

2.3.1: Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences

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Content

1] Highlights on Student Centric Methods adopted at the University

Student Centric Methods in Detail

Marwadi University is known for its innovative and student-centric approach to education. The university has implemented various student-centered methods to enhance the learning experience of its students. Marwadi University has adopted a blended learning approach, combining traditional classroom instruction with online learning resources, to provide students with more personalized and flexible learning experience. The university also encourages active learning and student engagement by using project-based learning, flipped classroom, virtual laboratories and simulations. Students are also encouraged to participate in group discussions and poster presentation in order to enhance their communicative skills. Marwadi University has implemented MOOC courses as a part of regular curriculum. Marwadi University also believes in skill-based development of the students and making them aware of the latest technologies by organizing field visits, Interaction with industry experts and studying various cases and organizing workshops. Summary of student centric methods is given below.

Sr. No.	Name of Student Centric Method	Description
1	Workshop	Organizing workshops for students is an essential aspect of their overall education and development. Workshops offer an opportunity to supplement the traditional classroom instruction with practical, hands-on learning experiences. Through workshops, students can gain new knowledge and skills, explore different perspectives, and develop problem-solving abilities. Workshops also provide a platform for students to interact with experts in their fields and learn from their experiences. Additionally, workshops can help students enhance their communication and teamwork skills, as they engage in group discussions and collaborative activities. By organizing workshops, Marwadi University ensures that the students are well-equipped to face real-world challenges and succeed in their chosen careers.
2	Seminars	Seminars are an essential tool for students to gain knowledge and exposure beyond the traditional classroom setting. Marwadi University regularly organize seminars in the various disciplines to make students aware about the latest technological development in the various



		<p>fields. Seminars are conducted by experts and professionals in various fields, and they provide an opportunity for students to gain insights into new and emerging areas of study. Seminars offer an excellent opportunity for students to interact with industry experts and network with peers. Through seminars, students can deepen their understanding of complex topics, gain exposure to the latest trends and developments in their fields, and learn about career opportunities. Additionally, seminars can help students develop critical thinking, research, and communication skills as they engage in discussions and participate in group activities.</p>
3	Virtual laboratories	<p>Marwadi University provides virtual laboratory for its students of various disciplines. Virtual laboratories are an essential tool for students to gain hands-on experience in their fields of study. Virtual laboratories are computer simulations that mimic real-world laboratory experiments. Virtual laboratories allow students to perform experiments at their own pace and provide instant feedback on their performance, enabling them to refine their techniques and learn from their mistakes. Additionally, virtual laboratories can be accessed from anywhere with an internet connection, making them a convenient and flexible option for students who cannot attend physical laboratories.</p>
4	Moocs	<p>Marwadi University has tied up with Coursera learning platform to provide MOOC courses of its students for free. MOOCs (Massive Open Online Courses) have revolutionized the way students can access education and acquire knowledge. MOOCs offer courses from prestigious universities and institutions worldwide, and they are available to anyone with an internet connection. The importance of MOOCs for students lies in their ability to offer affordable, flexible, and accessible education. MOOCs allow students to learn at their own pace, on their own schedule, and from anywhere in the world. They offer a wide range of courses in different fields, from programming to business to humanities, and many MOOCs offer certificates of completion or even college credit.</p>



		<p>MOOCs also allow students to interact with experts in their fields, network with peers worldwide, and access resources such as online forums and discussion groups.</p>
5	Collaborative learning	<p>Collaborative learning is an important aspect of a student's education, as it promotes active engagement, critical thinking, and problem-solving skills. Collaborative learning involves students working together in groups to achieve a common goal. This approach encourages students to share their knowledge and skills, engage in discussion and debate, and develop teamwork skills. Through collaborative learning, students can learn from each other's strengths and weaknesses and develop a deeper understanding of the material. Collaborative learning also encourages students to take ownership of their learning and become more responsible for their academic progress. Additionally, collaborative learning can be particularly beneficial for students who may struggle with traditional classroom settings, as it provides an opportunity for them to engage with their peers in a supportive and interactive environment.</p>
6	Project-based/Problem-based learning	<p>Marwadi University promotes project-based/problem-based learning to make students apply their knowledge and skills to real-world scenarios. In project-based learning, students work on a project over an extended period, collaborating with others to research, design, and create a solution to a complex problem. Problem-based learning, on the other hand, involves presenting students with a specific problem and challenging them to develop a solution. Both approaches provide students with opportunities to develop critical thinking, creativity, and problem-solving skills while working in a collaborative and interdisciplinary environment. Project-based and problem-based learning also help students develop self-directed learning skills, as they are responsible for setting goals, planning and executing the project, and evaluating their</p>



		<p>own progress. Additionally, these approaches encourage students to become active learners, rather than passive recipients of information, which can lead to deeper engagement and better retention of information.</p>
7	Flipped classes	<p>Marwadi University motivates teachers to apply popular teaching approach such as Flipped classes that involves reversing the traditional classroom model. In a flipped classroom, students learn the lecture material outside of class through online resources such as videos, podcasts, or readings. In-class time is then dedicated to activities such as problem-solving, discussion, and collaborative work. Flipped classes are important for students because they allow for a more personalized and interactive learning experience. Students can learn at their own pace and have the opportunity to ask questions and seek clarification from their teachers and peers during in-class activities. Additionally, flipped classes promote active learning and engagement, as students are encouraged to participate in class discussions and work collaboratively to solve problems. Flipped classes also help students develop important skills such as time management, self-directed learning, and critical thinking.</p>
8	Think, pair and share	<p>Teachers of Marwadi University promotes Think, pair, and share, an important collaborative learning technique that encourages active engagement and critical thinking among students. This technique involves students reflecting on a question or topic individually, then sharing their thoughts with a partner before sharing with the larger group. Think, pair, and share is important for students because it allows for individual reflection, followed by the opportunity to share ideas with others, leading to a deeper understanding of the material. This technique also encourages students to actively listen to their peers' ideas and perspectives, which can promote empathy and understanding. Think, pair, and share can be particularly beneficial for shy or introverted students who may be hesitant to</p>



		speak in front of the whole class. Additionally, this technique can be used in both large and small group settings, making it a versatile tool for educators.
9	Field visits	Field visits are an important part of a student's education as they provide an opportunity to apply classroom learning in real-world settings. Field visits enable students to gain practical experience, develop critical thinking skills, and learn about different cultures and environments. Through field visits, students can interact with professionals in their field of study, observe how theories and concepts are put into practice, and learn about the latest developments and innovations in their field. Field visits also help students develop skills such as observation, data collection, and analysis, which are important for their academic and professional success.
10	Interaction with industry experts	At Marwadi University, Interaction with industry experts is an important aspect of a student's education as it provides an opportunity to gain practical knowledge and insight into their chosen field. Industry experts can provide students with an understanding of current trends, challenges, and opportunities in the field, as well as offer guidance on career paths and professional development. By interacting with industry experts, students can learn about the latest technology, techniques, and practices used in their field, helping them to stay up-to-date and competitive in the job market. Additionally, industry experts can serve as mentors, providing students with guidance, advice, and support as they navigate their academic and professional careers. Interaction with industry experts can also help students build a professional network, which can be valuable in securing internships, job opportunities, and mentorship.
11	Simulations	Simulations are an important learning tool that allow students to practice and apply theoretical concepts in a realistic, interactive setting. Simulations provide students with a safe and



		<p>controlled environment in which to experiment, make mistakes, and learn from their experiences. Through simulations, students can develop skills such as problem-solving, decision-making, and critical thinking, which are essential for success in their academic and professional pursuits. Additionally, simulations can be used to teach complex or abstract concepts that may be difficult to understand through traditional lectures or readings. Simulations can also be customized to meet the needs and interests of individual students, providing a personalized and engaging learning experience.</p>
12	Role-plays	<p>At Marwadi University, Role-plays are an important learning tool that allow students to practice and apply their communication and interpersonal skills in a simulated real-world setting. Role-plays enable students to step into the shoes of different characters and practice their verbal and non-verbal communication, negotiation, problem-solving, and conflict resolution skills. Role-plays help students to develop empathy and understanding of different perspectives and situations, which is an important aspect of emotional intelligence. They also provide an opportunity for students to receive constructive feedback on their performance and improve their skills.</p>
13	Case studies	<p>Students of Marwadi University practice case studies to analyze and apply theoretical concepts in real-world situations. Case studies provide students with an opportunity to develop problem-solving, critical thinking, and decision-making skills, by presenting complex and multifaceted problems that require a deep understanding of the subject matter. Case studies also enable students to understand the complexities and nuances of different scenarios, and consider different perspectives and potential outcomes. Additionally, case studies can be used to teach ethical considerations, as they often present moral and ethical dilemmas that require thoughtful consideration and analysis. By</p>




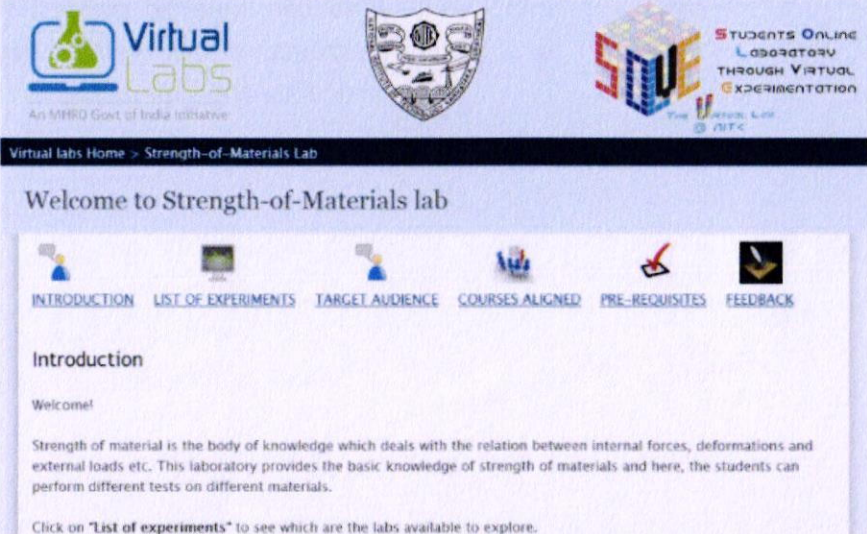
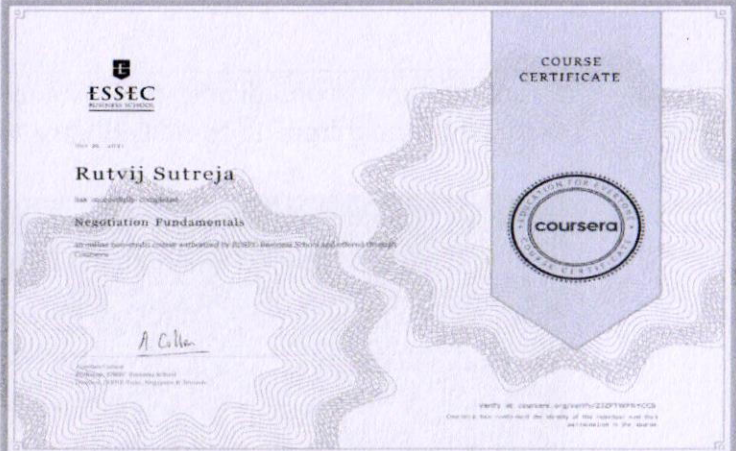
		analyzing case studies, students can develop an understanding of how theoretical concepts are applied in practice, and gain a deeper appreciation of the importance of critical thinking and analysis.
14	Group discussion	Group discussions are an important learning tool that allow students to actively engage with their peers and learn from different perspectives. Group discussions encourage students to share their ideas, opinions, and experiences, and provide an opportunity for them to learn from each other. Group discussions also help students to develop their communication and interpersonal skills, as they must articulate their thoughts clearly and respectfully, and actively listen to their peers. Through group discussions, students can learn to think critically, evaluate different viewpoints, and develop their own arguments and ideas. Additionally, group discussions can be used to promote collaboration and teamwork, which are essential skills in many fields. By working together in a group, students can learn to build consensus, delegate tasks, and support each other in achieving a common goal.
15	Graded discussion	Graded discussion is a crucial component of the learning process that allows students to develop critical thinking, communication, and collaboration skills. By engaging in discussions with their peers, students can gain a deeper understanding of the subject matter, clarify their own thoughts and ideas, and challenge their assumptions. Graded discussions also encourage students to actively listen to the ideas and perspectives of others, which helps them develop empathy and respect for diverse viewpoints. Additionally, graded discussions provide opportunities for students to practice presenting their ideas clearly and persuasively, which can be beneficial in both academic and professional settings.
16	Journal review	Journal review is a critical activity for students as it enables them to stay up-to-date with the latest


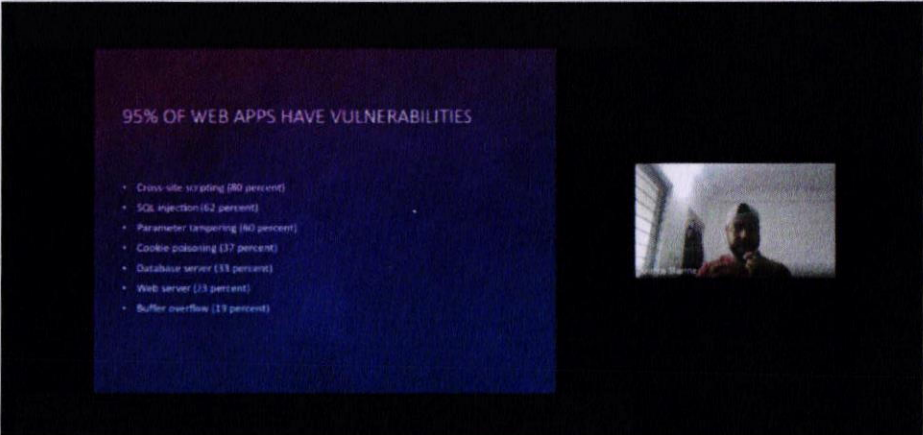





		<p>research in their field of study. By reviewing academic journals, students can gain a deeper understanding of the current state of knowledge, identify gaps in the literature, and develop new research questions. Journal review also helps students develop critical thinking skills by analyzing and evaluating the methodologies, findings, and conclusions presented in academic articles. In addition, journal review provides opportunities for students to practice academic writing and citation skills, which are essential for success in their academic careers. Furthermore, regularly reviewing journals can help students build their own research agendas and establish themselves as experts in their respective fields.</p>
17	Open book test	<p>Open book tests can be a valuable tool for students, as they allow them to utilize their textbooks and notes during the exam. This can have several benefits, such as reducing stress levels and increasing accuracy of information. Open book tests require students to not only memorize information, but also understand it and know how to apply it. Additionally, they encourage students to be more organized and take better notes, as they know they will be able to use them during the exam. This type of testing can also foster critical thinking and problem-solving skills, as students may be asked to apply their knowledge in new and creative ways.</p>
18	Poster presentation	<p>Marwadi University organizes poster presentation competitions for its students to showcase their research and ideas in a visual and engaging way. Through designing and presenting a poster, students can develop skills in research, organization, and communication. Poster presentations require students to condense complex information into a concise and visually appealing format, which can help them to better understand their own research and present it to a wider audience. Additionally, poster presentations provide a valuable opportunity for students to receive feedback and engage in discussions with others who have a shared interest in their topic.</p>


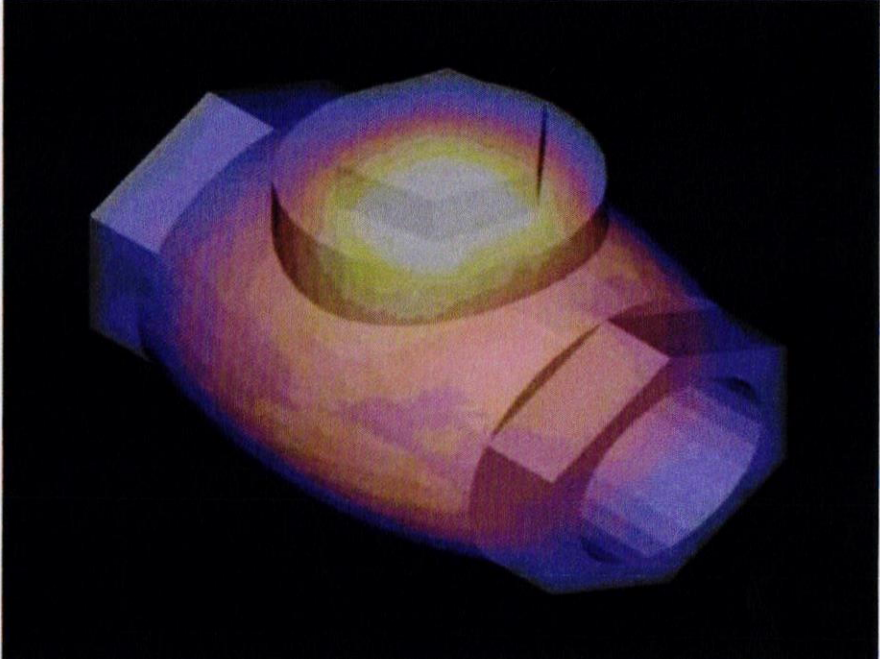
		This can help to expand their knowledge and perspectives, as well as develop their ability to articulate their ideas and defend their research.
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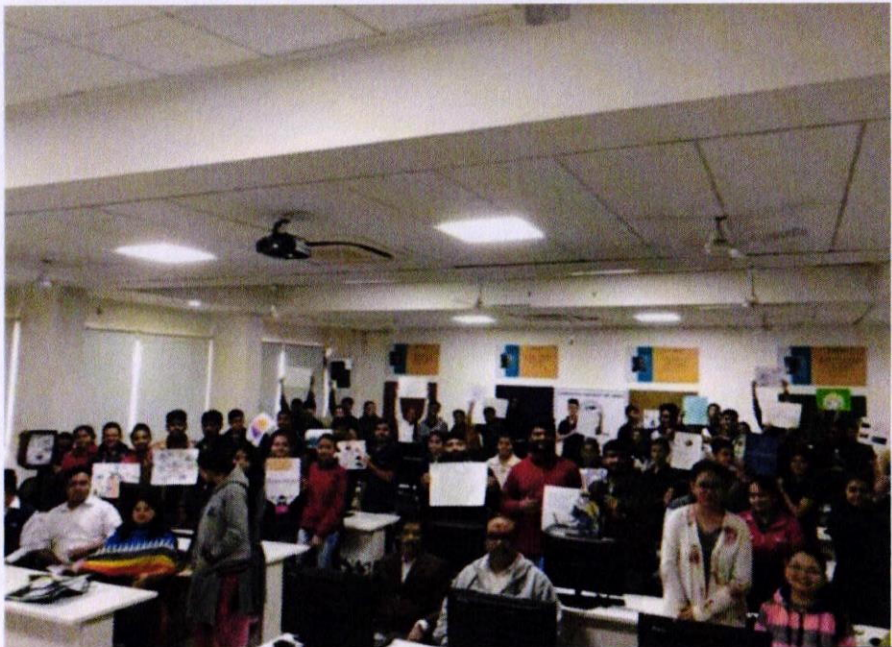
Metric 2.3.1		
Sr. No	Faculty	Student Centric methods (Top highlights)
1	Faculty of Science (FOS)	<p>1st annual summit on Advance Biology and Chemistry (ABC-2018) was successfully held from 1st to 3rd February, 2018 at Marwadi University</p> 
2	Faculty of Engineering	Virtual lab for fluid mechanics and strength of materials.

		
3	Faculty of Law	<p>Coursera Course is being offered to the students by clubbing it in one of the subjects offered in a semester. The objective of offering these courses to the students is to add to their learnings and skill development. The students were offered a course on Negotiation Fundamentals by ESSEC Business School.</p> 
4	Faculty of Engineering	<p>Computer Engineering department had organized a collaborative learning workshop on "Game Development using Unity" on 12th March, 2022 at Marwadi University.</p>

																		
5	Faculty of Computer Applications	<p>Student of FOCA presenting project on “Vulnerability Assessment and Web Application Penetration Testing”.</p>  <table border="1"> <thead> <tr> <th>Vulnerability</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Cross-site scripting</td> <td>80 percent</td> </tr> <tr> <td>SQL injection</td> <td>62 percent</td> </tr> <tr> <td>Parameter tampering</td> <td>60 percent</td> </tr> <tr> <td>Cookie poisoning</td> <td>37 percent</td> </tr> <tr> <td>Database server</td> <td>33 percent</td> </tr> <tr> <td>Web server</td> <td>23 percent</td> </tr> <tr> <td>Buffer overflow</td> <td>19 percent</td> </tr> </tbody> </table>	Vulnerability	Percentage	Cross-site scripting	80 percent	SQL injection	62 percent	Parameter tampering	60 percent	Cookie poisoning	37 percent	Database server	33 percent	Web server	23 percent	Buffer overflow	19 percent
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6	Faculty of Pharmacy	<p>Faculty of Pharmacy organized a public awareness camp “Pharmacy: Always trusted for your health” on World Pharmacy Day-2021.</p>																



		
7	Faculty of Pharmacy	<p>Faculty of Pharmacy organized an event “Pharma KBC” on World Pharmacy Day-2021.</p> 
8	Faculty of Engineering	<p>Chemical Engineering Department organized a visit at vermi compost site on 15th November, 2021 at Marwadi University.</p> 
9	Faculty of Computer	<p>Faculty of Computer Application organized an expert session on “Networking Technologies” from 8th January, 2018 to 16th January, 2018</p>

	Application	at Marwadi University. 
10	Faculty of Engineering	Students of Mechanical Department had performed a casting simulation in the software to identify the casting defects. 
11	Faculty of Engineering	Chemical Engineering department had conducted group discussion on "Ozone Layer Protection and You".

		<p> Navar chaturiya 716008004 Bhanu chaturiya 716008005 Bhavna Chauhan 716008006 Shyam Kauriya 716008007 Meet Prasad 716008008 Sumit Talwariya 716008009 </p> <p>GROUP MEMBERS:</p> <p>Ozone Layer Protection and You</p> <p>(1) What is meant by "ozone hole"?</p> <p>→ A region of marked thinning of the ozone layer in high latitudes, chiefly in winter, attributed to the chemical action of CFCs and other atmospheric pollutants. The resulting increase in ultraviolet light at ground level give rise to an increased risk of skin cancer.</p> <p>(2) Why is ozone important?</p> <p>→ Ozone layer is very important for earth because it protects the earth from the harmful UV rays coming from the sun. If UV rays enter the earth's atmosphere, then disease like skin cancer, cataract etc. can be caused to us and adverse effects on environment too can be seen.</p> <p>(3) What causes the phenomenon?</p> <p>→ Ozone depletion occurs when chlorofluorocarbons (CFCs) and halons gases formerly found in aerosol spray cans and refrigerants are released into the atmosphere. CFCs and halons cause chemical reactions that break down ozone molecules, reducing ozone's ultraviolet radiation-absorbing capacity.</p> <p>(4) What are the main depleting substances (CFCs) used for?</p> <p>→ Ozone depleting substances (ODS) are those substances which deplete the ozone layer and are widely used in refrigerators, air conditioners, fire extinguishers, in dry cleaning, as solvents for cleaning electronic equipments and as agriculture fungicides.</p>
12	Faculty of Computer Application	<p>Faculty of Computer Application had organized poster presentation competition on 8th February, 2020 at Marwadi University.</p> 
13	Faculty of Engineering	<p>Mechanical Engineering Department Organized a Workshop on "Pneumatics: Hands on" from 10th February to 12th February, 2021.</p>

		
14	Faculty of Engineering	<p>Mechanical Engineering Department Organized an Expert Talk on "Industrial Metallurgy" on 11th July, 2018.</p> 
15	Faculty of Engineering	<p>Mechanical Engineering Department Organized ASME E-Fest Asia Pacific-2020 from 27th February,2020 to 1st March, 2020.</p> 



		
16	Faculty of Engineering	<p>Mechanical Engineering Department organized Industrial visit to Amul Industries, Anand on 16th August 2019.</p> 
17	Faculty of Engineering	<p>Students of Civil Engineering Department performed project on "Design and Construction of the Suspension Bridge of Newspaper"</p> 