in both the modes.

Given the emergence of digital technologies and the emerging importance of leveraging technology for teaching-learning at all levels from school to higher education, the NEP 2020 recommends for use of blended models of learning. The various models of blended learning like blended face to face, blended online, flipped classroom, rotation model, self blended, blended MOOCs, flexible mode courses can be used.

5.14 Flipped classroom

It is a type of blended approach utilizing technology. It is actually reverse of the traditional classroom setting, hence the name. In the traditional classroom, there is content transfer from teacher to students and assignments or activities related to content are done subsequently. In the flipped classroom setting, there is sharing of lecture content/ video lecture prior to actual class. This enables students to be prepared and ready to participate in interactive learning activities during the classroom session.

During class, teacher-guided discussions and activities require students to put the lecture materials into practice. Classroom time may be used for group work, comprehension tests, in-depth application of the subject matter, or open

time for individual assignments—all with the added benefit of having a teacher and fellow students nearby for problem-solving and collaboration.

A flipped classroom typically involves a blend of online and face-to-face learning, but a combination of synchronous and asynchronous learning can fit into the model of a flipped classroom, whether it takes place completely within a virtual classroom, a hybrid model, or a pure in-person learning environment.

5.15 **Simulation based learning**

Simulation is a technique for practice and learning that can be applied to many different disciplines. It is a technique (not a technology) to replace and amplify real experiences with guided ones, often “immersive” in nature, that evoke or replicate substantial aspects of the real world in a fully interactive fashion.

The use of fully interactive/AI enabled mannequins can help in simulating real life experiences for students of medical profession which can actually help them to develop the necessary skills required in handling the real patients.

Though primarily used in health education, it can be also be applied in various disciplines like aviation industry and through the use of simulation softwares as in pharmacy, fashion, teacher education, engineering, and management etc. It helps to mitigate errors and maintain a culture of safety, especially in the industries where there is zero tolerance for any deviation from set standards.

5.16 **Field/industrial trips/internships**

This is not exactly a teaching method but it greatly enhances the practical knowledge for the students. It enables them to apply the theoretical knowledge that they have gathered during the classroom sessions. It is greatly student engaging and prepare students for life.

6. **Teaching Aids:**

Teaching aids supplement teaching. They are not teaching methods as such. They are used by teacher to explain concepts clearly to students.

A teacher can use any of the teaching aids to enhance the learning experience of the students. These may include:

- Power-point
- White Board
- Black Board
- Audios/recordings
- Videos
- Audio-visual aids.
- Pictures
- Flash cards
- Charts
- Models
- Educational toys

- Objects
- News Articles/papers
- Symbols
- Scans/radiographs
- Specimens
- Maps
- Graphs
- Bulletin boards
- Magnetic boards
- Flannel boards
- Slides
- Transparencies/OHP
- Radio
- Motion pictures
- Film strips

7. **Training for teaching technologies**

Teaching and learning process is constantly evolving with the introduction of new technology and development of innovative methods of teaching. Therefore, it is extremely important that constant updation of knowledge in teaching technologies is done for the faculty.

SGT University encourages its faculty to regularly enhance their capacity in educational technologies through:

- (a) Conducting regular Faculty development programs in education technology at central University level or at faculty level.
- (b) Induction programs for the newly recruited faculty to apprise them of all the pedagogic methods advocated by the University.
- (c) Encouraging faculty members to attend multiple online/offline FDPs and orientation and refresher courses related to teaching and education technologies by providing them financial support as per the University research promotion policy..
- (d) Encouraging faculty to take up Swayam/NPTEL courses for capacity building and reimbursing the examination fees.

8. **Monitoring for implementation of teaching methods**

All the faculties will be urged to adopt the pedagogic methods listed here that are student centered which will lead to greater engagement of the students and thus an improved learning experience for the students. But the implementation of these methods will be monitored through a central committee chaired by Pro-Vice Chancellor(Academics). Random monitoring of classes by the central committee will be done. Each faculty also shall nominate a faculty coordinator who will first get trained in these teaching methodologies and will be the contact point for central committee for monitoring of classes.

The committee for surveillance shall comprise of 2-3 faculty members who are trained in these methodologies and nominated by PVC Academics, and representatives from IQAC.

The faculty members will also be asked to update the innovative teaching methods that they have adopted in their self-assessment/appraisal proforma for further evaluation.

9. **Committee for surveillance**

The class monitoring/surveillance committee shall be at central level and shall comprise of the following members:

- (a) PVC/Dean/Director Academics- Chairperson
- (b) 2-3 faculty members trained in teaching methodologies nominated by Dean/Director/PVC Academics- Member
- (c) 1-2 representatives from IQAC- Member
- (d) Faculty coordinators-member

This committee shall be operational for 2 years and will include more trained faculty on a rotation basis.

The committee apart from regular surveillance will also take feedback from the students regarding the adopted teaching methods.

10. **Feedback mechanism**

The biggest stakeholders for all academic policies of Institution are its students. So, in a student centered learning environment, it is imperative to take inputs and feedback from students. Hence, a mechanism of feedback about teaching methodology used by each faculty is required to assess the applicability, acceptability and preference of the students so that their learning is maximized.

This feedback will be taken at faculty level by Dean through faculty coordinators and will also be taken by central monitoring/surveillance committee at University level.

A feedback proforma either online or offline will be created and circulated to students to be filled. It will compiled, analysed and followed up with suitable actions.



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