Dr. Sangeeta Shashikant Shinde

Innovative Teaching Methods in Higher Education

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PREFACE

Education in the 21st century has certainly taken an interesting turn . Modern-day education is certainly aided by computers, projectors, the internet, and much more. Everything that can be simplified has been made simpler. Technology and science have explored every aspect of life. The Internet provides implausible knowledge, and there is no end to it.

But still the teacher's role remains fairly important. Teachers are best known for the role of educating the students that are placed in their care. Beyond that, teachers serve many other roles in the classroom. Teachers set the tone of their classrooms, build a warm environment, mentor and nurture students, become role models and make sure that the teaching and learning process goes smoothly.

But like any other field the education sector also needs constant innovation and figurative reconfigurations of systems for constant growth. Unfortunately, the current Indian education system is very obsolete and desperately needs change. Today education and educators need to understand the true needs of a student and should be focused on improving skills rather than scores. Today we need to change our teaching methods in order to bring out the best in the students and to make them a complete individual.

This book is a humble effort by all of us to improve the teaching methodology by explaining the various innovative methods incorporated in Sarhad college of Art’s, Commerce and Science. I hope that this book will in some way or form help the teaching system to be more efficient and will secure the bright future of our nation.

ACKNOWLEDGEMENT

I feel blessed for having opportunity to bring out this edited volume

"Innovative teaching methods in Higher Education"

First and foremost, I express my sincere gratitude towards our teaching community who continuously work to bring innovative methods in the teaching learning process to make knowledge gain smooth and enjoyable.

I express my deep sense of gratitude to my mother Gokula Shivaji Bhosale, husband Mr. Shashikant B Shinde, Son Prasanna Shashikant Shinde and my all family members who are always by my side taking care of all the responsibilities and encouraging me continuously to push my limits.

Secondly, I wanted to thank Mr Sanjay Nahar Sir President of Sarhad, Mrs Sushma Nahar madam Secretary of Sarhad, Mr.Shailesh Wadekar Trustee of Sarhad and Principal of Sarhad Dr Hanumant R Jadhawar Sir for their support and guidance.

I would like to thank the teaching and non-teaching staff of Sarhad college of Art's,Commerce and Science for their dedication towards their work to make this teaching learning process more effective and efficient.

I would also like to thank all the contributors, whose chapters have been added in this book, their dedication and hard work has truly served its purpose as this book has turned out to be a very interesting and knowledgeable read. Once again thank you everyone as this would not be possible without you.

Last but not least I would like to thank Mr Zahir Ahmed and Mr Arvind Kumar of Empyreal Publication House for publishing this book.

Without the active involvement and support of all those mentioned above, this volume would not have been possible.

Dr. Sangeeta Shashikant Shinde

Table of Contents

A STUDY OF INNOVATIVE TEACHING METHODS IMPLEMENTED AT SARHAD COLLEGE FOR EFFECTIVE TEACHING -LEARNING

Swati N. Divatankar
Assistant Professor, Department of Computer Science

ABSTRACT
Education is a light that helps every person to build his future and to achieve his goals. Because of education, a person not only become literate but he will become knowledgeable, self-sufficient, cultured, cultivated, sophisticated. Effective teaching-learning process is the need of educational filed. To make the teaching-learning process effective, innovative teaching methods must be implemented which will benefit both teachers and students. Now a day, in addition to traditional methods, new modern technologies have entered in the educational field. The purpose of this paper is to discuss innovative teaching methods which have been implemented at Sarhad College of Arts, Commerce and Science, Katraj, Pune for effective teaching-learning.

Keywords: effective teaching-learning, innovative teaching methods, creative teaching methods

INTRODUCTION
Traditional method of teaching learning is chalk and talk method in which teacher is a sender and student is a receiver of knowledge. In classroom teaching, only teacher is active and students are playing passive role. The purpose of education is not only teaching-learning but also to improve computing skills, abilities and knowledge of students and make students innovative and creative. In the era of 21st century, technology gets introduced in the education field. Because of technology, transfer of knowledge becomes easy, effective and interactive. **Technology has the ability to enhance relationships between teachers and students and assessing students becomes easy [1].** Technology replaces classrooms with digital learning tools, such as computers android phones. It supports student engagement, motivates students to learn and makes learning more enjoyable [W1]. Many institutions are applying new methods, technology, modern technology for overall improvement of the students. Innovative teaching methods are essential for the present and future education system [2].

In this paper is base on case study of "different innovative teaching methods implemented at Sarhad College for effective teaching-learning"

METHODS OF INNOVATIVE TEACHING [W2]:

1. Computational tools:
Faculties and students of Sarhad College of Arts, Commerce and Science, Pune are using various computational tools for effective teaching-learning. It is a combination of hardware, software and network communication. The general ICT tools used are desktop/laptops, scanners, DVD's, CD's, printers, photocopiers etc. Various operating systems, software's and Internet is used to fulfill the academic requirements as well as to improve computing skills, abilities and knowledge. Along with this, **1 smart class and 24 projectors** are used for teaching-learning by faculties of Sarhad College. Students are also using projectors/ smart class for seminar presentation and various activities/competitions.

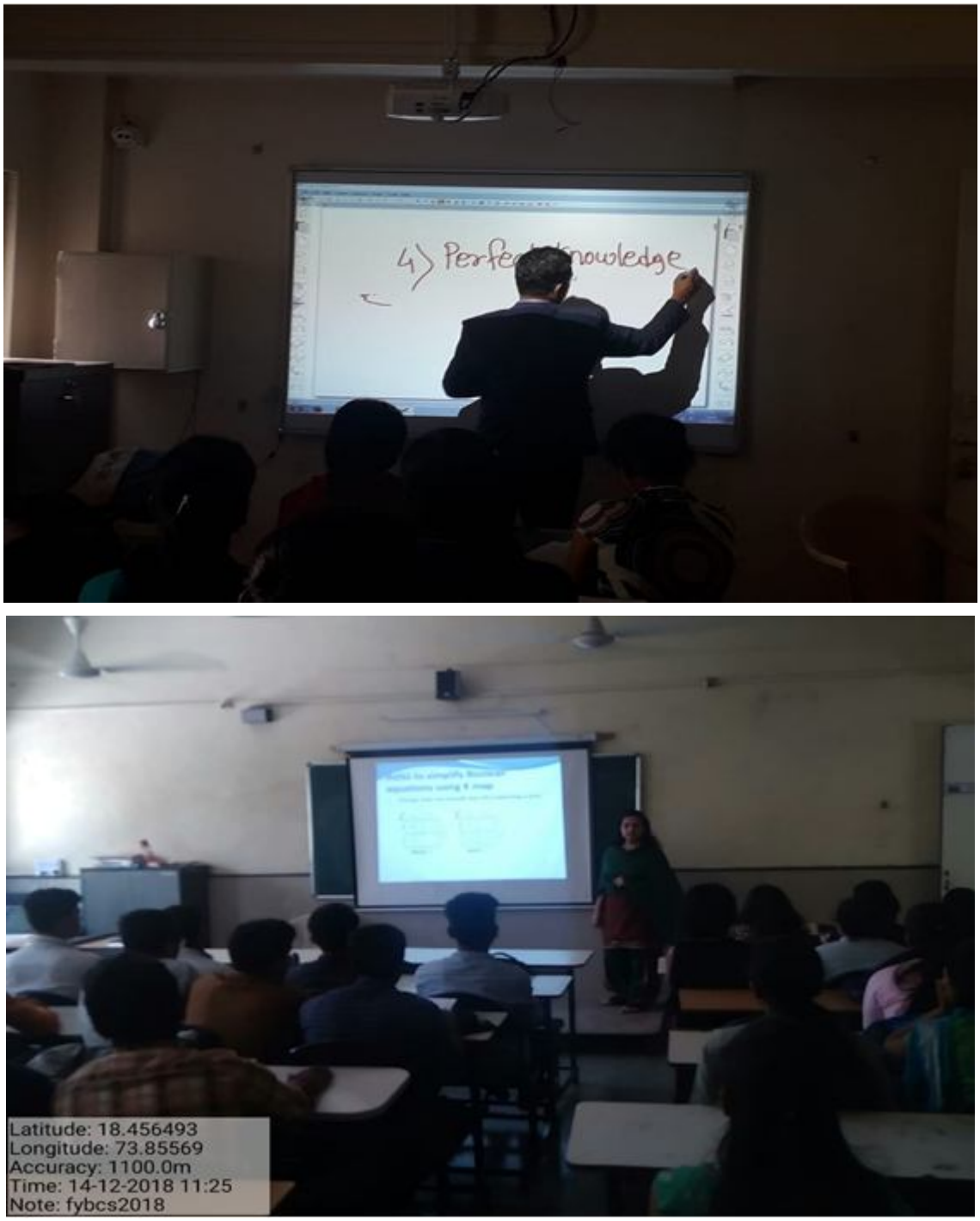

Fig. 1: Projector & Smart Class used for effective teaching-learning

2. Showing Movies/motivational videos in a class

To support a lesson from syllabus or topic from curriculum, academic films or educational videos are shown to students which offers clear understanding of the concepts, inspiration, entertainment and sometimes a warning. Also inspirational videos are shown to students to inspire them and to set & achieve their goals.

Fig. 2: Academic related films are shown to students

3. Google classroom

Google classroom is used by all classes for teacher-student communication which is easy platform to share assignments, class tests, model answer sheets, PPTs, videos.

Fig. 3: Google classroom used for teacher-student communication

4. Learning in natural environment

Learning outside the classroom has more impact and credibility also it helps for personal growth and can lead to breakthroughs in learning. Sarhad has maintained one open space named **"Jaliyanwala Baag Vyaaspith"** to make teaching-learning in natural environment. This open space is used for to take interactive sessions, to make discussions or to take different activities or competitions for students.

Fig. 4: Class conducted in open space

5. Flipped classrooms

To improve the quality of interaction between students, the concept of flipped classroom has been implemented. The study material like notes or videos for particular topic is given to students through google classroom. Students review lecture materials before class as homework and students come to the class with background knowledge and then discussions are made in the classroom. The discussions are made in the form of presentations, debate or lab experiments.

Fig. 5: Discussion made by student in flipped classroom through presentation

6. Responsive classrooms for learning

The different techniques are used for active learning without disturbing the flow of class. Problem solving sessions, one-minute paper activities are arranged to check the student's progress effectively. At the end of lecture or presentation, to check understanding of the points which are taught in the class, students are asked to discuss muddiest point or clearest point of the lecture. In between the class, some complex questions or some real life examples are discussed related to the topic. Ice breakers, puzzles or games, brainstorming activities are conducted by the teachers as stress busters to relieve the stress and increase the attention span of the students.

Fig. 6: Winner of the problem solving session appreciated in the class

7. Peer learning

Peer learning is a part of active learning process. In this method, students make a group for learning which improves open communication of the students. **In a peer learning method, students can search for, collect, review, analyze and apply their knowledge as per their individual capacity.**

Fig. 7: Peer learning which improves open communication of the students

8. Sessions to improve competency skills

Aptitude tests are used to assess candidates in terms of skills, knowledge, ability and personality development. Aptitude tests will help students to recognize their skills and enhances academic performance. Aptitude sessions are conducted by various departments which includes analogy reasoning, logical reasoning, numerical reasoning etc.

Fig. 8: Students attempting logical reasoning test

9. Information browsing

Students are encouraged to browse the information from internet about the topic given by teacher or about new topic of particular subject. The information collected by the students is discussed in the classroom also the reports are made by students under the activity “report writing”.

10. Workshops by students:

Initiative is taken by the students of Sarhad College to share their knowledge with other students. To learn new aspects and to share information with other students, workshops are delivered by students of various departments.

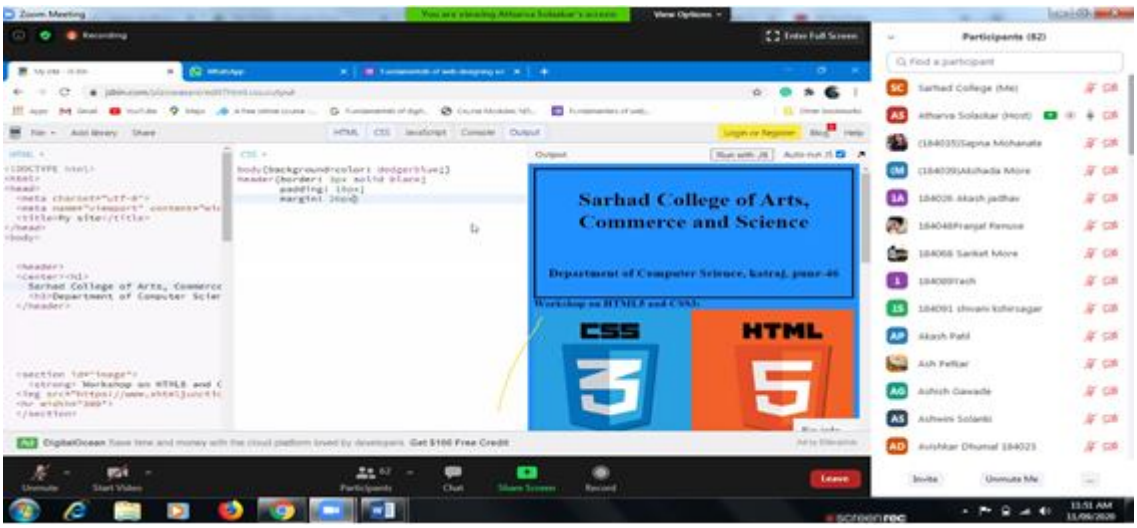

Fig. 9: Workshop on web designing delivered by Atharva Solaskar(SYBSC CS)

11. Teaching- learning through College Clubs

English Literary Club was inaugurated in 2018-19. It is initiated for skill enhancement of students. The objective of the club is to make the students more competent in accuracy, fluency and proficiency in English and to get 'LSRWT' skills (Listening, Speaking, Reading, Writing and Thinking). Various competitions/programmes like Essay Writing, English Quiz, Elocution Competition, Spelling test, Guest Lecture etc. are conducted through English Club.

Fig. 10: Spelling Test of English Club

Physics Club was established in year 2019-20. The objective behind opening this club is to create interest in Physics subject and to conduct various activities/competitions like group discussion, debate, quiz, seminars, field visits etc. to make the Physics concepts easier.

Fig. 11: Physics Club inauguration and activities

12. Teaching-learning through event management

The students are guided by the faculties of Sarhad college to organize different college events. Fresher's party and welcome function is organized every year by SY and TY students for FY students to learn event organization. Food stalls are arranged every year to learn creative aspects in marketing and selling. Students help in the arrangement of **Sahitya Sammelan** which helps to learn interface between Marathi and Punjabi language and literature. Students also take part in the organization of intercollegiate events **SARHAD TECHNOFEST, SCIENCE FAIR, National Level Conference** every year.

Fig. 12: Students take part in event organization

13. Teaching- learning through activities and competitions

The students of Sarhad College are guided and encouraged by the faculties to participate in different activities and competitions. The experiential knowledge of the subjects is gained through various activities like field visits, industrial visits, software installation activity etc. The students are participated in various competitions like elocution competition, poetry reading competition, group discussions, debate competitions, essay competitions, best out of waste competition, model making competition etc. Students are also encouraged and guided to participate in intercollegiate competitions.

Fig. 13: Model Competition using waste material

Fig. 14: Innovative Business Practices

Various days like, Marathi Bhasha Gaurav Din, Hindi Day, Mathematics day, World environment day are celebrated in the college under which various activities and competitions are held to understand the importance of that day.

14. Online teaching and activities

In the year 2019-20, due to pandemic situation of Covid 19 the colleges were closed but we didn't stop learning. The college started online classes for students through online platforms google meet and zoom. Various intercollegiate and college level activities and competitions were successfully conducted. Online communication is made with students through google class and whats app group. To balance the mental health, the students and faculties of Sarhad College have made one video in which various activities performed by them during lockdown were shown. The video was named as **"Effective Use of Lockdown"** and it was posted on the you tube channel of college (Video Link: https://www.youtube.com/watch?v=T2QwPdZ4IAg).

Fig. 15: Asst. Prof. Shreeraj Bhor participated in video making

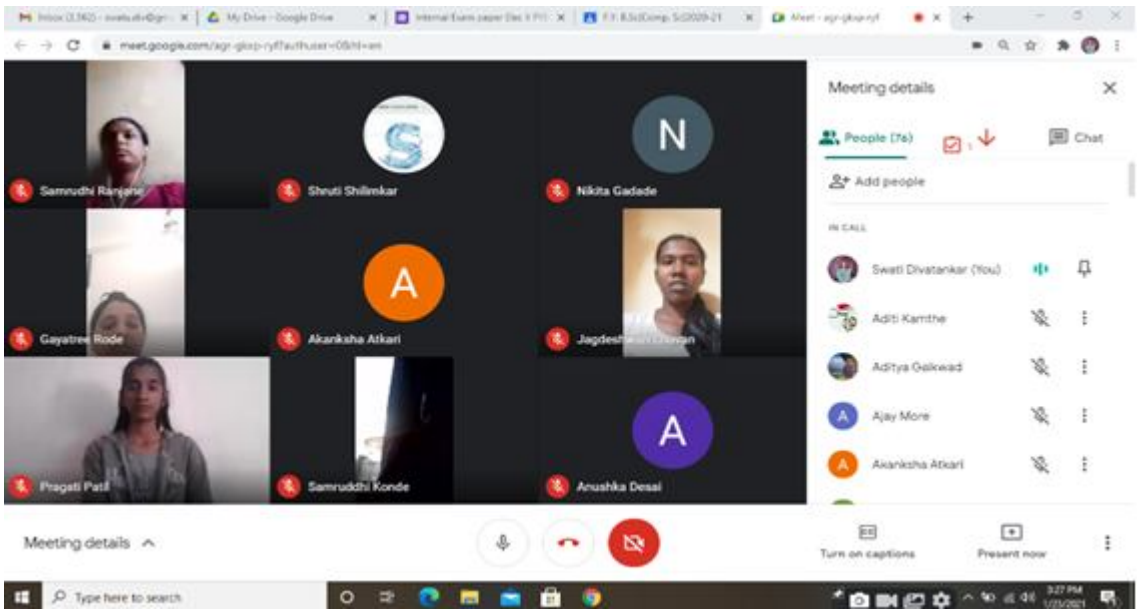

Fig. 16: Students attending online class

15. E resources:

Digital library of college is equipped with 5 computers. E textbooks are shared through google classroom. The college has started own APP named as SARHAD APP through which videos of every subject (unit wise) are shared with students. Students can access the app through username and password.

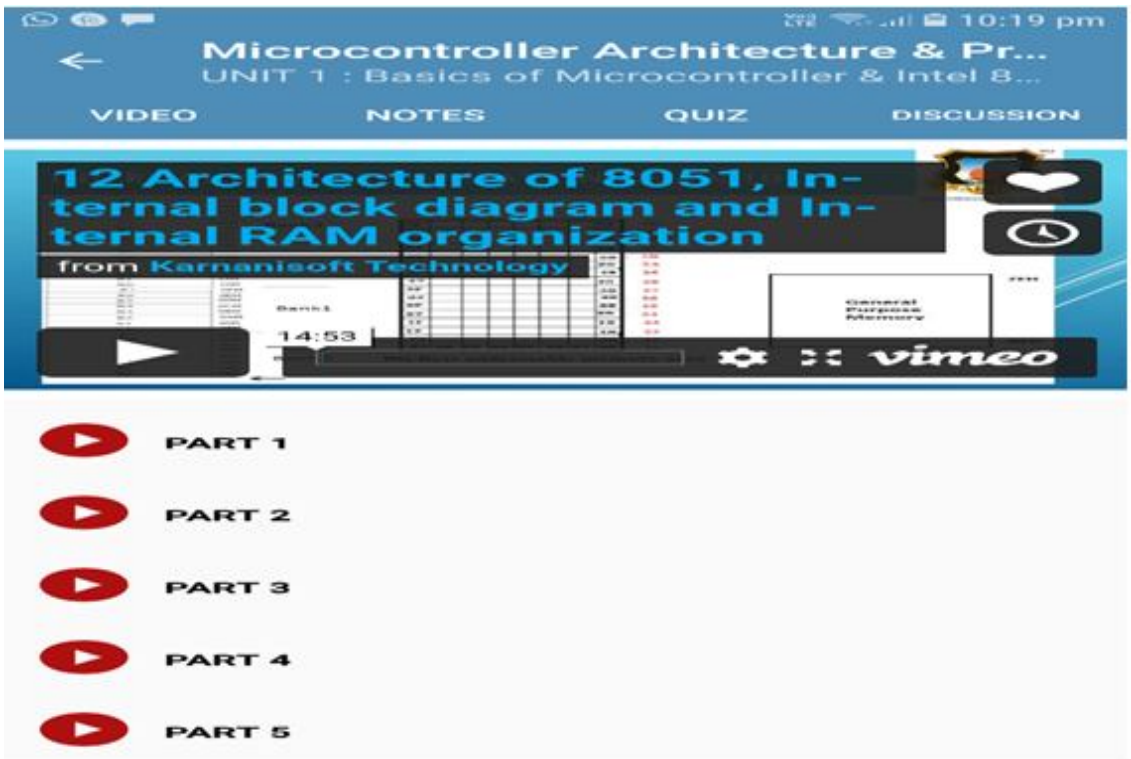

Fig. 17: Video access to students through SARHAD APP

CONCLUSION:

The core objective of teaching is not only to pass the knowledge or information but also to make students confident, responsible and self-dependent. In this paper, the different innovative methods of teaching-learning are discussed. To make the teaching-learning process effective, it is necessary to use innovative teaching methods along with chalk and talk method. In this paper, different innovative methods applied at Sarhad college are discussed and more innovative and creative methods will be implemented in the future.

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EFFECTIVE TEACHING METHODS FOR COMMERCE

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ABSTRACT
Abstract – For an effective teaching and learning process in commerce stream the teaching method has to be good for presenting content. It is a way through which subjects can be made interesting. Methods of teaching commerce are different for each level of university and age group. The methods to be adopted depends on environments or experiences that are to be correlated effectively. While teaching commerce subjects one should have knowledge about methods and approaches of teaching commerce subjects. Before teaching any subject, all teachers should be clear about its general as well as specific objectives of each Subject.The importance of modern teaching methods and education equipped with high technology is felt over time and the new techniques have therefore begun to be introduced into education. In schools, innovative approaches and new technology-based gadgets have been added.

Keywords*- Teaching methods, Commerce, teaching-learning process*

INTRODUCTION
Commerce education-
Commerce education in senior college is divided into theory and application base subjects for example commerce, economics, management is considered theoretical base subjects, and Accountancy, costing, and taxation subjects are based on application-based. While teaching commerce subjects one should have knowledge about methods and approaches of teaching commerce subject. Before teaching any subject all teachers should be clear about its general as well as specific objectives of each Subject, which will guide them in choosing the proper teaching method. For e.g.If the teacher wants to teach a theory subject he/she should choose a lecture method, and while subjects like accountancy, costing he should start with problem solving teaching method. As we know that students who are studying at university level are in the age group from 19-23 , so teachers should create interest among the students. For creating interest among the students a ,the teacher will use different methods of teaching, such as - starting a topic in an interesting way, giving practical examples for explaining theoretical concepts.

Commerce is a subject which is related to our real life , so for effective teaching of commerce it is all about listening, questioning, being responsive, and remembering that each student and each class is different. For teaching productively, teachers have to select appropriate instructional methods . Commerce has many different subjects in which commerce curriculum has subject matter like insurance, production, marketing, money and banking advertising, communication, forms of business, business registration and their laws, consumer protection etc.

To teach such a syllabus teacher should be well versed with concepts . Dynamic changes in economic , environmental changes which are one of the new topics of commerce curriculum that should be taught by every commerce teacher. So teachers should update their knowledge regularly.

Before understanding methods of teaching in commerce, subject teacher should follow some teaching principles

1. **Known to unknown**-Before Starting new topics/chapters the teacher must share their experience with students which are related to their day-to-day life.
2. **Simple to complex**- Subject teachers should divide chapters from easy into hard parts.Simple ideas must be shared in the beginning and proceed to a difficult level
3. **Actual to a representative**- The teacher should give more actual examples than virtual examples which are presented in a book or representative in nature.
4. **Particularly to Genera**l- In commerce some particular part has to be explained concepts, a teacher can provide some situation to students, and after observing situations students can understand and come up with conclusions or outcomes.
5. **Diverse and engaged participants**- – in order to reach an elevated level students´ satisfaction, it is crucial to find the right participants, both students, and teachers.A degree of satisfaction should be calculated by course evaluations and response rates afterwards.
6. **Cultures Participatory**– Multi Layered between students and teacher, both formal and casual, both formal and causal are produced by attending classes, lectures, seminars, workshops, and optional events, creating their own learning groups and starting to understand the importance of collaboration, problem-solving
7. **Interactive teaching and learning** – the learning experience must not be limited to the classroom.On the contrary, learners should engage in learning experiences that embody real-life circumstances and where theoretical knowledge can be confronted with practical experience. Objectives of the study To work it out proper teaching method for commerce subjects with reference to account subjects.. To analyze the effect of online and offline teaching methods in the current situation.

METHODS OF TEACHING COMMERCE

Traditional methods	Modern methods
1. Lecture Method 2. Team Teaching Method 3. Inductive and Deductive Method 4. Discussion Method 5. Seminar 6. Symposium	1. Collaborative Learning 2. Spaced Learning 3. Flipped Classroom 4. Self-learning 5. Gamification 6. Crossover Learning 7. Project-Based Learning 8. Workshop 9. Brainstorming 10. Surveys and Market Studies

LECTURE METHOD

For teaching theory subjects it is a very useful method. At university level most professors use lecture methods.An efficient by organizing problematic situations and using fascinating and illustrative mediator, teacher will make the lecture meaningful and interesting

TEAM TEACHING METHOD

In the team teaching method teachers/instructors prepare the team purposefully and cooperatively to support students going to any class. They set goals , prepare syllabus, teaching plan, teach students and evaluate students' performance. Team discussed every point related to

the teaching learning process which helps them to find solutions to problems faced by them while teaching. Teacher and students evaluated by their performance. The Students benefited from the expertise of different teachers.

INDUCTIVE METHOD: :

In an inductive method the teacher presents rules through situations that make the students come to a general conclusion or establish laws by observing specific and concrete them. It starts with examples and asks them to find rules. This method can be used to explain basic principles and rules of accountancy ,and application of these principles and rules to identified and classified accounting transactions.

DEDUCTIVE METHOD:

In this method - the learner proceeds from general to specific, abstract to the concrete, and formula to examples in this process. In this method teachers explain pre defined rules to students and tell them to prepare for formulas. For example, Teachers can explain the examples of accounting rules - examples of personal account, real account, and nominal account, and then proceed to apply the rule for Debit and credit of account .The instructor should explain in the preparation of the trial balance that all the assets, expense and losses fall under the debit side of the trial balances. The credit side of the trial balance contains all the liabilities, income, and receipts. He may then give them a dilemma and ask them to plan a balance of trials. Here the learner from the general rule proceeds

DISCUSSION METHOD

Discussion methods emphasize learning rather than teaching, every student participates in discussion so it trains students to self expression, increasing their reflective thinking. But it is not used for all topics or points. Intelligent and confident students dominate other students. In commerce, teachers can use this method for current issues in the economy like- Should the rich and wealthy in India be taxed more, will small businesses have more cohesion?, MBA is not doing good business leaders, Do corporate world promote entrepreneurship? Can we rely on Cryptocurrencies? etc...

SEMINAR

At university level teachers use seminar methods. In this method students or groups of students provide some higher level thinking topics to present .

In seminars, students present their data in an informal manner under the guidance of a teacher. All members participate in the discussion in an informal but orderly manner.. Here, the participants get an opportunity to clear their doubts. Eg. Teachers can give topics on theory subjects like customer perception towards email.,comparison between mutual funds and other investments , Effects of social media in business etc.. which elaborates detailed study about particular subjects and students understand keynotes in seminar,.the participants get an opportunity to clear their doubts

SYMPOSIUM

A symposium is one of the techniques of higher learning .The aim of this teaching method is to develop the abilities of criticism , respect of ideas, to present own ideas and find solutions through discussion.

Modern Teaching Methods

The importance of modern teaching methods and education equipped with high technology is felt over time and the new techniques have therefore begun to be introduced into education. In schools, innovative approaches and new technology-based gadgets have been added. New

devices such as: Wi-Fi Connected Computers or Notebooks, Digital Whiteboards. Using computers and the internet is a revolution in the education system in the present pandemic situation.In most higher level and university ,Educational institutions use computers at the level as the ICT tool to explain the content to the students

Flipped Classroom- - Flipped classroom can eliminate the need for class room time at all Some college and university professors now exchange lecture videos for students watching, assigning and collecting work via the online learning management system, and simply requiring students to attend office hours or short one-on-one instruction according to scheduled time depending on the students of that person need Necessary Technology for the flipped classroom; Screen and video recorder Video editor with quizzing or polling capacity Video captioning tools Secure video library Learning management system.Some points should considered in implementing flipped classroom Availability of videos easily ,constantly and securely Teachers can record videos from any location. Instructors can record anything whether it is easy or complex. Students can watch videos any time anywhere, or any device. Ensuring students can find any videos when they need them. The students are asked to study from their home itself with necessary instructions given, and the Classroom is converted into a centre of practical education and that only. Therefore, the entire education method is reversed to make it more fruitful and productive

PROJECT METHOD

This method is the direct outcome of John Dewey's pragmatic philosophy.In this method students acquire knowledge and skill by working for lengthy time to investigate to be reliable to difficult questions or problems.'Learning by doing', 'Learning by living', 'Problem orientation', and 'working in natural settings' are the four cardinal principles of this method. In commerce teachers use these methods for teaching points related to live projects .Eg- Information about E-Commerce, Analysis of insurance companies performance, Effects of Goods and service tax on price stability, Process of GST Registration, Evaluation of Methods of Cost Reduction in business

Steps in the Project Method

1. Providing a situation
2. Choosing and purposing
3. Planning
4. Executing the project
5. Evaluating the project
6. Recording

Cooperative Learning/ Collaborative learning/ peer learning

Documenting It is more of a value-based approach where learners appreciate the role played by and member of their team in completing the assignment.

Each member of the team is assigned with a particular set of activities which they need to accomplish before the deadline. They all act towards a shared objective which needs all their efforts for achieving the same with perfection. Think/Write, Pair, Share: Using three steps, students think about questions:

1. Think/Write: Students individually think about a topic that has been answered present, Forming and writing down thoughts of their own.
2. Pair: Students are paired in pairs to chat about their ideas.

3 Share: Student pairs, such as the whole class, share their thoughts with a wider community. Often, with a partner's encouragement, students are more comfortable sharing ideas to a group

Jigsaw:
Jigsaw is a collaborative learning methodology that provides students with experience in the acquisition and presentation, analysis and informed debate of new content. The creation of interdependence and status equalization is developed

Concept Mapping: Concept mapping is a collaborative method of learning that enables students working in groups to explain the similarities between words or concepts covered in the content of the course. Collaborative learning are useful for almost all classes.

Gamification
The teachers can make use of such interactive educational games for making the students develop their interest in studies.There are a variety of platforms available for them which arouses their interests in particular fields. Careful and appropriate use of the games on education will create a tremendous amount of interest and enthusiasm among the students to learn about the content and apply them in the virtual platforms as a practical activity

Problem-Based Learning
According to Dr. V.K Maheswari "It is a planned attack upon a difficulty or perplexity for the purpose of finding a solution." Problem-solving is a method whereby the pupils attempt to learn by working on problems.

The students are expected to observe, understand, analyze, interpret and find solutions and understand concepts. This technique is very useful for Subjects like Accountancy where students can find solutions to problems by analyzing and interpreting financial statements of business.

WORKSHOP
In a workshop, an Educational A series of meetings that highlight engagement and knowledge sharing with a limited number of participants or constructive activities to create something concrete.

In an educational workshop also something tangible has to be produced by the participants. Eg Workshop can be arranged for developing soft skills like Interview skill, Resume building, Leadership building skill, for increased analytical skill -workshop for business analysis, Tools of business analysis, workshops on Aptitude skill, etc…

Objectives of the workshop To develop the psychomotor skill of the learner. To make the subject matter interesting to the student. To motivate the students for a particular topic. To give training to teachers in specific areas.

BRAINSTORMING
Brainstorming is a group activity that helps students to reflect on a subject and create new ideas., It is similar to a discussion method which enables the students to do collective thinking. This approach is very beneficial for improving the engagement and participation of learners in the teaching-learning processes.

ROLE PLAY
Role-playing is an education.Method in which learners take on an identity other than their own and play the part of Somebody they've assumed a new name with. Teacher A, a parent, a parent,

a teacher A salesman, a boss, a banker, and even familiar inanimate objects in the Interaction with society may play a role in the course of action.

.SURVEYS AND MARKET STUDIES

In this approach, knowledge is gathered by asking the selected participants questions. The market survey can be used by a trade teacher as a means of teaching a complex concept or a process involving a variety of ideas.

Use of different teaching methods for commerce subjects

Subjects divided in broadly two category 1) Theory subjects2) Application base subjects

Application based subjects	Theory Based subjects
Financial Accounting Corporate accounting Management accounting Taxation	Management Banking Marketing Human resource Management Business Administration

Effective Methods of Teaching Accounting / Application based subjects.

There is the need for the Accounting teacher to teach proper Accounting concepts. This will encourage the student to develop appropriate abilities that will help him/her succeed.Exams and be employable in the field of work as well. An Accounting Professor is.Concerned with four effective methodological forms.

These include: I Skill-building- Basic skills are taught. (ii)Reality-learning. (iii) Problem-solving- Awareness, application and competency teaching (iv) Mindset, principles and beliefs teaching . It is important that teacher of accountancy must have mastery in accounting as it is a Proficiency-based subject and the teacher must teach accountancy subject in such a way that the student must master one level before another level is introduced, it is therefore most appropriate to teach Rules of recording translation and process of recording transaction in Double Entry system before the Trial Balance as the later is built on the former

1. For achieving mastery, Morrison inn Tonnel and Tonnel (1976) presented the following formula:

(i) Pre-test -determine the student's needs

(ii) Teach -present the required subject matter.

(iii) Test the result -determine mastery

(iv) Adopt the procedure - use the same procedure if they have learnt or improve on it if they have not mastered it before a second presentation

(v) Re-teach-re -teach or present the subject matter again. -

(iv) Re-test -determine mastery; continues to the point of mastery.

Osunla (1996) suggested many approaches in the teaching of Accounting.

Among these approaches are (1) Developmental Approach (2) Journal Approach (3) Leader approach (4) Balance Sheet Approach and (5) Balance Sheet Equation.

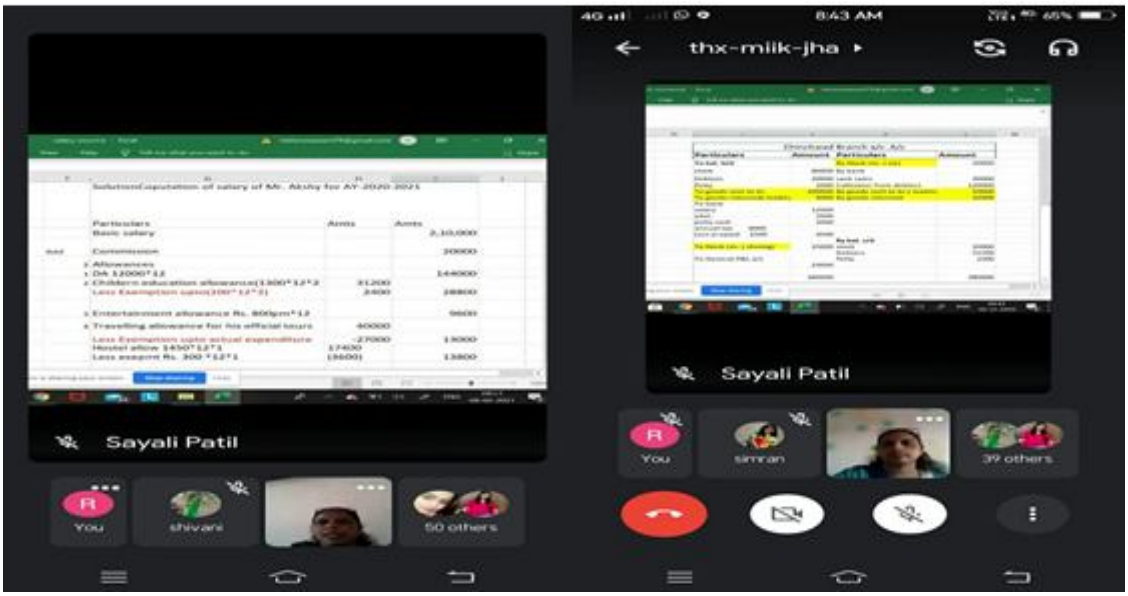
1 The Developmental Approach -In this approach teacher stat from simple concepts to complex concepts, teacher should arranged ideas or teaching process sequentially to

understand problem through accounting cycle The Journal Approach: Teachers use this approach as they start their teaching from the original entry, proceed to classifying and post them to the ledger account. Through this teacher can provide quick knowledge to students who want to learn accounting quickly.

2. The Ledger Approach This approach uses for fact learning and skill- building as teacher teaches students preparation of various different form of accounts, student need to understand format of drawing accounts according to questions, eg. in piecemeal distribution of cash (dissolution of firm) students need not prepare accounts in " T" form they have to understand statement format for solving questions, on the other side when they want to solve single entry system teacher explain important accounts and their format which increase their skill.

3. The Balance Sheet Approach- in this approach points considered from beginning and then the final example gives the students a clear idea of the situation or teachers objectives and importance of accounting records.at this stage teacher can explain various equations and conclusions of ideas In addition to above for account, corporate accounting, Taxation subject teachers should use software like excel to solve their numerical problems and solutions with the help of flipped classroom concepts.

Teaching through excel sheets for account and taxation subjects.



For theoretical subjects teacher can use -

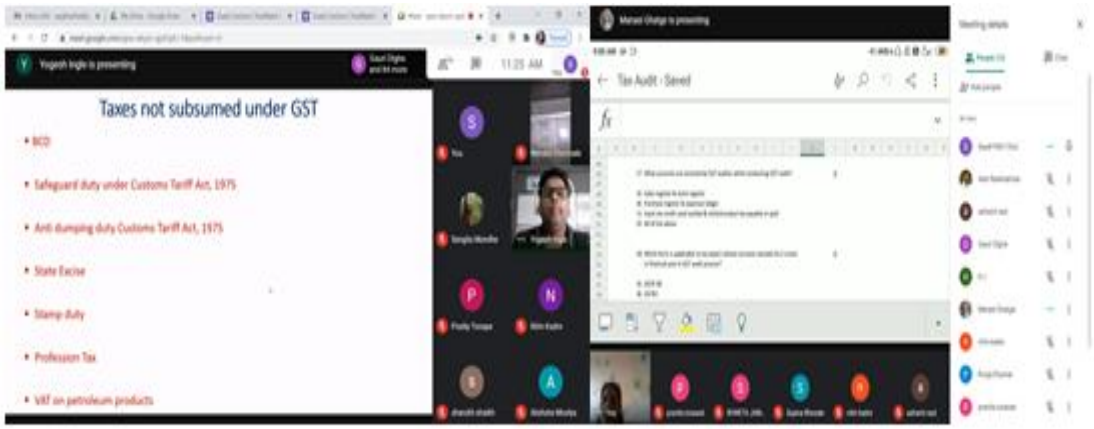
Traditional teaching method-

1. Lecture method -in which teacher can explain various concepts easily.
2. Discussion method -For discussion of important points.

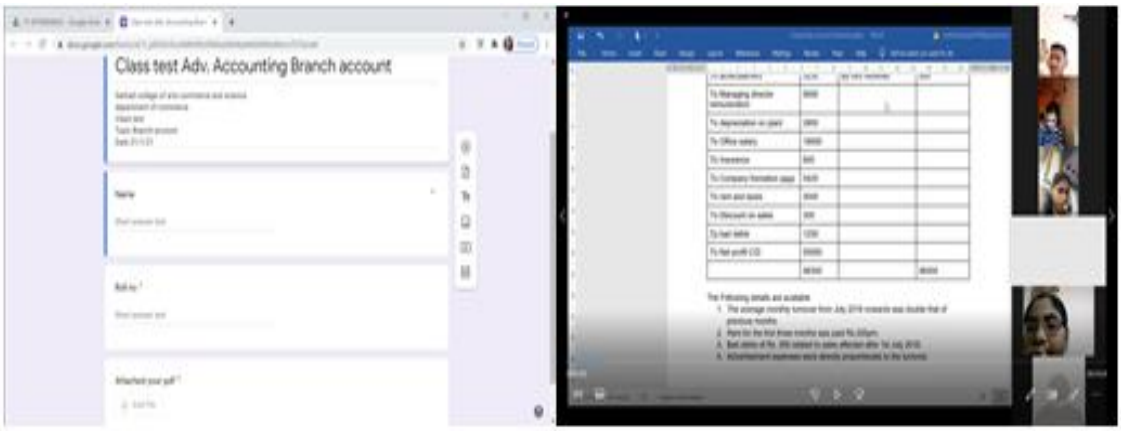
Modern methods-

1. Flipped Classroom concepts- For providing learning access from anywhere, by watching videos and making self notes is possible with this method and students can get experience of self learning.

2. Role play method- This method is helpful to clear concepts about people on work , i.e. students can play manager role then he/she got knowledge about role, responsibility and authority related with managers work.
3. Project based method-This method helps students to understand real life situations and experience on field / internship work
4. Gamification- As students love to learn through games, teachers should create quiz puzzle, competitions in such a way that they will be clear about concepts, and acquire knowledge of concepts. Teachers should establish various levels of game which create interest among the students about learning.
5. workshop - this method gives scope to learn particular concepts in depth. Students are now able to analyze the situation or problem



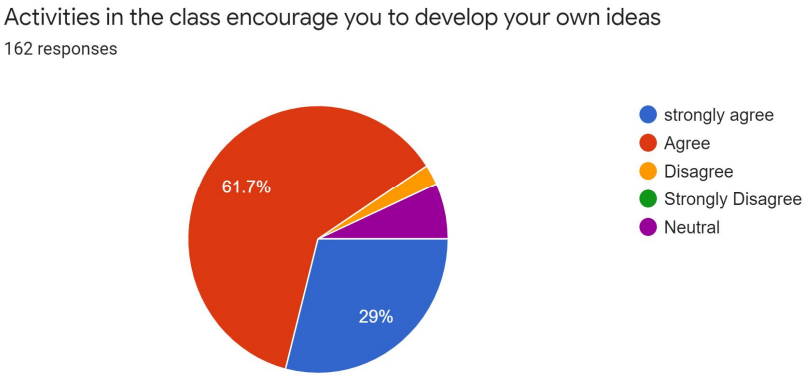
Guest lecture activities for providing expert knowledge provided through online mode.Students preparation and presentation is possible. PPT presentation and MCQ preparation as participative learning method can be utilised for teaching effectively Students evaluation process for online mode through google form objective as well as descriptive pattern.



Data analysis

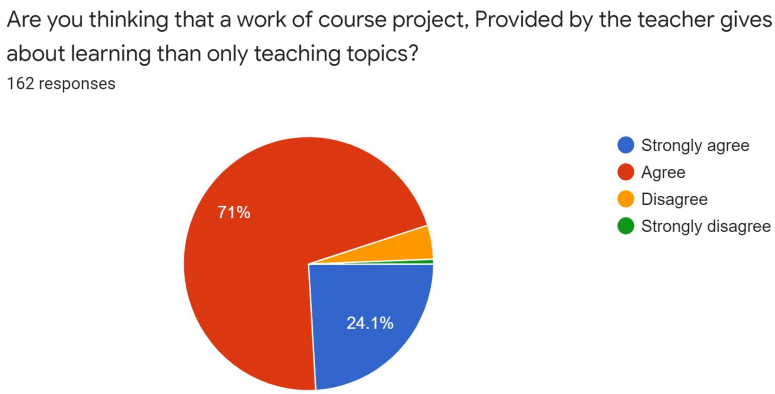
Primary Data is gathered from 160 respondents through Google form .Analysis of Survey shows that students enjoy the learning process when teachers use innovative and creative teaching methods

1.



Strongly Agree	From the number of respondents 29% respondents strongly agree that activities increase their thinking ideas.
Agree	From the number of respondents near about 100 (67%)students agree about their creativity thinking increases when teachers arrange in the teaching learning process.
Disagree	2.% respondent are disagree with this statement
Strongly Disagree	No. Response recorded
Neutral	6.8% respondents are showing neutral responses.

2



Strongly Agree	From the number of respondents 24.1% respondents are strongly agree about project and practical work gives experience of particular areas
Agree	From the number of respondents 71 % respondents are agree about project and practical work gives experience of particular areas
Disagree	7.% respondent are disagree with this statement
Strongly Disagree	Only 1% of respondents disagree with this statement.
Neutral	No responses are recorded.

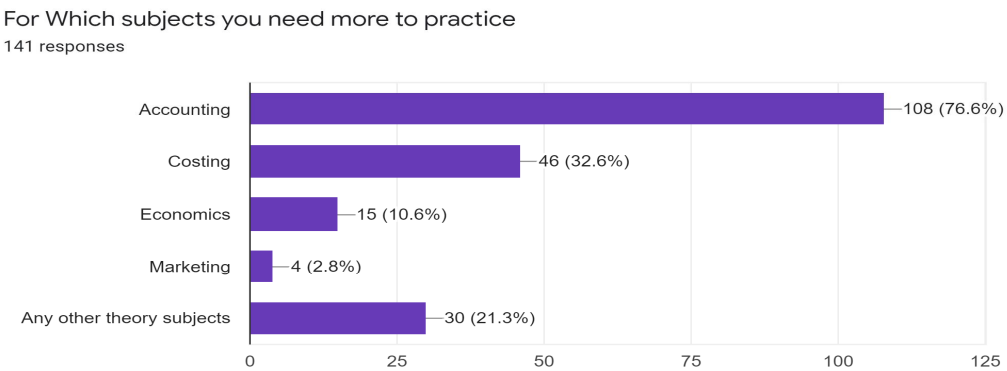
3

Strongly Agree	From the number of respondents 28% respondents strongly agree about workshop and seminar gives lots of expert knowledge.
Agree	From the number of respondents 56.8% respondents strongly agree about workshop and seminar gives lots of expert knowledge.
Disagree	1.% respondent are disagree with this statement.
Strongly Disagree	No Response recorded.
Neutral	14% respondent showing neutral view.

4. **Give some example of your teacher while she uses collaborative learning (eg. group presentation etc..)**

For these questions respondents record responses like- Teachers are using PPT, group projects ,Assignments, Presentation, Online presentation, ask questions about chapter, Group communication and project, Using excel presentation while teaching .

5.



As per respondents, in commerce they need more attention on application and numerical base subjects so teachers of such subjects chose methods like teaching through PPt, use EXcel sheets for solving numerical type questions which gives ideas to students on how to apply skills to solve problems. About 76% respondents reply that subjects like accounts need more practice

6. **Suggest any method for Accounting subject for teaching efficient way (using excel, ppt or any other)**

Almost all above 80% respondents agree that using PPT and Excel sheets for presenting and solving numerical problems is helpful for understanding concepts .

2. Secondary data is collected through Researchpaper, Articles, and journals.

SUGGESTIONS

Engagement of Resources-

Lecturers, experts and students were from different knowledge areas and had different teaching, presenting and learning styles. This varied experience increases whole experience and leads toward some inventive characteristics into the traditional approach by the teamwork of multiple viewpoints, opinions and experiences.

So teachers give project work as a part of internal assessment work.

Creating collaborative culture- It is essential and ensured by the teacher that teachers and students work towards objectives of the experiment. In class room teacher can create culture for sharing ideas, problem solving session which give opportunity to students to work out of box

Use of information technology:

Teachers should consider and implement ICT tools in the teaching learning process , which create good communication and ease in information exchange.

It enables teachers to give students the practical knowledge of the following aspects of commerce-How to file income tax returns online; How to deposit several taxes online; How to register businesses online; How to raise funds online; How to trade in stock exchange online; How to do Net Banking; How to do commercial correspondence through emails; How to prepare, maintain and evaluate financial records in electronic form

CONCLUSION

Modern teaching methods have many advantages. Such benefits, however, are the drawbacks to conventional teaching methods. In commerce, the teacher and instructor should use a combination of traditional and modern methods of teaching.

Modern teaching methods are more interactive than traditional methods, students' interest in the learning process can be increased by videos and animation. In the Flipped classroom, ICT based lecture, visual medium is way better than any other medium to give instructions. It helps to memorize the concept fast and for a more extended period than reading. The use of virtual mode and teaching material prepared once by the instructor may be used for different purposes. E.g when students are absent for a longer period he can learn through recorded video,for remedial lecture, for revision purpose so it is less time consuming and teacher can focus on his/her professional development. It helps teachers to record their lectures by availing recorders so that students may listen to them as many times as they wish to understand the matter clearly and deeply as per their needs.

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INNOVATIVE PRACTICES AND TOOLS USED IN TEACHING COMPUTER SCIENCE

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ABSTRACT
Facilitating computer science courses in today's student population needs a tutor to be innovative and artistic associated with their own impactful online presence. Within the current on-line learning atmosphere (also called e-learning), keeping students' thoughtfully engaged and actuated whereas dispensing the desired course content necessitates college enabling a secure, non-judgmental atmosphere whereby views and private and skilled experiences square measure inspired. The professional person should exhibit associate educator-facilitated active, student-centered learning method, whereby students square measure command in charge of their active participation and autonomous learning whereas equalisation an assistant role to more enhance the training method. Basically, teaching should embody 2 major parts causing and receiving data. Ultimately, an instructor tries his best to impart information because he means he understood it. So, any communication strategies that serve this purpose while not destroying the target might be thought of as innovative strategies of teaching. the utilization of innovative strategies in instructional establishments has the potential not solely to enhance education, however additionally to empower folks, strengthen governance and impress the trouble to realize the human development goal for the country

***Keyword**: Innovative methods, computer science, Learning objective.*

INTRODUCTION
Computer science is the study of computer and computing. It contains different courses like Theoretical computer science, Programming languages, System programming and operating system together with algorithmic foundations, hardware and computer code, and their uses for process info. It also includes knowledge structures, pc and network style, modelling knowledge and knowledge processes, and AI.

To improve overall growth of students innovative methods are used. Innovative methods include different activities related to Participative learning, Experiential learning, Innovation & creativity, Problem solving etc. These activities can be conducted in classroom or online mode.

INNOVATIVE METHODS
The paper will provide the details for each of these activities and the learning objectives. The activities included are

Sr. No.	Name of Activity	Sr. No.	Name of Activity
1	Seminar	9	Video making
2	In a minute paper writing	10	Dry run programming
3	Brainstorming	11	Poly- Programming writing
4	Process state transition activity	12	Poster making
5	PPT presentation by students	13	Model making

6	Projects	14	Case study solving
7	Research paper writing	15	Query solving
8	Review of research paper	16	Blind programming

Table : Innovative activities

I **Seminar-** In this activity one topic was given to students. Students prepared that topic and presented information related to that. They discussed various points related to the topic.

Learning Objective –

1. Knowledge about the topic.
2. Improvement in discussion skills.

II **In a minute paper writing -** This activity is a highly effective technique for checking students progress both in understanding the material & in reacting to the course material. In this activity time limit was 6 minute. In the first minute students write their ideas or concepts on paper & they present their ideas in the classroom.

Learning Objective-

1. To provide a suitable platform for dynamic development of students.
2. Development of presentation skills, confidence.

III **Brainstorming-** Each member of the meeting participates in a round-robin brainstorm, adding one idea to the brainstorm. The first rule is that at least once before someone may contribute a second idea or critique, elaborate on, or address all of the ideas, the group needs to do it around the entire room. The second rule is that no one can say, "My idea has already been said." When they've had more time to reflect, you can come back to the person at the end. Before the brainstorm meeting, it is also a good idea to give the team some time to plan ideas.

Learning Objective-

1. Promote creative thinking
2. Bring a team together, and help students to land on the perfect idea

IV **Process state transition activity-** In this activity students appreciate different approaches to process & thread management. The members of the class were broken down into sets of 4-6 students. One of the students was selected as the operating system, one was selected as timekeeper & other became the process. Students in the group were sent to the chalkboard. The students draw & manage memory slots, CPU utilization, process state diagram, timeline and PCB. Rules for process were issued to each student assigned a process role. At the end of activity all groups explain their results & discuss the differences in their results.

Learning Objective-

1. Different approaches to process & thread management.

V **PPT presentation by students-** In this activity one topic was given to students. Students prepared PowerPoint presentations on that topic and presented that presentation.

Learning Objective –

1. Knowledge about the topic.
2. Improvement in presentation skills.

VI Projects- Projects are important for actual implementation of knowledge to solve real life problems. In this students select topics, platforms like software, hardware for projects. Students also prepare documentation of projects.

Learning Objective-

1. Solve real life problems
2. Prepare documentation.

VII Research paper writing- Students wrote different research papers. In order to study, gather resources, take notes, and develop an outline, students choose a subject. To produce a rough draft of their paper, students review their notes and use their outline to coordinate their work and get their thoughts down on paper. Students concentrate on their report's material. Before taking their work public, learners get a final glance. Students learn how to carry out a review process, Peer evaluation, self-assessment, and instructor conferencing are included.

Learning Objective-

1. Steps to write research paper
2. How to check plagiarism?
3. Paper publication
4. What is IEEE standard for writing research papers?

VIIIReview of research paper- Students selected one research paper written by another writer. They study that paper and write reviews on that research paper. Students understood how to write research paper, format of research paper.

Learning Objective-

1. How to write a research paper?
2. What is IEEE standard for writing research papers?

IX Video making- Topic for video making was given to students. Students make videos on that topic using different tools and software. They understood how to record video and edit video.

Learning Objective-

1. Recording of video.
2. Editing of video.

X Dry run programming- In this activity series of dry run exercises were given to students. Students solved this short fragment of code working out what they do on paper. Students used a dry run table which reinforced semantics of the concepts. This activity helped students to understand Programming, assignment, variable, values, declaration, initialization , sequencing

Learning Objective-

1. How are programs executed?
2. Programming, assignment, variable, values, declaration, initialization, sequencing concepts.

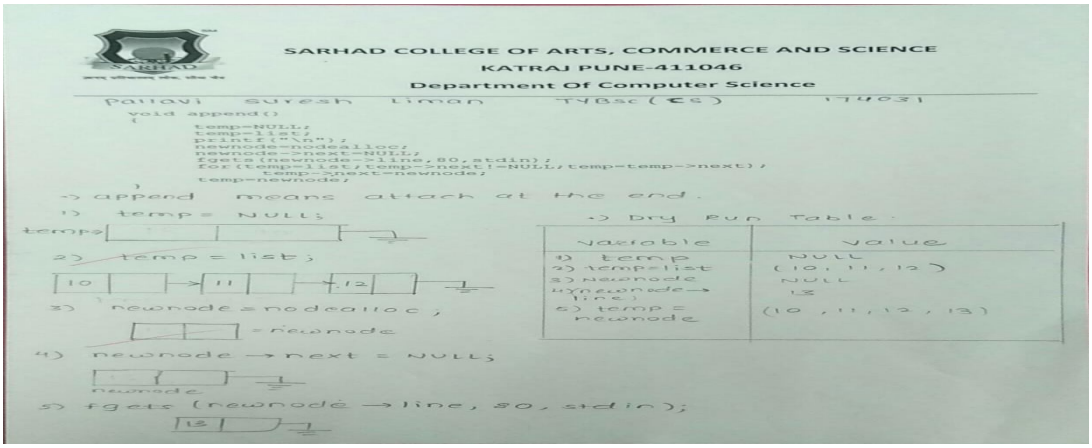

Figure 1: Dry run activity sheet

XI Poly-Programming writing- In this activity two problems were shared. Students wrote solutions to those problems using different programming languages like C, C++, JAVA, Scala, Python and shared their screen and executed programs. Winners of this competition were students who submitted programs in more languages and in a short time period.

Learning Objective-

1. To understand syntax of each programming language
2. Understand logic and algorithms to solve problems.

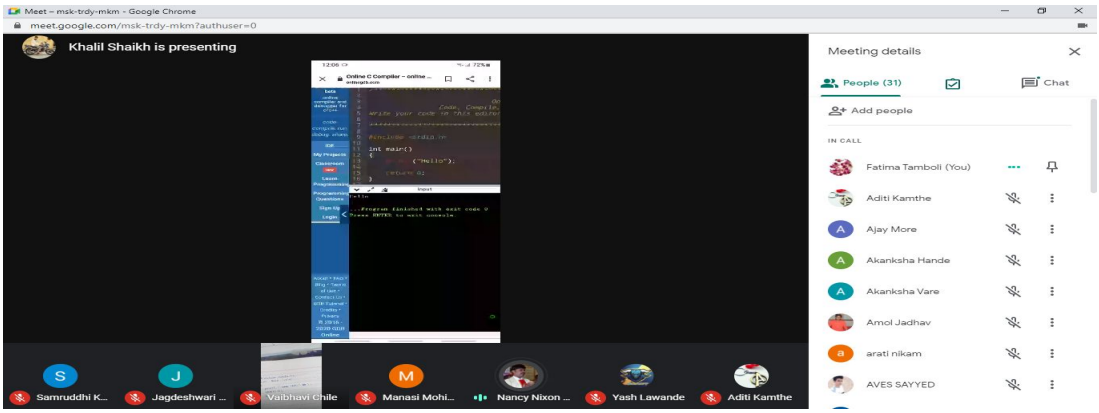

Figure3: Student submitted program

XII Poster making- This activity improves creativity in students. Topic was given to students for poster making. Using different material students created posters. Poster making can be done in pairs or groups with students working on a common topic or separate topics. Abstract topics help to stimulate the flow of ideas and encourage students to think out of the box. Presenting the posters in front of the class also opens up a forum of discussion for the students.

Learning Objective-

1. To develop students' interpersonal and intrapersonal skills by working together in groups.
2. To gain application, analysis, and synthesis skills.
3. To think out of the box and to inculcate the idea in the most effective way.

XIII Model making- On a given topic and by following given rules students made different models using various material. This activity improves creativity among students.

Learning Objective-

1. To gain application, analysis, and synthesis skills.
2. To think creatively and to inculcate the idea in the most effective way.

XIVCase study solving (RDBMS)- A relational database helps in maintaining the data integrity, data accuracy, reduces data redundancy to minimum or zero, data scalability, data flexibility and facilitates makes it easy to implement security methods. In this activity one case study was given to students. Students solved this case study online using online postgresql.

Students understood the following points during solving case study.

1. Finding entities and attributes.
2. Finding relationships between relations.
3. Creating relations(tables).
4. Inserting records into relations.
5. How to write queries?

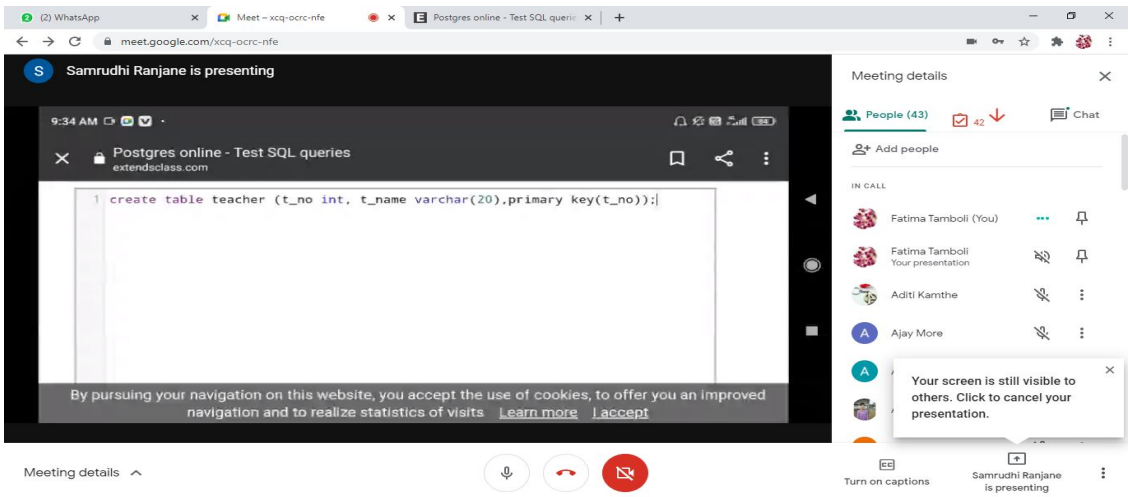

Figure2: Student solved case study.

XV Query solving- In this activity, a set of queries were given to students. They solved it on paper. After writing queries on paper students turn on the computer and type a postgresql query and execute the postgresql query.

Learning Objective-

1. To understand writing postgresql query.
2. To understand execution of postgresql query.

XVIBlind programming - In this activity, a set of programs were given to students. They solved it on paper. After writing programs on paper students turn off the monitor and type a program. After that they turned on the monitor and executed the program.

Learning Objective-

1. To understand the syntax of programming language.
2. To understand the execution of a program

TOOLS AND SOFTWARE USED

i) Google classroom

ii) Whats App

iii) Google Meet

iv) Zoom

v) Sarhad college app.

vi) Online compilers for programming languages

vii) Online platform for sql query solving

viii) Microsoft PowerPoint for ppt

ix) Microsoft word for report writing

x) Google forms for exams, class tests

xi) A-Z VIDEO RECORDER for video making.

xii) Add on Certify em for certificate generation.

CONCLUSION-

As in all industries, creativity, as opposed to the quantitative expansion seen so far, would be important for bringing about qualitative changes in education. To increase productivity and enhance the quality and equity of learning opportunities, these improvements are required. While education is not a change-averse industry, it has not managed to harness technology, with changes already taking place in classrooms. In the same way as other public sectors, it has not managed to leverage technology to increase productivity, boost production, increase quality and promote equity. At the same time, education can also encourage society-wide creativity by acquiring the right skills to nurture it. These skills can be fostered by appropriate training, including critical thinking, ingenuity and imagination. Governments should develop smart innovation strategies for education with the right policy mix to give meaning and purpose to innovation, including creating an innovation-friendly culture.

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INNOVATIVE ASSESSMENT METHODS AND TOOLS FOR ONLINE EDUCATION

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ABSTRACT
In this article, we are focusing on different methods of assessing in offline and online mode. Assessments are key components of the overall education system and play an important role in the learning journey of learners. It is the bridge between teaching and learning. Assessment makes it easier for students to learn, teachers to improve teaching, administrations evaluate how to distribute resources and policymakers to evaluate the effectiveness of pro-education.

***Keywords**: Online education, Assessment tools, Google form Add-ons, Google Classroom, Pear deck, Padlet, Timer and proctoring*

INTRODUCTION: Analysing students how they can understand and are able to give output in all the subjects is Assessment. Assessment is very significant to track progress and to plan next steps. The various techniques involved in assessment are the tools and instruments to collect the information about how the students can demonstrate desired learning outcomes. There are a number of methods used to evaluate student learning outcomes. Even though the responses from student surveys are informative, when they are combined with test results of students they will be more meaningful. Direct methods of assessment help us to analyse the students' learning while indirect methods help us to analyse those students to reflect on their learning. Some of the direct methods from which we can assess are slip tests, seminars and webinars, PPT presentations by students etc. and some of the indirect methods for the assessment are surveys, Online questionnaire and interviews. The course marks of students are a key basis of data about the achievement of the students. This data is not sufficient for the measurement of student's learning outcomes. There are many types of course work that can be used for the assessing Student Learning Outcomes. The rubrics are developed for instructors to use for grading and scoring the assessment. These rubrics can be used by these programs Course Exams Course assignments/ projects Essays, written exams, aptitude tests, research papers, etc. Below are the guidelines to follow when selecting assessment methods for a particular program: To collect information that will answer the program's questions To use different methods to assess each student learning outcome To include both indirect and direct assessment methods. To include both qualitative and quantitative methods To choose various methods that allow the assessment of both strengths and weaknesses In this paper we are giving a brief review of various assessment techniques used for analysing students in both direct and indirect methods. Hence these types of assessment give: Different ways for monitoring and learning of the student's progress. It also helps in understanding their student's progress for providing report to parents

TYPES OF ASSESSMENTS:

a. **Diagnostic Assessment**: It is also called Pre-Assessment. Assessing the students before starting a new topic. Before creating any instruction, it is necessary to know what kind of students we are teaching. Assessing a student's strengths, weaknesses, knowledge, and skills prior to instruction/course is called a Diagnostic Assessment. It is used to identify current knowledge and/or misconceptions about a topic. Based on this data ,we can plan our own instruction. Eg: Pre and post-tests, Self-Assessments, Interviews, Observations, Polling

b. **Formative Assessment**: It is used in the first attempt of developing instruction. In this method, assessing a student's performance during instruction, and usually occurs at regular intervals throughout the instruction process is done. It is used to monitor the student learning and to provide feedback during the course. It is used for finding growth over a time. Eg: Students Observations, Homework, Peer reviews, Informal presentations, Think/Pair/Share, Visual Thinking Strategies, Quiz, Feedback

c. **Summative Assessment**- Measuring a student's achievement at the end of instruction. It is to find mastery and performance levels. Long term benefits can be determined by the students who attended the course or test. Eg: High Stake tests as Mid examinations, End University exams

d. **Norm-Referenced Assessment:** Comparison of a student's performance against other group/norm of students. It is relative grading. Eg: SAT Test, IQ Test

e. **Criterion-Referenced Assessment**: It tests the performance of a student against a target, particular purpose, or predefined standards of performance. It is an absolute grade that tests what students are supposed to know and be able to do at a particular stage of their education. The Smarter Balanced Evaluation Test, for example: ACTI Test (SBAT)

f. **Interim/Benchmark Assessment**: Frequently student's evaluation. On end-of-the-year summative evaluations, it can predict student performance. Eg: Attitude scales, Inventories of interest, Logical thought tests/checklists

g. **Confirmative assessment** : It is an extension of summative assessment. When an instruction has been implemented in a class room, it is necessary to take an assessment that to check still is it a success after a year or not.

This Paper focusing on Formative assessment:

FORMATIVE ASSESSMENT TOOLS FOR ONLINE EDUCATION:

Google Forms:

For assessment teachers can use Google forms, because google forms are very important for data collection, survey, attendance, test paper, contact info, invitation, assessment, many templates are available, teachers and students can use it easily. These are used to create forms with hyperlinks, images, and videos. Teachers can add extra facilities in existing google forms by using option Add-on. Many Add-ons are available

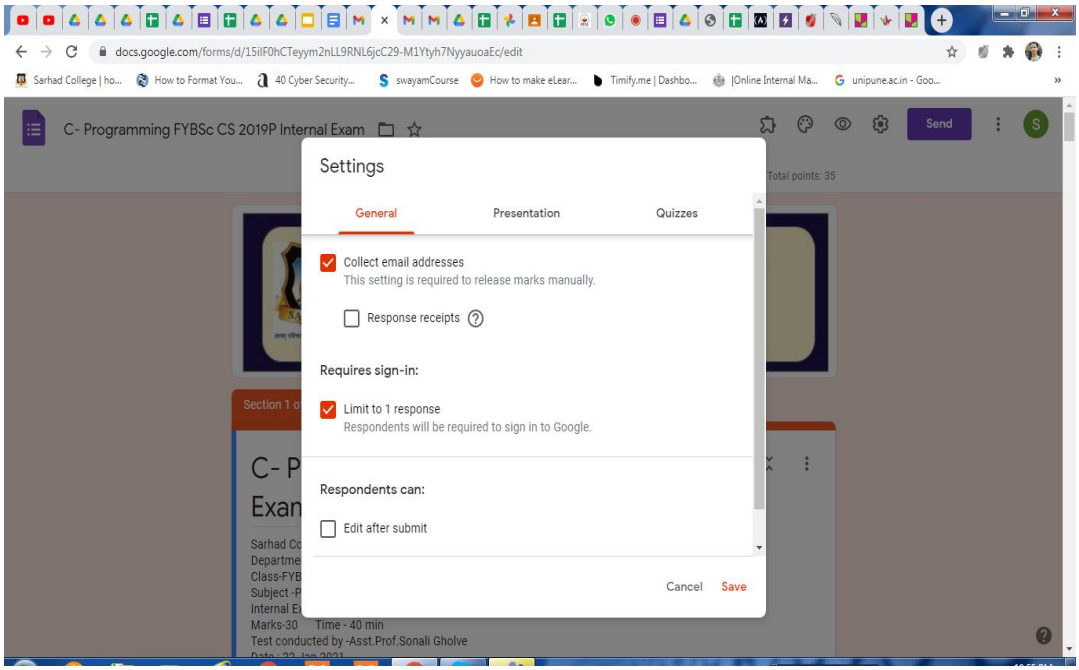


Fig1: Google Form setting-General

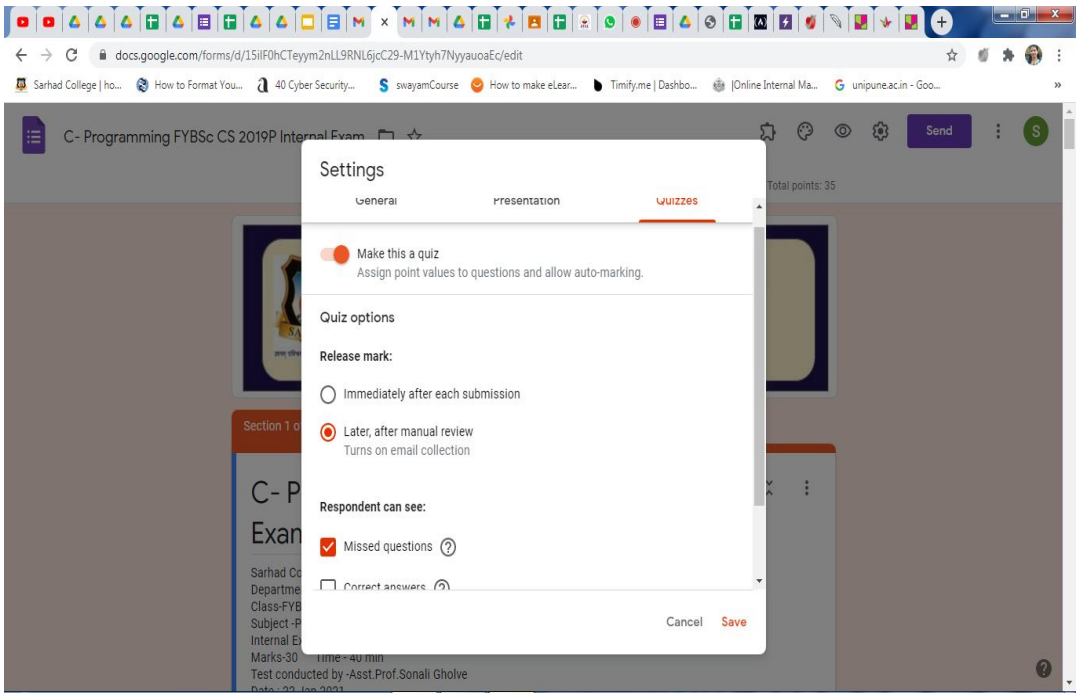


Fig2: Google form settings- Quizzes

Using above settings you can stop cheating. Limit to 1 response, Change Question order, Release marks after manual review so respondent can't share answers. Change settings as per above image.

You can also give data validation to prevent unauthorised access to your test. For this use option response validation to prevent sharing your quiz, you can also shuffle option order. Add sections, so students can't see the main question while they are checking using fake ids.

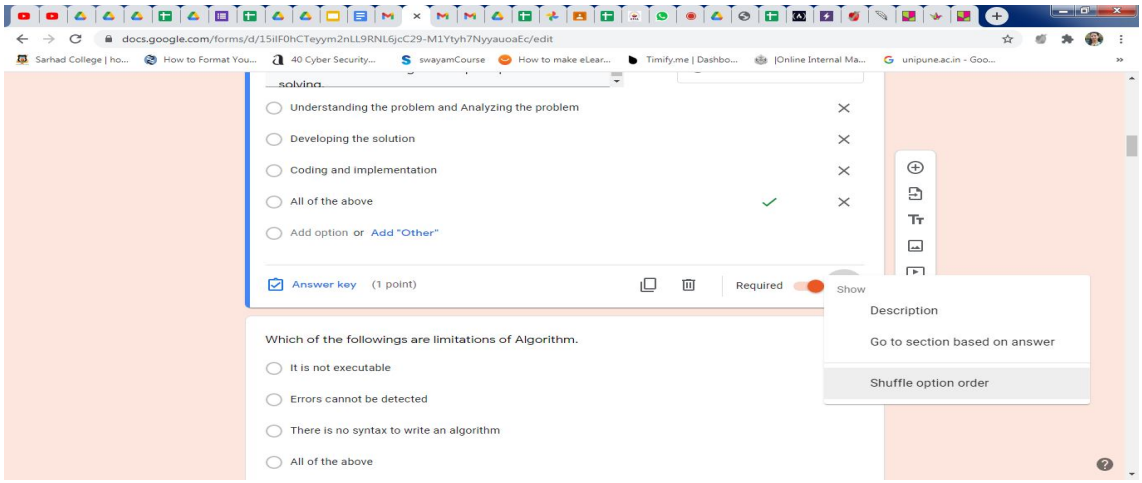


Fig 3: Shuffle option order

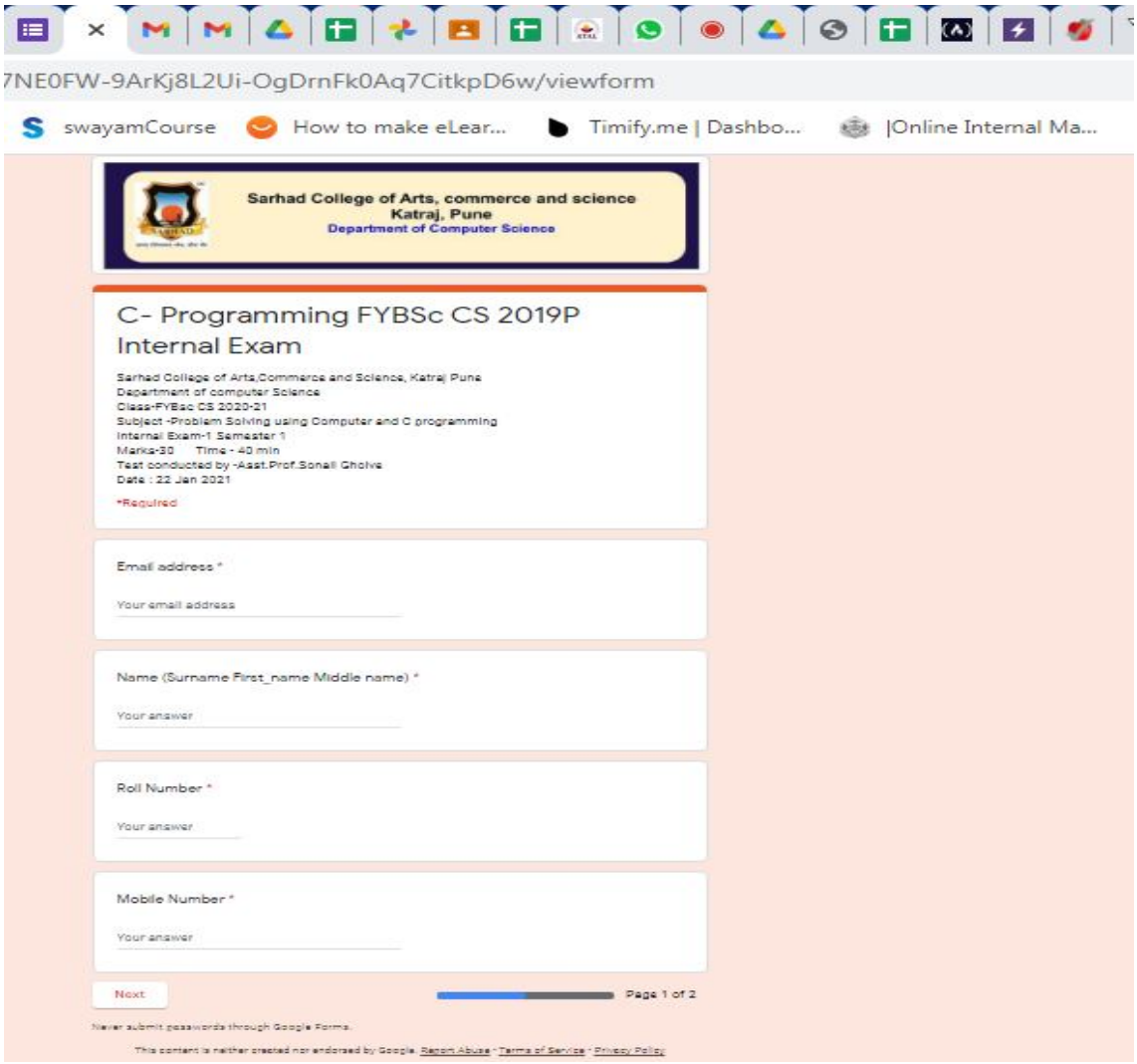
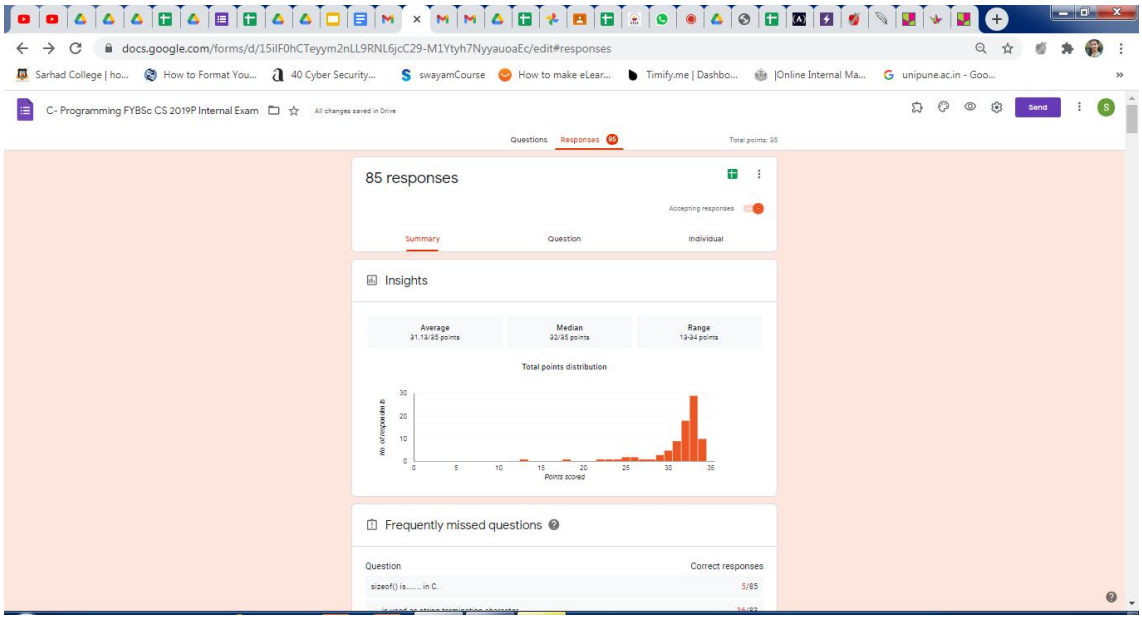


Fig 4: Add sections in form

Teachers will get Summary reports after the test automatically, import google sheet for more details. You can release your score after checking. It's also possible, you can set answers for auto checking.



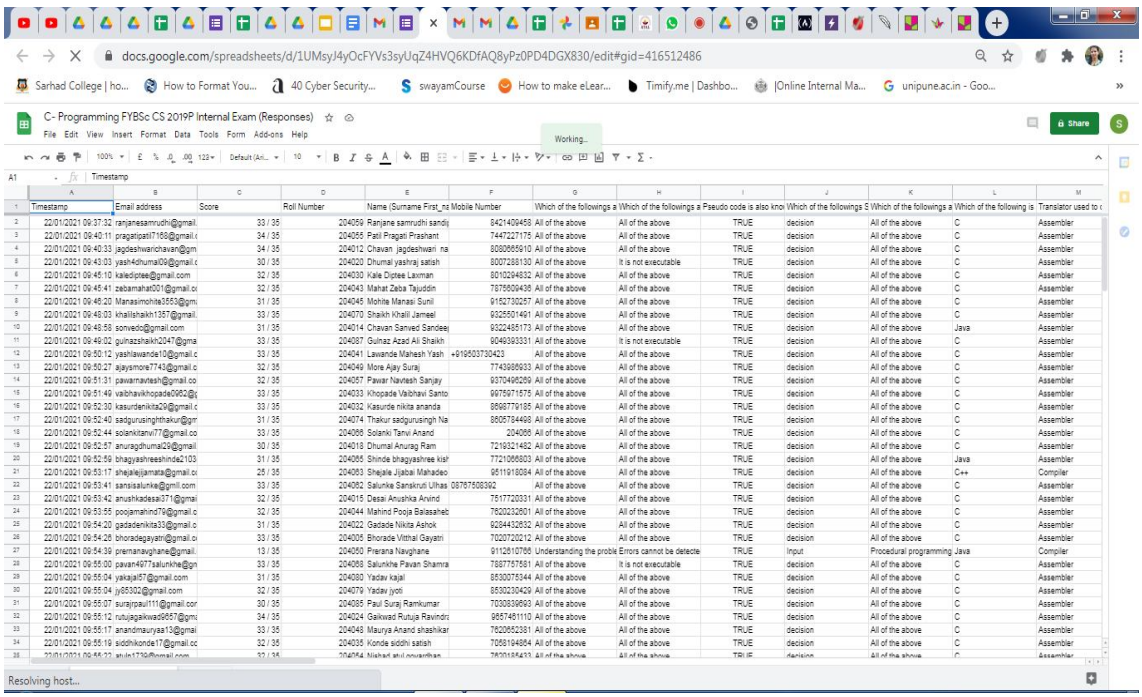
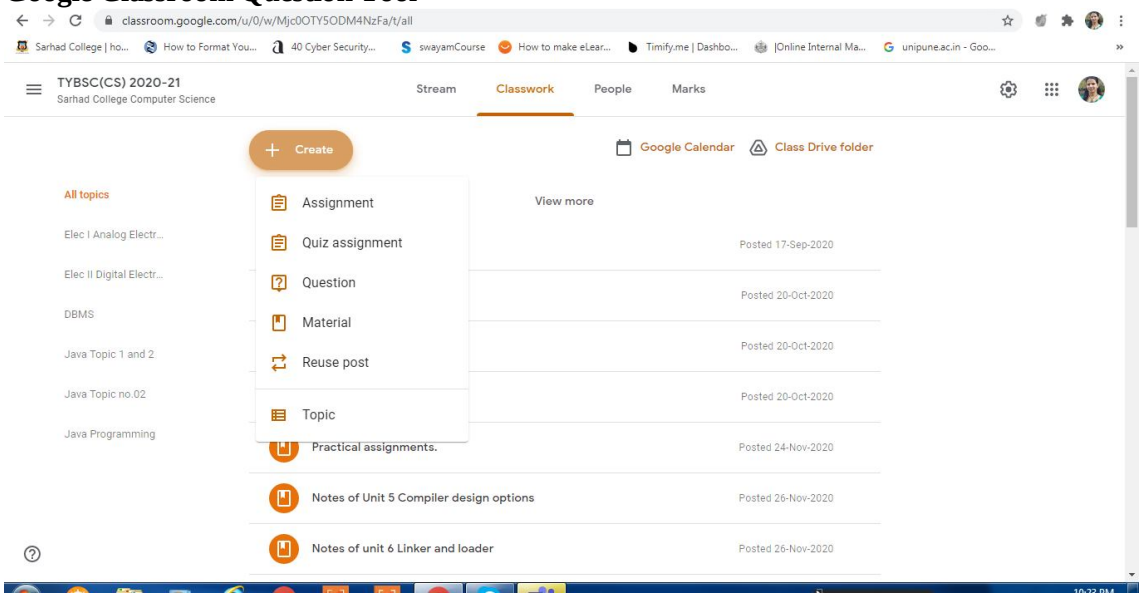


Fig 5: Summary report of test

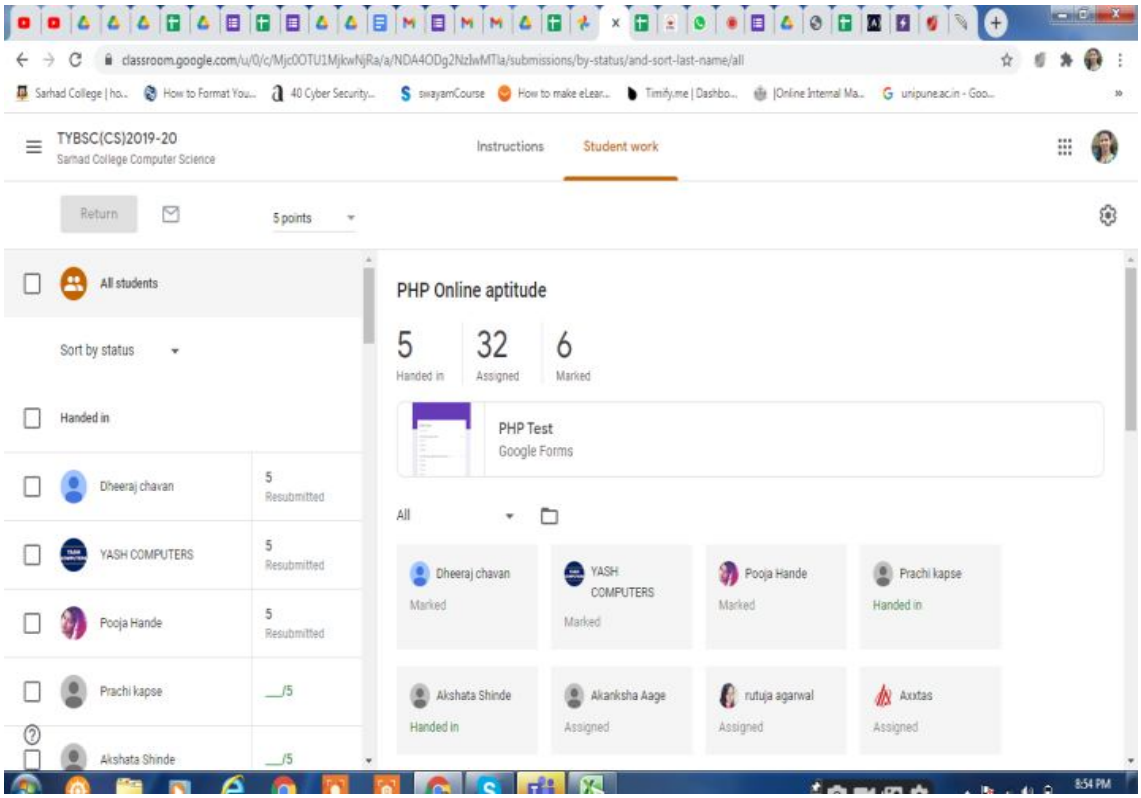
Fig 6:Responsessummary in Googe sheet

For some subjects it is not possible to write answers online, so in that case you can give the option to upload files. Students can write answers on paper in front of the camera and after this they can upload written scanned documents. Teachers will get all these data in a single folder on their respective drive.

Google Classroom Question Tool



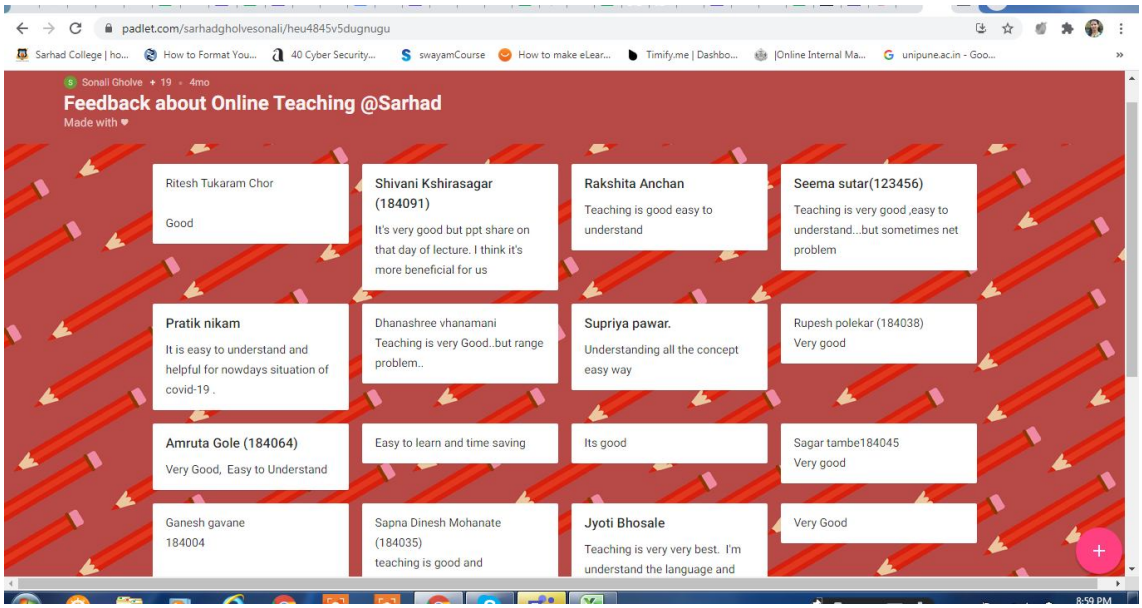
Inside Google Classroom, you have the option to create Assignment, Quiz assignment, questions and share that with students. You can make this collaborative, or just have the answers viewable for you the teacher.



You can check who had attended the test, assignment of test and detail report of test.

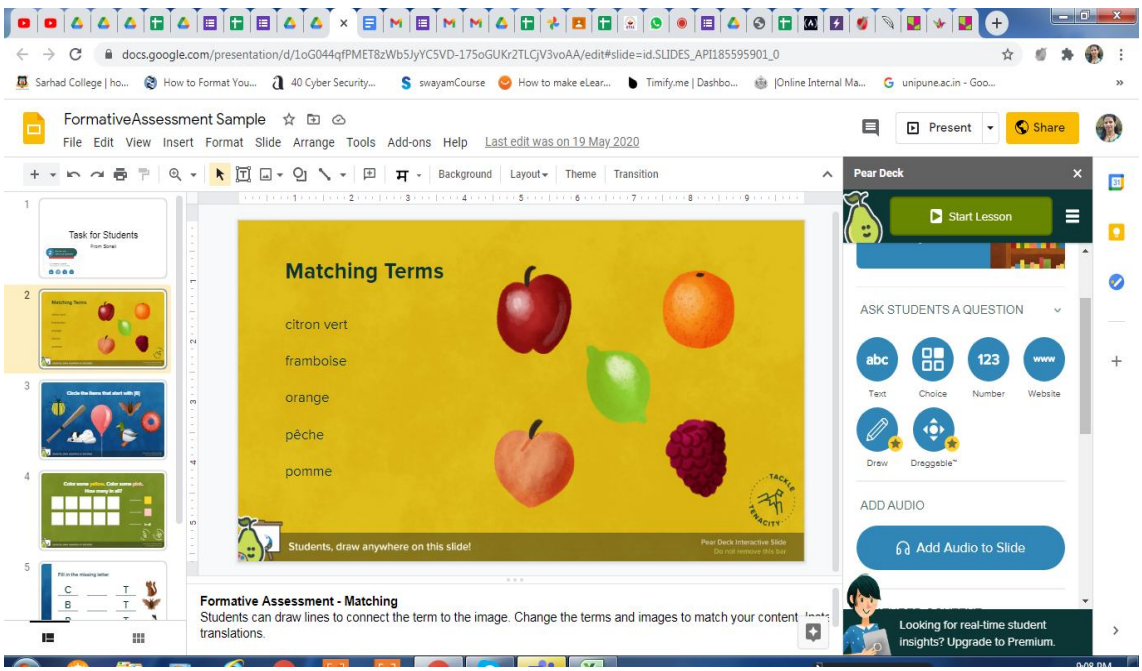
Fig 7: Create assignment in Google class

Fig 8: Task details



Padlet: Teachers can ask any questions and can receive input at runtime from others. A free website for text, photos, videos, and files to be collected and exchanged. It provides facilities like as an online bulletin board on that users put "digital sticky notes " to communicate and interact with teachers and students. Text, web links, uploaded files, images, and video can contain these digital stickies .What's amazing about Padlet is that so much functionality is offered. It works on any computer, and you can exchange text, links, upload files, images, videos, just about any kind of information, just about any kind of answer. There are also many different ways you can design your pages. Customize the background, organize information in new ways. (Free trial available in that you can create 3 padlets)

Pear Deck- Interactive presentations using Google slide add-on



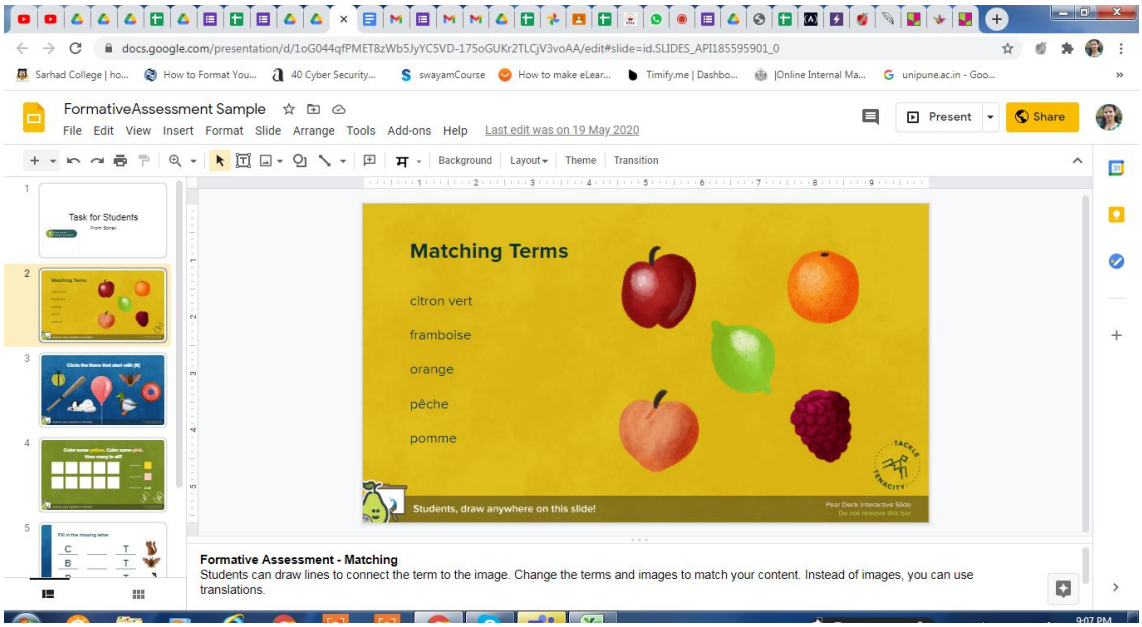


Fig 10: Pear Deck control menu Fig 11: Live interaction option

Pear Deck is a web-based formative assessment tool that allows you to create interactive lessons using G Suite tools. Pear Deck providing a library of many free templates that you can use to create interactive assessments in your presentation. Some features are free.

Assessment Tool: We are using different assessment tools like form, test, rubric, etc. that is used to collect and analyse data for each outcome. The actual product that is delivered to learners to determine whether they have achieved a clear learning outcome (s).

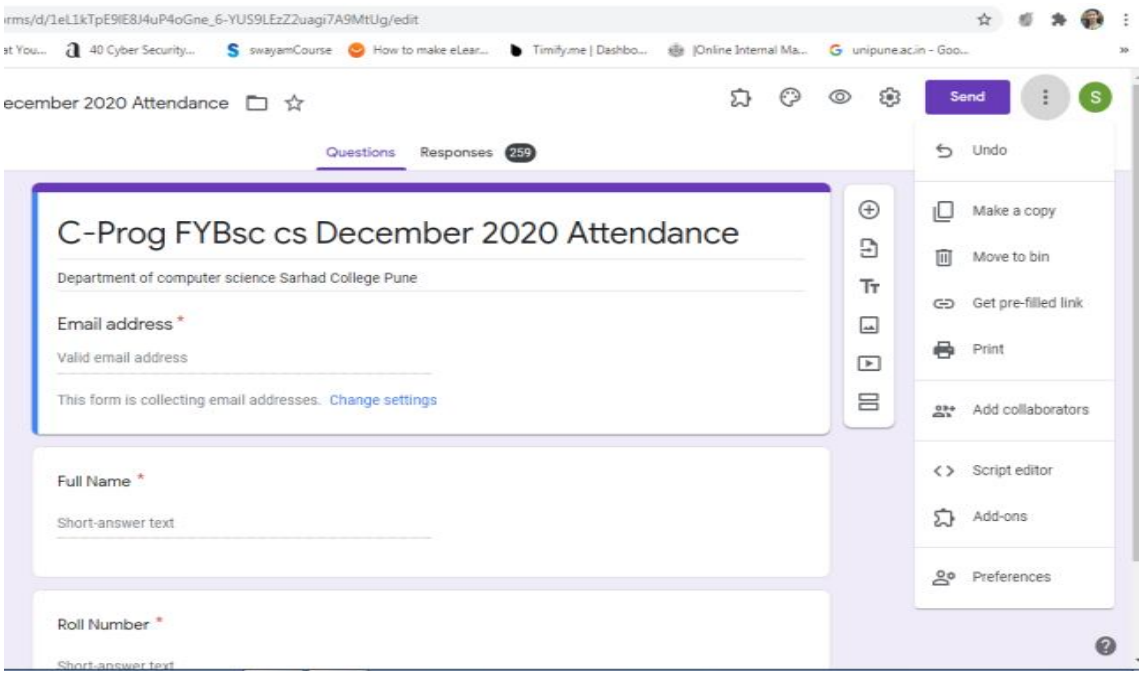


Fig 12: Add-on option

Google forms Add-on are very important for assessment: Education and teachers going digital in mode, Google Forms are very important means of communication and assessment.

Teachers can install add-on very easily, just need to open Google forms and use three vertical dots for more options, then click on add-on and select particular add-on and install it. After installation will get one puzzle shaped like an icon, just click on it so there is a list of add-ons installed.

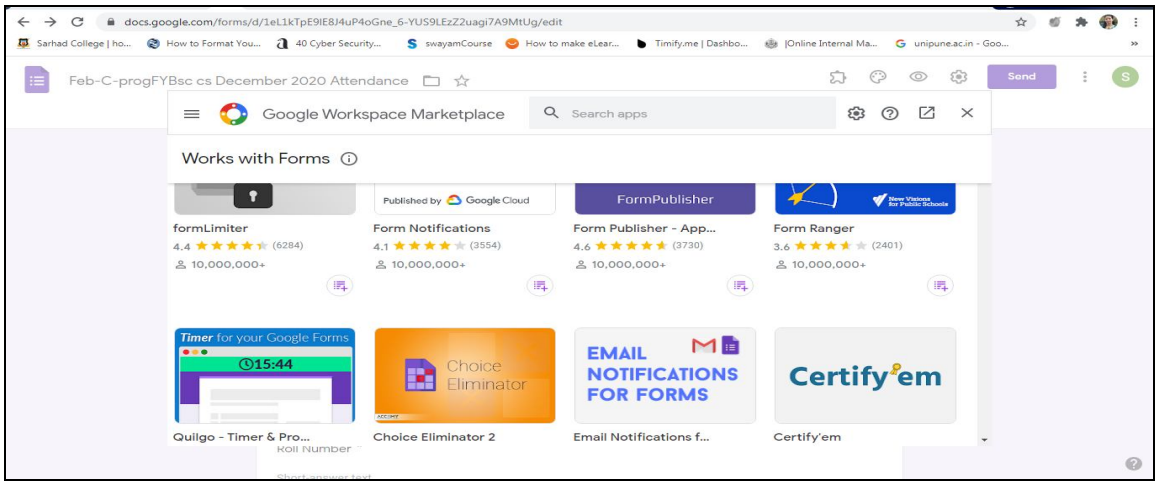


Fig 13:Google forms add-on list

Number of Add-ons are available in Google workspace marketplace. Just click and select add-on to install.

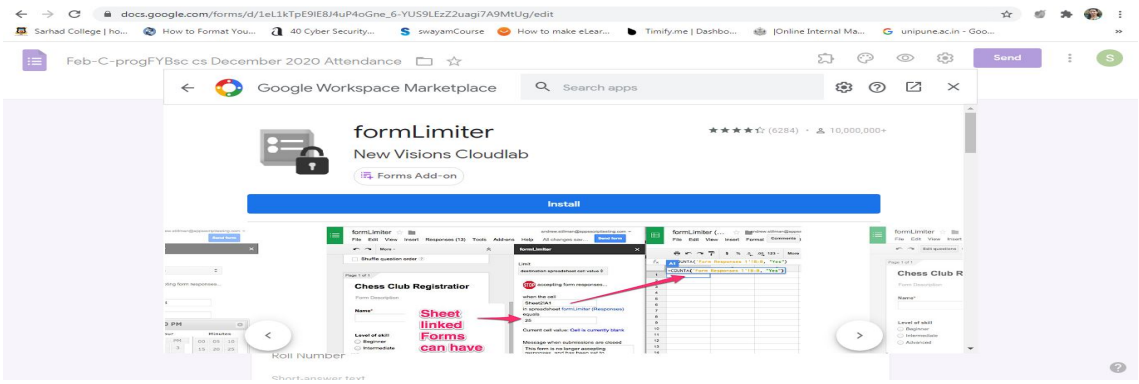


Fig:14 Add-on ready to install

You will get Add-on details next to the Install button.

FOLLOWINGS ARE IMPORTANT AND USEFUL ADD-ONS FOR TEACHERS:

Certify'em: With Certify'em, teachers can create and email custom certificates to quiz or test-takers or to the rankers and participants. We are using simple and easy way for different things like... We are using this add-on to test and Track understanding or competence with employees, team members, students, or parents. Also we are using this to provide proof of certification for people in our school, club, sports team or office.

By using Certify'em it's easy to conduct online certification course, it's showing actual power of Google Forms. You can now easily send separate pdf certificates to everyone on his email who

passes online test with easy to use controls and minimal settings. To send certificates to all participants is very lengthy process without certify'em

Certify'em comes with several professionally designed certificate templates, and allows you to specify your own certificates created in Google Slides. After passing allotted exam all participants will get their own personalized copy of certificate as a PDF email attachment with a unique Certificate ID. Exam owner will be able to keep track of who has passed, and who hasn't, using the spreadsheet of records that Certify'em automatically creates and maintains.

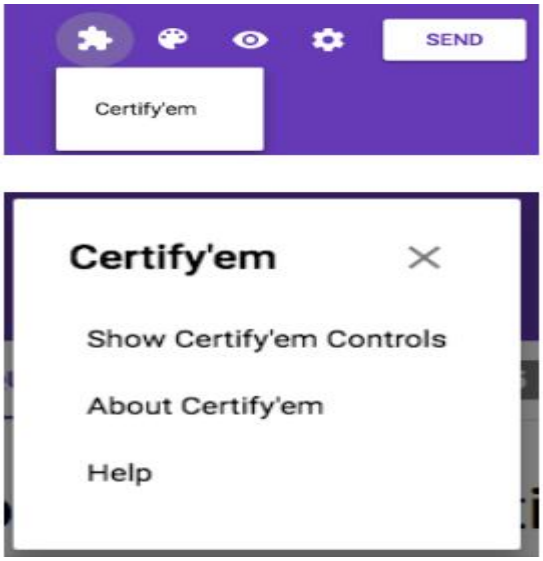


Fig 15:Options in menu

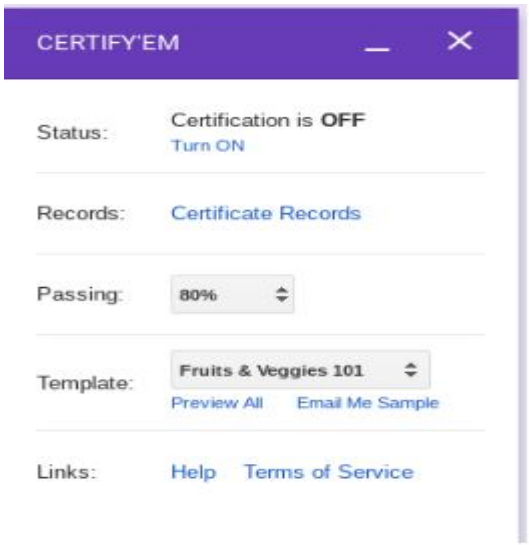
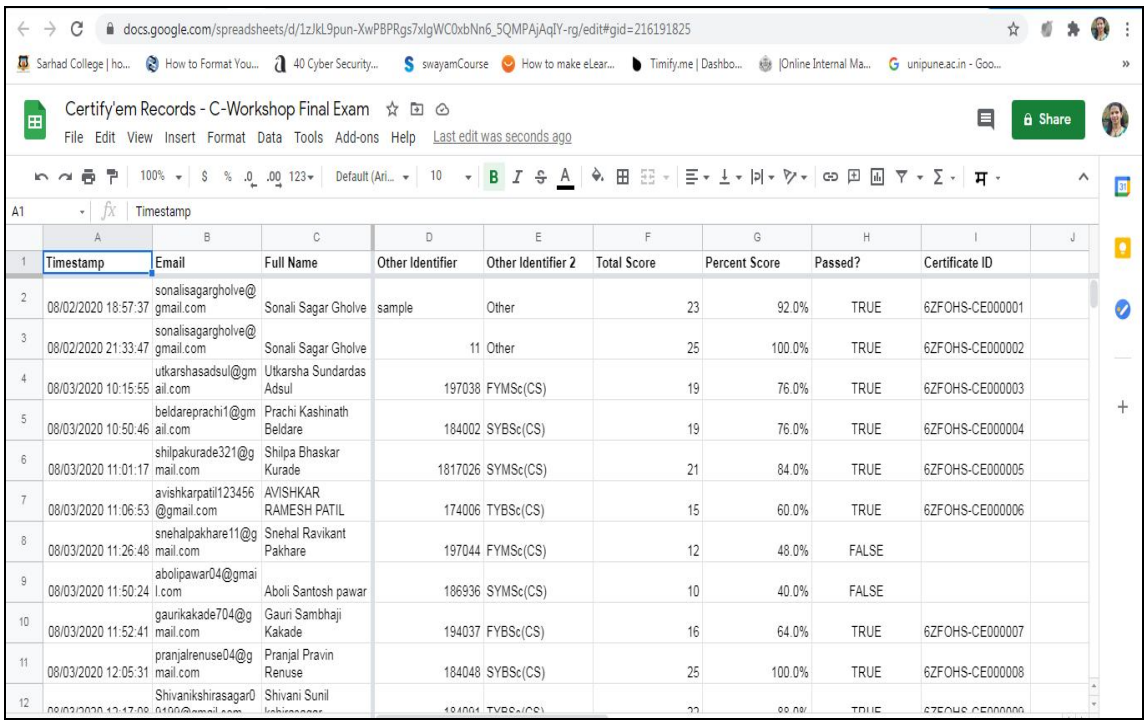


Fig 16: Certify'em control



	Timestamp	Email	Full Name	Other Identifier	Other Identifier 2	Total Score	Percent Score	Passed?	Certificate ID
2	08/02/2020 18:57:37	sonalisagargholve@gmail.com	Sonali Sagar Gholve	sample	Other	23	92.0%	TRUE	6ZFOHS-CE000001
3	08/02/2020 21:33:47	sonalisagargholve@gmail.com	Sonali Sagar Gholve	11	Other	25	100.0%	TRUE	6ZFOHS-CE000002
4	08/03/2020 10:15:55	utkarshasadsul@gmail.com	Utkarsha Sundardas Adsul	197038	FYMSc(CS)	19	76.0%	TRUE	6ZFOHS-CE000003
5	08/03/2020 10:50:46	beldareprachi1@gmail.com	Prachi Kashinath Beldare	184002	SYBSc(CS)	19	76.0%	TRUE	6ZFOHS-CE000004
6	08/03/2020 11:01:17	shilpakurade321@gmail.com	Shilpa Bhaskar Kurade	1817026	SYMSc(CS)	21	84.0%	TRUE	6ZFOHS-CE000005
7	08/03/2020 11:06:53	avishkarpatil123456@gmail.com	AVISHKAR RAMESH PATIL	174006	TYBSc(CS)	15	60.0%	TRUE	6ZFOHS-CE000006
8	08/03/2020 11:26:48	snehalpakhare11@gmail.com	Snehal Ravikant Pakhare	197044	FYMSc(CS)	12	48.0%	FALSE	
9	08/03/2020 11:50:24	abolipawar04@gmail.com	Aboli Santosh pawar	186936	SYMSc(CS)	10	40.0%	FALSE	
10	08/03/2020 11:52:41	gaurikakade704@gmail.com	Gauri Sambhaji Kakade	194037	FYBSc(CS)	16	64.0%	TRUE	6ZFOHS-CE000007
11	08/03/2020 12:05:31	pranjalrenuse04@gmail.com	Pranjal Pravin Renuse	184048	SYBSc(CS)	25	100.0%	TRUE	6ZFOHS-CE000008
12		Shivanikshirasagar0	Shivani Sunil						

Fig 17: Certificate records

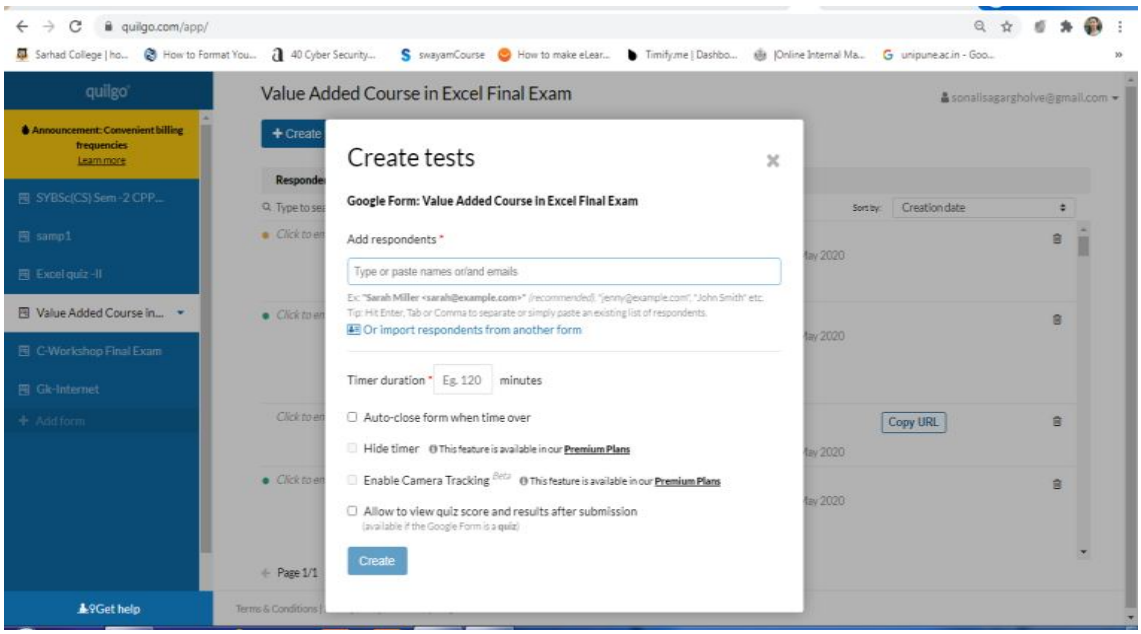


Fig 18: How to create test in Quilgo

Timify.me-Quilgo - Timer & Proc: Quilgo enables clock countdown tracking for your test, camera recording and cheating prevention tools for your Google Forms, it shows you how many times participants focus onQuilgo transforms Google Forms into tests and assessments for online skills. Quilgo was developed for evaluation by HRs, colleges, universities and other educational institutions.

Different features of Quilgo are:

- Embed a timer so you can set custom duration

- Examiner can track start and test submission time

- Make video snapshots of your respondents

- Force your forms to close automatically after is over

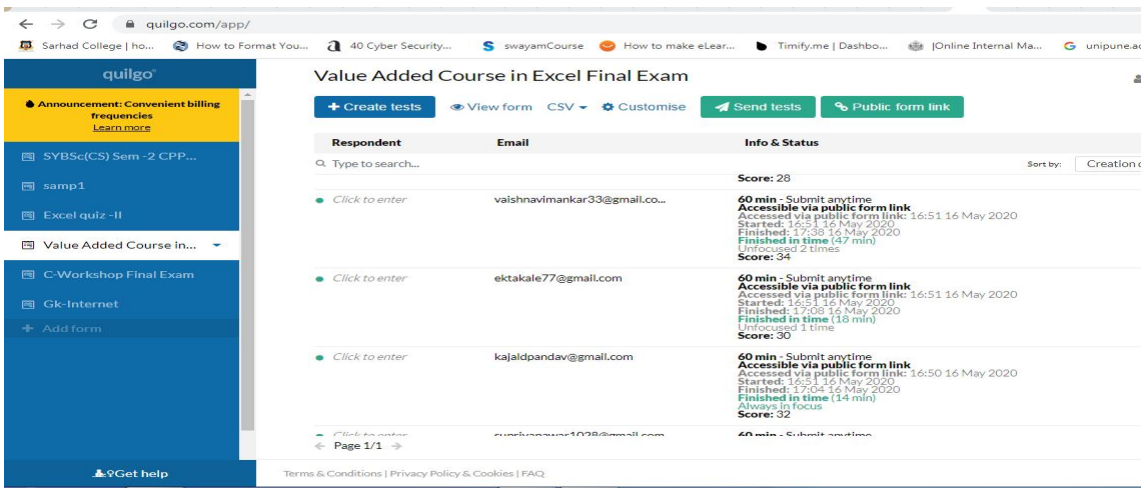


Fig19:Testrecord Focus/ Unfocus

- Examiner can brand and decorate form welcoming page

- Easy to export data for further result analysis

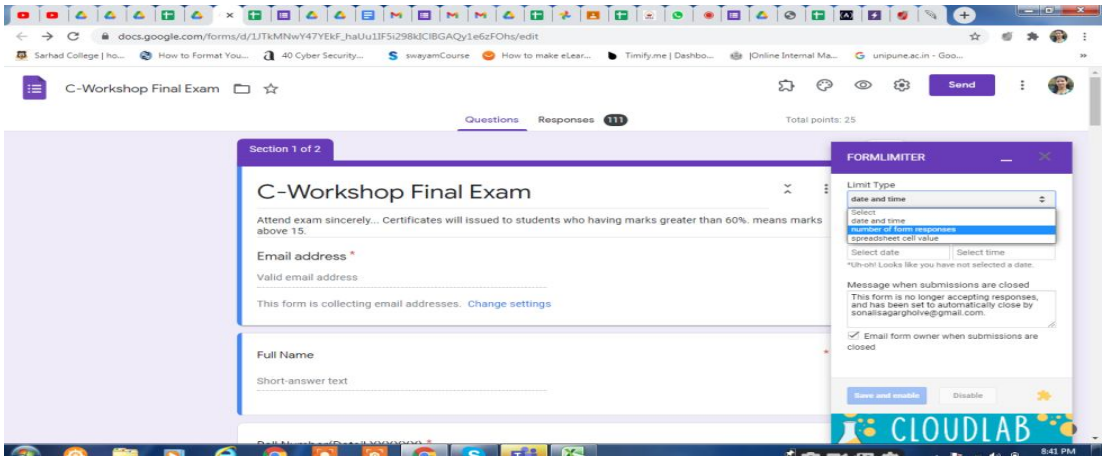


Fig: 20 Form limiter control option

FormLimiter: Using a form limiter teachers can automatically set Google Forms to stop accepting responses after a maximum number of responses, at a specific date and time, or when a spreadsheet cell contains a specified value. Very useful in case of time-bound assignments and test, useful in FCFS(first-come, first-served) methods also in registrations with limited seats

Form Presenter: "Form Presenter" is important add-on to present your Google Form with time, audience, action, presentation controls with friendly user experience (UX). It is useful to timify means set time limit, beautify-using different settings, and action control Google Form for conducting tests. Make beautiful and best out of it.

Presentation controls are available like:

- Customize Title, Thumbnail image, and Welcome message
- Customize Title and Welcome message
- Customize Background Image and Colour

Time controls as follows:

- Control when to open and close the form on a specified timezone
- Set Strict Timer - setup strict timer of start and end date-time. Shows remaining time live and automatically closes form when it reaches the end date-time.
- Set Timer - setup duration controlled forms. It shows remaining time live and automatically closes form when time over.
- Breaks - can user pause and how many times

Audience controls

- Enforce Login - allow only logged in users to access the form
- Capture the name and email of your form audience
- Restrict Emails - allow only specific email addresses to access the form

- Restrict Domains - allow only specific domains to access the form
- Restrict Attempts - allow only a specified number of attempts.
- Track attempts, start, submission and time out statuses and times

Dashboards- On dashboard you will get information of -

- Live tracking of audience dashboard
- Audience Analytics and summary
- Export to audience analytics data to CSV/ Google Sheets
- Dashboard of all published Forms

Publish & Invite Audience

- Publish Form and Share a common link to all audience
- Publish as Classwork/ Coursework on Google Classroom directly
- Invite audience via emails
- Compose and send custom emails
- Track attendance of invited audience

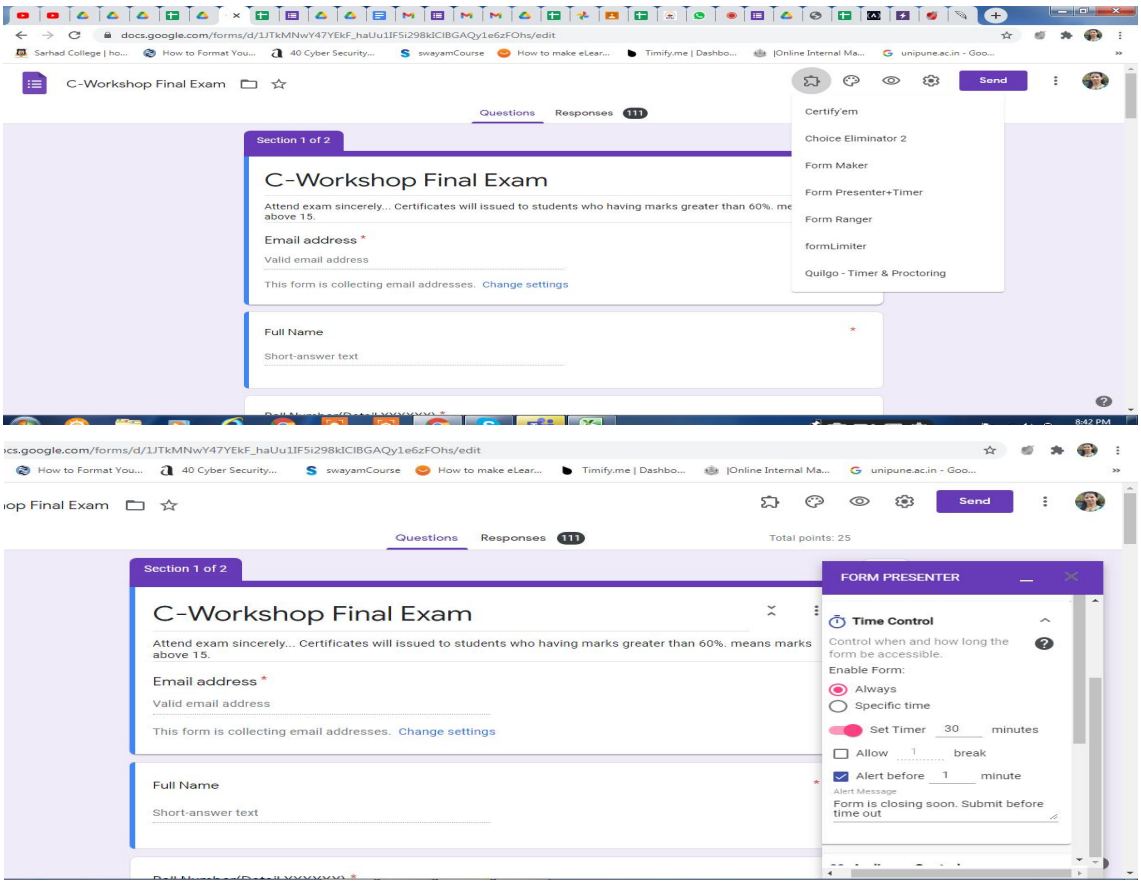


Fig21: Form presenter option in list Fig 22: Form presenter control menu

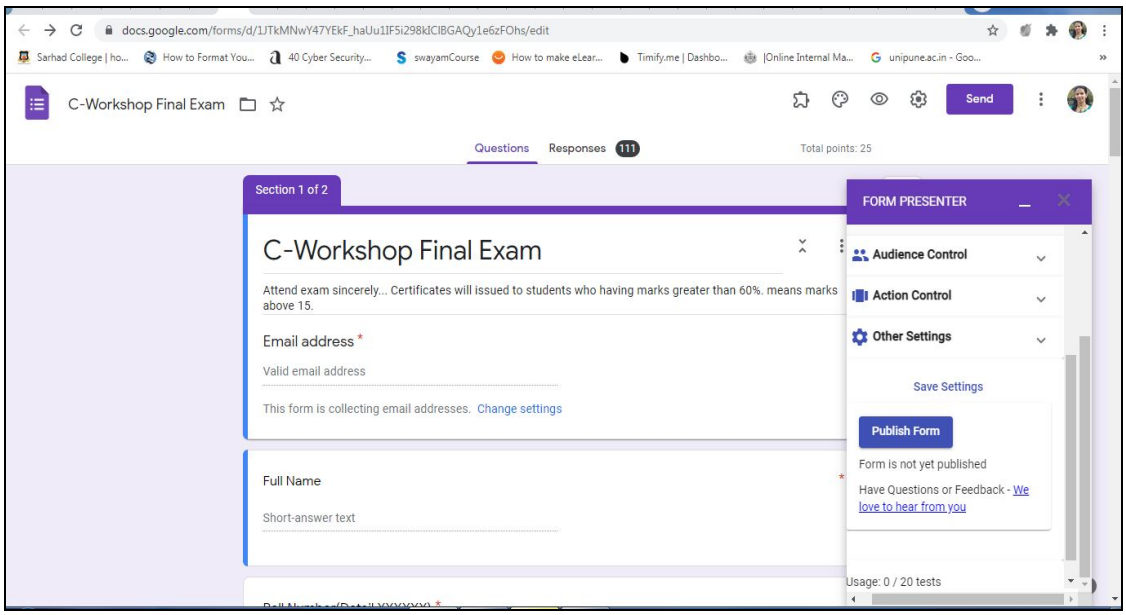


Fig 23: Form presenter additional settings

Choice eliminator2: This add-on will help teachers to create schedules for online viva or PTA schedule. This add-on eliminates the selected slots of previous students**.**

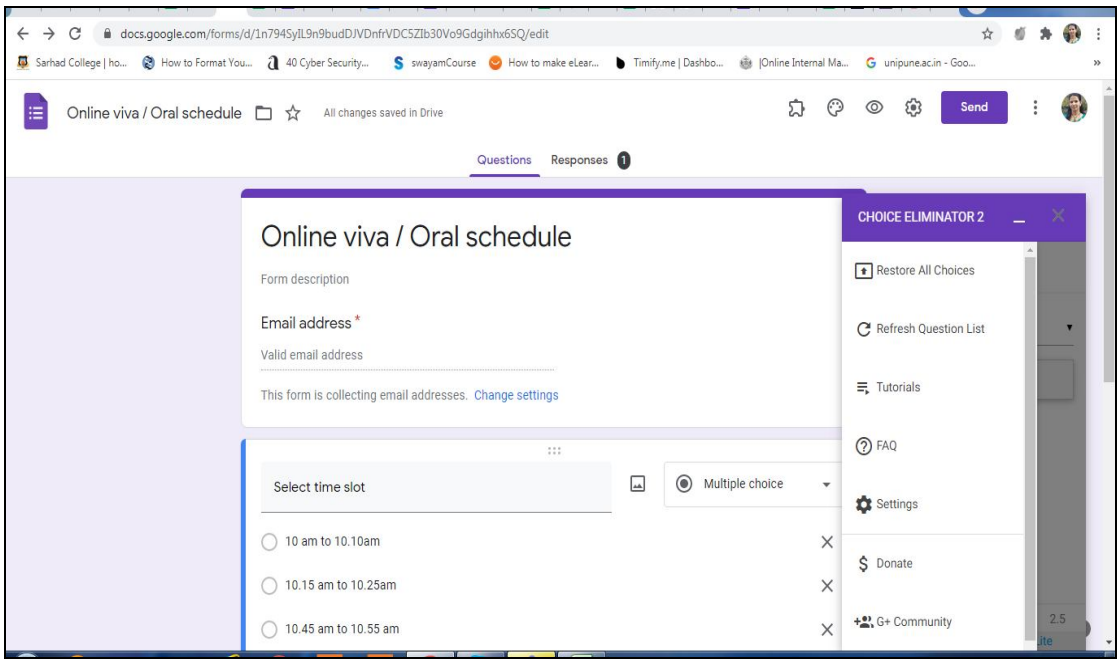


Fig 24: Choice eliminator2 control menu

CONCLUSION: Using advanced techniques teachers can do the transparent assessment. Different tools available for interactive online assessment. How to use Google form effectively for assessing students. Use of different add-ons with google form for extra functionality for assessing students. This paper also gives ideas to teachers about how to prevent students from sharing quiz. Stop cheating during online exams.

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INNOVATIVE TEACHING METHODS IN PHYSICS

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ABSTRACT
This paper presents details of the implementation of an educational innovation. Physics is the branch of natural sciences, deals with the primary components of the universe and their interface. It also related with the scrutiny of system which can be better understood only in terms of these elementary principles. Physics is considered a master if scientific knowledge so learning of its abstract concepts requires more concentration. Physics is one of the most difficult and complicated subject. It gives to us clear imagine of the world. Because of this we have to find the most interesting method of teaching physics. It is really difficult to remember definitions and formulas. There are many factors which are responsible of refuse of student's interest in science education like Physics.

Keywords: Physics, Innovative, ICT, Classroom, Methods, Teaching, Subject.

INTRODUCTION:

Traditional methods of teaching Physics: -

Generally, everywhere teaching method that is commonly used to teach all subjects is lecture method. Actually, this method is most popular in every college where student's strength is large. Science subject teaching especially physics teaching cannot be limited to classroom lectures but this subject also need experimentation and demonstrations with total participation of students. They observe things happening before them and by doing them practically, they can learn better. This lecture method can be mode of useful if it is incorporated with experimentation in its true effect.

A teaching implies to any methods, skillfully and carefully designed classroom like ICT that can facilitate teaching of any idea, concept or a lesson to the students. If any method is combined with some new thought or method, creativity then it becomes innovative method. An innovative is a design that is full of new ideas. There are some innovative teaching methods like teaching through smart boards, teaching through collaboration, teaching through virtual reality, e-learning, group discussions, project method, problem solving method, case studies, field visits etc. which is as shown in figure below.

Multiple methods of teaching Physics: -

There are different multiple teaching methods I used like ICT classroom, Action Learning, Field Exercise, Peer to Peer, Case Study, Team Exercise etc. as shown in below.

I used ICT classroom for teaching. The course work components I used were the Physics concept video using ICT classroom. ICT comes from "Information and Communication Technology". It is mode of education which is use for information and communication technology to basis, increase and optimize the delivery of information. ICT tools for teaching and learning are projector, Desktop and laptops, Digital Cameras, Photocopier and Printer, Pen drive etc. To motivate students and growing their interest in learning physics, this ICT helps teacher very well. This also helps teacher for their personnel base like attitude, knowledge, skills.

In this paper I focused on teaching physics, calculus and differential equations for students. For these subjects, the ICT classroom method encourages students to equipment strategies that we would not be able to apply in the lecture method. I used tutorials for introductory physics and peer instruction and also modeling, which is the use of physical phenomena to foster a visualization of physics, modeling and simulation, and interpretation of non-routine problems in real contexts in physics.

I have conducted research on learning concepts and technology, communication and problem solving skills. Students are given a standardized test for both pre- and post-testing to assess their learning of concepts. Technology skills are evaluated from the analysis of student behavior during the activities. Communication skills are assessed by analyzing videos of students' interactions during classes. Finally, problem solving skills are evaluated with established and validated rubrics. This paper presents a classroom in which learning is active every day, technology is used in the service of teaching, and the teacher is a guide that facilitates student learning.

Equipment available: The room has a set of technologies and inventions of new things that makes it (like nothing else in the world).

Projection screen-The room has projection screen on the wall of the room.

With this arrangement students can see what is being projected from any angle without looking at the instructor directly.

Whiteboard-It is on one of the wall in the room, there is whiteboard offering discussion space to the group/(working well together) groups. They can present their findings to other group members or to the whole classroom, since images displayed on the individual whiteboard can be (recorded on a camera or computer) by a camera and projected on the screens.

Demonstration table- Next to the teacher's desk, there is a table for interactive lecture demonstrations.

Videoconferencing-This technology allows the participation (in real time) of an external instructor who can share their knowledge and interact with students from a remote location.

Wireless and wired internet-The classroom has a high speed internet connection, both wired and wireless, that helps internet searches, video review and use of the class digital (raised, flat supporting surface), among other activities.

CONCLUSION:

The construction of the ICT room was one in every of the tutorial innovation comes administered on field. This space aims to become a room model that's at the forefront of instructional technology. during this section we'll mention the foremost relevant findings within the implementation of ICT.

Earlier versions of the ICT space in numerous places have shown that the ways of teaching or learning that were enforced were terribly eminent, each for learning and for acceptance by students. For this reason, a number of the objectives of ICT were to enhance student skills within the areas of learning, communications skills, technology skills, attitudes and problem-solving skills.

The room options the most recent technology within the field of education. Communication between students was a positive revelation of the ICT room. This conclusion is drawn from the research given at the top of the semester.

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INNOVATIVE METHODS OF TEACHING FOR EFFECTIVE LEARNING IN CHEMISTRY

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ABSTRACT
Chemistry is the important subject among the science subjects because upon which the many technology and science courses such agriculture, medical, pharmaceutical, engineering are based. The main purpose of this paper is to assess innovative methods of teaching methods of chemistry for the effective learning in chemistry and put forward the more different useful innovative methods to pass on the knowledge about basic concepts of chemistry to the students. The process of to give knowledge to the students by the method of lecturing in the subject like chemistry does become difficult for an average Lerner. Therefore, there is need for innovation in teaching process for effective learning. This innovation in teaching for effective learning process in chemistry must be well structured according to different concepts of chemistry, well ordered and methodological therefore college professors are expected to use the innovative methods of teaching like ICT, some experimental methods to explain the concepts and laws of chemistry to improve the quality preparation of all students for their educational growth. Use of power point presentation, You Tube channel is also an ICT tool used in teaching learning process for an undergraduate and graduate student. The main objective of this paper is to include innovative methods for effective learning to create adventures and interesting learning experiences for students and satisfying experiences for faculty.

Keywords: Innovative methods for teaching, effective learning in chemistry, ICT, Chemistry science and technology, Use of ICT tools.

INTORODUCTION:
The interactive teaching in chemistry is based on the experiments that are research based which provide students experimental learning experiences. The most used method for teaching the chemistry is the lecturing that is 'chalk and talk' method. The 'chalk and talk' method mainly involves the process of information about concepts of chemistry from teacher to the students. But use of lecturing to deliver the knowledge of concepts of chemistry is not sufficient. By lecturing methods, we can give only theoretical knowledge to the students. But there are many concepts in the chemistry which are very difficult to students to understand. For example, some reactions are exothermic and some reactions are endothermic. For this it is better understandable to students when professor show practically difference between exothermic reaction and endothermic reactions. For stereochemistry topic the professor must use the 3 dimensional model to represent the orientation of molecule in 3 dimension. Therefore, there need for innovation in delivering the knowledge about concepts of chemistry. ECTN has identified ten possible areas for advancement in the teaching of learning chemistry (European Chemistry Thematic Network). Experimental learning in chemistry offers student the opportunity to acquire knowledge about basic concepts of chemistry.

Chemistry is the branch of science deals with study of elements and compounds composed of atoms, molecules and ions, their structure, composition, properties, behavior and the changes they undergo during chemical reaction with other substances.

This paper will focus on following objectives:

- Concepts of Chemistry
- Use of ICT tools to deliver the knowledge of concepts of Chemistry
- Use of different innovative methods of teaching in Chemistry
- Experimental learning in Chemistry
- Suggestions

The biggest challenge any teacher faces is to explain the concepts and capturing the student's attention and putting the ideas in such a way that it stays with them after they have left the classroom. To achieve this, classroom experiences should be specific and innovative ideas that make teaching learning process more effective should be introduced. Here are some innovative methods that will help teachers to make effective teaching learning process and make their students to take interesting in chemistry.

METHODS OF INNOVATIVE TEACHING IN CHEMISTRY:

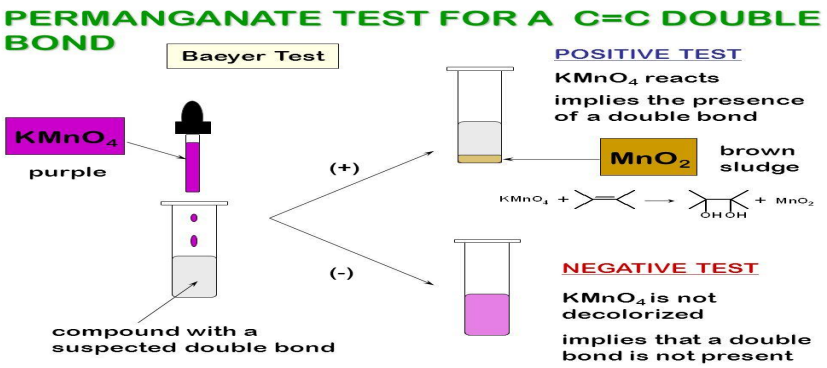
Interactive Lectures:

In traditional teaching methods that is "chalk and talk" method the teachers teaching the concepts of chemistry but it is "one-way flow" of information. Therefore, it is need to conduct the interactive lectures for students because interactive lectures improve the active participation and involvement of students. It improves the quality of effective learning. Students can communicate with the teacher during interactive lectures and they can ask their doubts and get cleared from teachers. The use of ICT tools, smart boards can help teachers to conduct the interactive lectures and helps to involve many students during interactive lectures.

Hands- on learning:

Hands on learning is best innovative teaching method in chemistry. There are many concepts in chemistry which are difficult to understand for students. But if teachers provide to the students the hands on learning they can easily have understood the concept of chemistry. Hands- on learning is advance learning in the all the branches of chemistry. During Hands-om chemistry activities, students investigate the different chemical properties and different reactions utilizing laboratory apparatus and instruments.

e. g. Detection of Unsaturation in compounds: If teachers provide the hands-on experiments to students. The can easily understood the difference between saturated compounds and unsaturated compounds.



Virtual Science Labs:

Use of virtual science labs is also important for an effective teaching learning process in chemistry. There are many virtual science labs are available online for free. Use of virtual

science lab provides the hands- on experience of learning the concepts of chemistry without much expense. In virtual science labs students are allowed to get detailed diagram, illustration of experiments without actually doing it, experiment a chemical reaction without burns. By virtual science lab students understand the different terms involved in the chemistry. Once the students understand the concept of the experiments and the different steps involved, they can perform the experiments in the real lab more accurately and quickly.

Learning through observations:

The learning through observation help the students to build up their learning through observation, creativity and research. Learning through observation helps students to have an understanding different specific concepts. e. g. magnetism, electrical conductivity of metals.

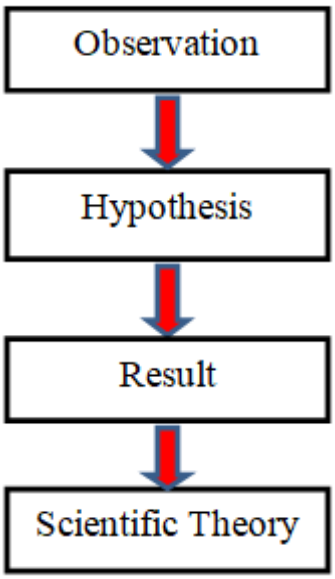
The steps involved in learning through the observations:

Step I: Observe the experiment.

Step II: Make systematic and careful observation.

Step III: Make and record the observations and measurements using a range of different methods and write the conclusion.

Step IV: Make and record observations during chemical reactions.



Smart Boards:

Smart boards are an efficient way to bring life to the classroom while allowing students to experience a deeper level of involvement and understanding. By making the material of the course interactive and visual, this is achieved. As teachers use immersive multimedia content, the smart boards turn the teaching experience into an interactive and collaborative experience to help communicate the subject more effectively to the students and make it a visual, engaging experience. The Smart Board enables teachers to work through a lesson and save it at home for learners to study. Students will then watch lessons at home, then come into class to work with a teacher on their issues. You have more choices in the way your lessons look because it's linked to a machine. For instance, in lessons, you can highlight, bold, or italicize significant words. This will catch the interest of students and they will concentrate more on those points.

Teaching through 2 and 3 Dimensional models:

The use of 3-dimensional models to teach molecular stereochemistry is an efficient way to get simple ideas about the three-dimensional orientation of molecules in space and to understand the different properties of molecules easily. The goal of this study was to compare the effects of the use of two- and three-dimensional molecular structure model representations on the learning of organic chemical structures by students. In Higher education studies students were taught organic structures using one of four molecular representation methods:

(1) Two-dimensional representations of textbooks

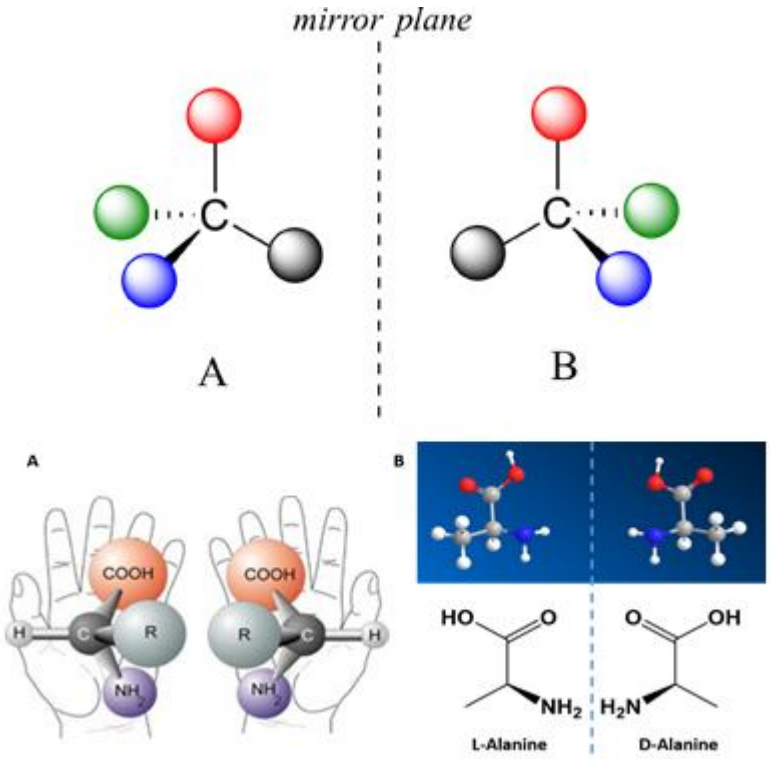
(2) Three-dimensional computer models

(3) Three-dimensional models of balls and sticks, and

(4) A mixture of computer molecular models and models of balls and sticks.

Students can clearly grasp the principles of stereochemistry using the above models. These models are also helpful in describing stereochemistry concepts such as enantiomers, distereomers, and epimers.

e. g. The teachers can effortlessly illustrate the principles of mirror plane images by using three-dimensional models.



Flipped Classroom:

The Flipped Classroom Model allows students to prepare for the lesson before class. The class thus becomes a complex setting in which learners expand on it, what they have studied already. Students plan a subject at home so that the next day the class any questions they have about the subject can be dedicated to answering. This enables learners to go beyond their usual limits and pursue the inherent curiosity of them.

Chemistry text cards:
This is a revolutionary form of learning to communicate the facts of Chemistry in a simple and structured way. Statements linked to Chemistry principles are written on index cards in this operation. To sort the cards based on the specified format, students may work individually, in pairs or in groups. True or false, agree or disagree, matching sets, grouping, sequencing and more are the formats.

Crossover Learning:
Students are given the opportunity to learn in many environments, such as within the classroom, museums, field trips or clubs, in this teaching process. By proposing a question in class, bringing students to informal environments to find answers, and then coming back to classrooms to discuss and share the results, teachers can use this approach effectively. In this way, learners can log, connect, remember and share their various learning experiences in order to explore the subject and get a deeper understanding of the level.

ICT- Enabled Learning:
In order to teach research concepts that enable open source learning, ICT refers to the use of information and communication technologies. This approach incorporates telecommunications, computers and related enterprise software, storage, middleware, and audio-visual systems needed to deal with the subject, in order to make it easier to access, store, distribute, and manipulate information.

Learning through video clips:
This teaching technique makes use of online or library instructional video clips to view and teach a new concept. With animation images, the evolution of a mechanism can be communicated better. It may also be recordings of a concept presentation or an implementation side of a theory or an interview with a scientist, a subject expert's tutorial, and more.

Mini-labs:
Mini-labs allow students to take part in hands-on experiments of chemistry to demonstrate a concept within the classrooms. This makes for more enjoyable, interesting, memorable and engaging classroom sessions. Students may try to mock up with a globe and prepare various concentration solutions to understand the normality, molarity and molality concepts, test for conductivity and demonstration of instruments.

Science Fair:
Teachers should conduct science fairs as part of the teaching plan to promote the interest of students in the topic of chemistry and to assess their level of understanding. Students are given a time frame in this competition to respond to a question or conduct a task across a series of experiments and study. The performance is presented in the form of papers, display boards, or models.

Documented problem solving:
In this approach, the teacher insists that when solving a problem, students document their thinking process. Instead of merely proposing a solution, they are asked to explain their reasons for arriving at the specific solution. The style of recorded problem solving by students allows them to have a better understanding of their method and provides them an opportunity for self-analysis.

Field Trips:
Teachers should take their students out to explore chemistry while preparing for field trips. One of the best methods we can use to provide real-world experiences for every learner is a field trip

as a creative teaching process. Students see the similarities between what happens in classroom and in the 'real-world' as students during field trips. Students can access instruments and experiences that are not accessible at college.

Chemistry Quiz:

Teachers should schedule a quiz when teaching chemistry as part of classroom sessions. This can be done as a whole class activity by splitting the group into 4 or more sets. The implementation of the principle taught in class can be included in the questions. In order to find the solution within the prescribed time frame, students can discuss and share ideas. This approach to teaching allows students to learn from multiple angles and to think out of the box occasionally.

Build Chemistry Models:

As part of Chemistry education, this can be a daunting challenge given to students. Models are the scientific building blocks that are used to illustrate the different aspects of the real world. Teachers should ask their students to use the scientific knowledge they have gained to develop their own model and provide helpful guidance. In making models and developing their own innovative means of evaluating them, students can be creative. This is the correct method for discovering the scientist in them.

CONCLUSION:

Innovative teaching methods could be treated as any teaching method without destroying the target. Teachers can circumvent the system in a variety of ways and give students the resources and interactions that spur a creative attitude. There is hope for success in every area of chemistry when there is a desire to improve. Creativity can be generated and both students and teachers benefit from creative teaching and learning. Technology is changing the atmosphere in the classroom as well. Teachers are happier when they can enter the class of students with their thoughts and opinions. Teaching therefore depends on a good communication and innovation mode, although we mean the changes we propose to include in our communication medium or even to include some other elements in the communication of information. The teacher starts to extensively use the new multimedia technology, such as the use of computers or some improvements in the traditional teaching mode. The key inhibitor for students learning concepts and abilities during the experiment was found to be not from the experiment itself, but from how the teachers conducted the experiment themselves or which teaching innovative methods and techniques they used to teach the experiment. The study proposed that teachers should alter or enhance their teaching for effective learning. Method of teaching thus teaching experiments by applying the methodology of inquiry and constructivism.

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STUDY OF INNOVATIVE TEACHING METHODS IN COMMERCE AND MANAGEMENT SCIENCE FOR EFFECTIVE LEARNING

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ABSTRACT

Education is the backbone of globally developing a skilled workforce. The effective workforce can be created through effective methods of teaching in class rooms. Teaching does not mean that to focus on textbooks and traditional methods of instruction. The traditional teaching method somehow not fulfilling the gap between education and employment so, there is need of innovative methods of teaching. This research paper specially focused on the five innovative methods helps in the development of skills of commerce and management science students. The methods are (flipped classroom, role playing, Design thinking (case study), brainstorming, Activity based learning). The objective of study is to focus on the effectiveness of innovative teaching methods used by the teachers of commerce and management science. To understand the innovative teaching method helps in learning and gaining knowledge by students. The results of study revealed that out of 294 respondents more than 50% are saying that the role of innovative teaching method is more important in gaining knowledge. The innovative methods of teaching are more preferred by students and they also said that the innovative methods help in gaining practical knowledge of subjects. In addition, most of the teachers of commerce and management science use the innovative method of teaching and students are also aware about it.

The most effective method of teaching for commerce and management science student is activity based learning 43% of respondents are learn from this method and 35% respondents through flipped class room. These two methods are effective for learning and understanding the subjects of commerce and management science as compared to other methods. The outcomeof this study is that the teacher should use the integrated innovative methods of teaching while teaching the subjects of commerce and management science which also help the students in effective learning and understanding.

Key points: Education, flipped classroom, activity based learning, effective learning,

INTRODUCTION

Education is an eminent tool of every society which could significantly contribute to the development of any country. In an era where technology enhancements and creativity are in their prime, there are many opportunities and challenges for innovative learning and teaching methodologies. Traditional teaching methods are specially based on teacher's capabilities and abilities to explain about the topic; and students were the secondary preference of teaching. The role of teacher was the most important in traditional teaching methodology. Traditional methods of teaching were mainly focused on a teacher explaining a textbook topic; students in class 1 were not active participants. However, modern teaching approaches enable learners to take an active role in the class in order to awaken their interest and imagination. McCarthy and Anderson (2000) conducted research to study, analyse, and compare the outcomes of students taught by traditional methods with those of students taught by the active learning methodology. The results of quizzes demonstrated that the students involved in active learning achieved higher scores than those who were taught by the traditional way.

OBJECTIVES OF STUDY:

1. To study the various innovative teaching methods used in commerce& Management science
2. To Study the role of innovative teaching methods in the development of students of commerce and management science
3. To Study the innovative& effective method of teaching in commerce and management Science with special reference to flipped classroom, Role playing, Design thinking, Brainstorming and Activity based learning.

RESEARCH METHODOLOGY

To fulfill the objectives of this study, the primary data is collected through structured questionnaire for the sample of 294 students from commerce and management science stream using Google form from the population of 600 students. The sampling method used for the study is simple random sampling. The data is collected for the five different types of new /innovative teaching methods (flipped classroom, Role playing, Design thinking, Brainstorming and Activity based learning) were identified and collected. The secondary data used for the study are collected from the research paper and article published on innovative teaching methods.

THEORETICAL BACKGROUND:

The different innovative teaching methods used for research study:

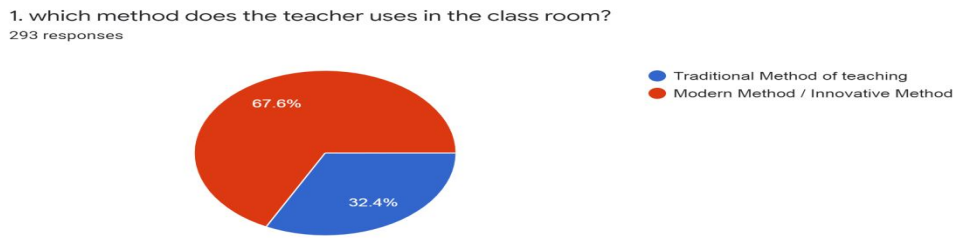
1. **Flipped Classroom:** Lage et al.[2]2 (2000) It explained that reversing the classroom means that outside the classroom, and vice versa, events that have traditionally taken place inside the classroom now take place outside. What actually occurs in the flipped teaching method of the classroom is that for students to learn at home, the theoretical information from lectures and course materials is posted online respectively. M.K, M.K. Kim et al.3,.[3](2014) Nine design principles for the flipped classroom were developed, three of which Brame4 (2010) adopted and validated: to provide students with an opportunity to gain first experience before class; to provide students with incentives to prepare for class; to develop a system for evaluating levels of student understanding.The other six principles were to provide: direct links between in-class and out-of-class activities; clearly specified and well-structured guidance; ample time to carry out the assignments for students; facilitation to create a learning community; prompt/adaptive feedback on individual or group work; and technologies that are familiar and easy to access. Dochy et al.5 (2003) and Gibels et al.6 (2005) Evaluated this method of teaching and concluded that the introduction of the flipped classroom or problem-based learning has a significant effect on the ability of students to develop the skills necessary and to acquire advanced knowledge.
2. **Design Thinking (Case Study):** Design Thinking (Case Study): The core principle of design thinking is that students learn to acquire expertise and develop their critical thinking abilities by being exposed to real-life concerns or case studies and using procedures such as group interaction and brainstorming, as well as many others. For the advantage of theoretical results, cases are chosen and the appropriate case is selected for learning. Inna Popil[7](2011)[7] observed that analytical thinking was enhanced when case studies were used as innovative teaching method.
3. **Role Playing Method:** During their recent studies dealing with the process of identification and diffusion of innovative teaching practices, the authors discovered many classroom teachers experimenting with role playing. They were using it as a method for teaching children to look at themselves, to look at the actions and behaviors of others, and

to look at social life in general. They were using it to help in the diagnosis and treatment of classroom interpersonal problems, for teaching lessons in interpersonal relations, and to give feedback and insights to particular individuals. They were using it to dramatize and illustrate subject matter in courses such as history and English. They were using it, in short, as a means of making the classroom a real-life laboratory for social and academic learning[8].

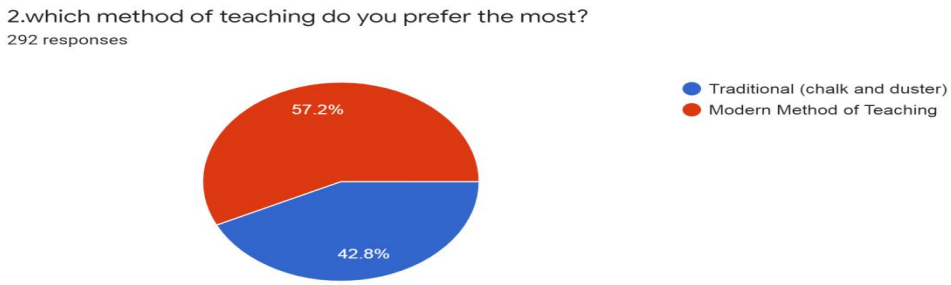
4. **Brainstorming as Teaching Method:** Brainstorming is a blend of a relaxed, informal approach and lateral thinking to problem solving. People are asked to find thoughts and suggestions that might seem to be a little meaningless at first. The idea is to use some of these ideas to form original, creative solutions to problems. Even some seemingly useless ideas can spark still more ideas. The purpose of brainstorming is to guide individuals to new ways of thinking and to break from the normal way of thinking. The most significant thing about brainstorming is that proposals cannot be questioned. Brainstorming will enable learners to think more openly and innovatively than if the classroom situation was more limited and routine. This helps students to remember what they learned.

5. **Activity-based learning:** To inspire and promote students, successful learning requires an engaging classroom environment. In order to promote and improve the learning capacity of students, such an environment requires versatile and adaptable teaching strategies. Student-centered learning approaches will improve student learning, motivation and their capacity to think critically and creatively dramatically[10]. Activity-based instruction is based on positive engagement with student teachers. Active learning enables learners to investigate, discover, experiment, collaborate and enjoy the fun of learning [11]. The role of teachers in this technique changes from that of providing information to that of encouraging and inspiring [12.]

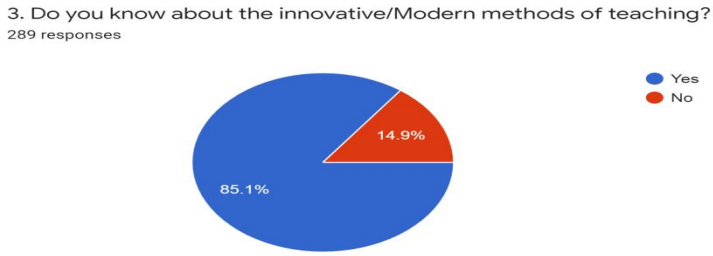
DATA ANALYSIS& INTERPRETATION:



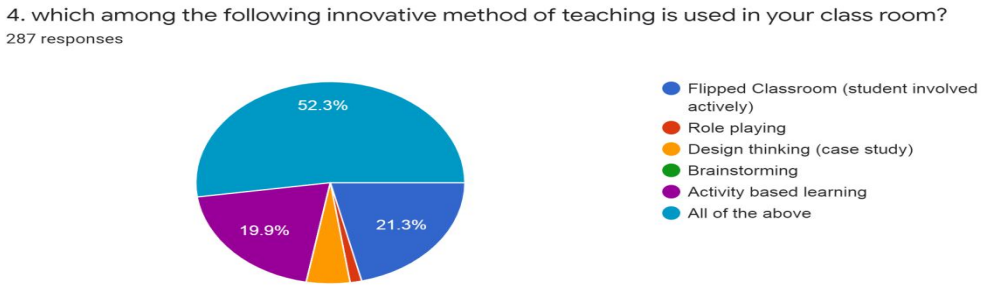
Interpretation: The above grape shows that the 67% of the students are saying that their teachers uses the modern and innovative methods of teaching in their classrooms and only 32 % say the teacher's uses traditional method. It means that the commerce and management science teachers prefer modern methods teaching in classrooms.



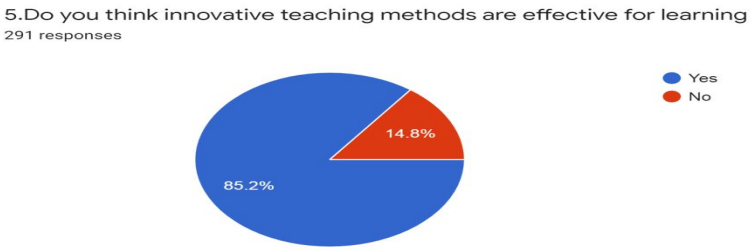
Interpretation: The above Chart Shows that 57% of the students says that they prefer the modern methods of teaching for learning. The most preferable method of teaching for commerce and management science is Modern Method of Teaching. There is less preference given for the traditional method of teaching by students of commerce & management science.



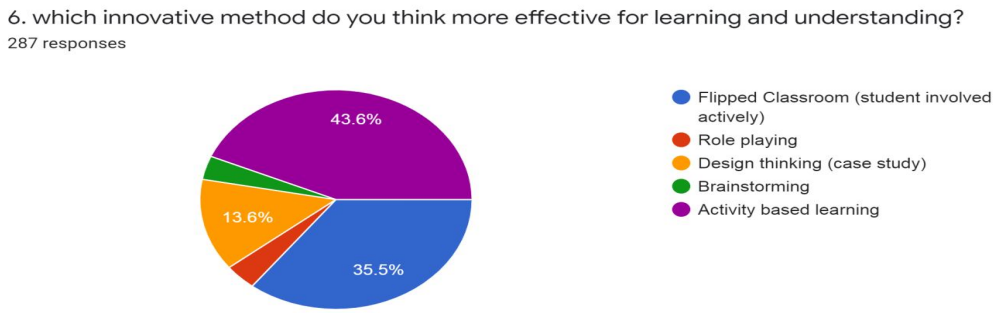
Interpretation: chart shows that the 85.1% students are aware about the modern methods of teaching. The Maximum students of commerce and management science are familiar with innovative methods of teaching, only few students are not aware about new methods of teaching.



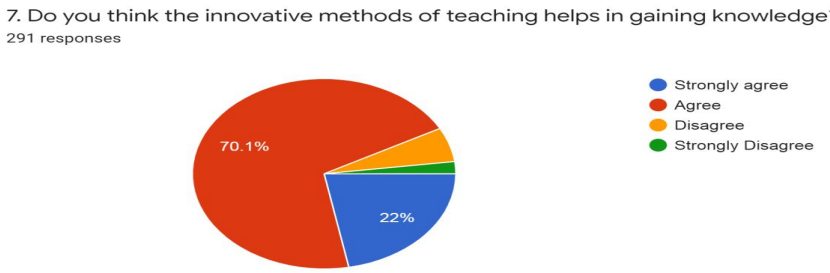
Interpretation: The above chart shows different innovative teaching methods, the students says that the teachers of commerce and management science uses the five integrated innovative methods of teaching, it shows that the most popular method among the five is flipped classroom and activity based learning. The other three methods of teaching in commerce and management science are infrequent.



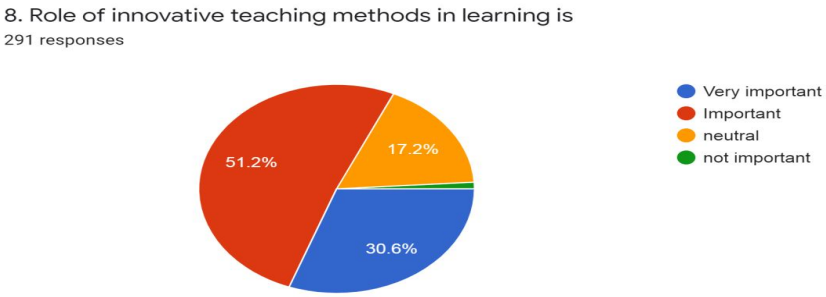
Interpretation: The above chart shows that the 85.2% of the students of commerce and management science feels that the innovative methods of teaching are more effective for learning. Only 14.8 % students does not get knowledge through innovative methods teaching commerce and management science. An innovative method of teaching helps commerce and management science students to learn things effectively.



Interpretation: The chart shows that the most effective method among the innovative teaching method is activity based learning which support students to learn and understand the concepts of commerce and management science subjects. The student gives second preference to flipped classroom methods of teaching. Students experience that other three methods i.e role playing, design thinking, brainstorming are not much effective and understandable to commerce and management science.



Interpretation: The innovative teaching methods are very helpful in gaining knowledge for the student of commerce and management science. The innovative methods of teaching assist the students to gain the required knowledge of the field as well subject. Students are agreeing with the innovative teaching methods benefit in acquiring knowledge in the field of commerce and management science.



Interpretation: The above chart shows that the role innovative teaching methods are very important in learning and understanding the concept of commerce and management science. Innovative teaching methods play a significant role in learning process of student. More than 50% students say innovative teaching methods have an important role in learning and 30.6% say

it's very important. The negligible students say that the innovative teaching methods of commerce and management does not plays important role in learning.

CONCLUSION

The effectiveness of teaching is totally based on the methods used by the teachers in classroom. The effective teaching is combination and interaction between teacher and student in the classroom. So involving students in the classroom interaction teacher must take the efforts and use the innovative method of teaching in classroom instead of the boring method of instructing. The study specially focused on the different innovative methods of teaching used by teachers of commerce and management science in the classroom and the effective methods for learning and understanding concept of commerce and management. The analysis of the study shows that integrated innovative methods of teaching are used in classroom by teachers. The activity based teaching methods of teaching and flipped classroom method of teaching is moreeffective. The innovative methods teaching help the students in learning gaining knowledge. To fulfill the gap between education and employment the teachers should focus on activity based learning so that they should fulfill that gap. The innovative methods of teaching found effective in improving the academicperformance as well as bridging the gap between the theoretical concepts and real time scenarios'.

FINDING AND SUGGESTIONS:

- Students are aware about the innovative methods of teaching.
- Teachers are generally used the modern methods of teaching in classroom.
- The students of commerce and management science prefer the innovative teaching methods the most.
- The five integrated methods of teaching are used in the classroom to teach the subjects of commerce and management science teachers.
- It is found that the student feels modern methods of teaching are more effective than traditional methods.
- Activity based learning and flipped classroom method of teaching are used by teacher in classroom.
- Innovative teaching methods are helpful in gaining practical knowledge in classroom.
- Role of innovative teaching methods in learning is most important than traditional method.
- Teachers of commerce and management science should use other methods of teaching also with activity based learning and flipped classroom.

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EVOLUTION IN LIFE SCIENCE TEACHING WITH INNOVATIVE APPROACH FOR ENCOURAGING TEACHING BIOSCIENCES

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ABSTRACT
The key to successful teaching and learning, whether in a physical classroom or a virtual classroom, is good communication. For decades, as a teacher describes a lecture, there was only one way of teaching in practice, and students memorize and recite it as their learning. The conventional way of teaching, which was a barrier between students and their imaginative thought, is called this. They then appear to lack the skills to make choices and solve problems. Modern teaching techniques, Student-oriented approaches, on the other hand, are committed to more practical approaches.

***Keywords**: successful teaching, physical classroom, virtual classroom, student-oriented approach, conventional way of teaching.*

OBJECTIVES:
The main goal of the review is to summarize the current changes in teaching strategies for the use of innovative teaching methods. In this chapter, various approaches used to teach Taxonomy, ecology, cell biology have been discussed. This chapter also aims to discuss teaching approach and methods in zoology teaching.

INTRODUCTION:
The main goal of teaching at every level of education is to bring about a profound change in the learner (Tebabal & Kahssay, 2011). In order to promote the information transfer process, teachers should apply appropriate teaching methods that best suit different goals and objectives of class. Teachers should apply effective teaching strategies that best match particular goals and level exit results in order to promote the process of knowledge transfer.

In the traditional period, teacher-centered methods were commonly applied by many teaching professionals to impart knowledge to learners comparable to student-centered methods. Questions regarding the efficacy of teaching approaches before today. (Hightower *et al*., 2011).

The Mariam webster Dictonary (2016) defines teaching as the act of imparting skills to another. The term teaching method refers to the general principles, or pedagogy used for classroom instruction.

TEACHER-CENTERED METHODS:
Teacher is role model which pass subject knowledge to students via class room lectures by general chalk and talk method, in which students are evaluated via some class tests or assignments etc. As it does not involved student in practical work or the ultimate class control is by teacher its less practical and more theoretical. (Teo; Wong, 2000).

STUDENT-CENTERED METHODS:
The objective of this method practical involvement of student in learning process. Methods like problem solving (based on concepts in genetics, bioinformatics, bioenergetics, cell divisions), etc. helps to develop research approach, independent learning, critical thinking, problem solving skills, also enhances subject interest , understanding of concepts and mechanisms. Other important outcome is that students will be able to analyze and solve complex, real-world problems. (Hesson ; Shad, 2007).

The teaching approach often inspires students goal-oriented actions, so the technique is very successful in enhancing student achievement. Teachers and students play an equally active role in the learning process. The primary function of the teacher is as a counsellor and to promote student learning and overall content comprehension. In both formal and informal measures of measurement, including group assignments, tests, class attendance, participation in different activities, projects student learning is evaluated.

TEACHER-STUDENT INTERACTIVE METHODS:

This teaching method is seen as one of the appropriate methods required to be used to improve the performance of the students. As teachers and students are equally active during learning process. Students can be assessed through participation in class activities like group discussions, debates, etc.

This century is known as era of digitalization . Thus e- learning is very important aspect of the teaching method in this century. Today, you will hear a lot of criticism because, relative to the last century or even two centuries ago, the classroom did not change dramatically.

The new century introduced significant changes in teachings and teaching methods. Teaching of the previous centuries differs from the education of the twenty-first century. The Internalization of culture and the introduction of new technology into learning are now the most observable phenomena.

Thinking is the process from knowledge learning by reading, from the teacher's speech to visual perception, or classroom discussion. Our way of life, modes of communicating, way of thinking, emotions, channels of control on other people, social skills, and social actions are altered by digital technologies. The high-tech environment-computers, smartphones, video games, internet search engines-reshape the human brain, as Myamesheva says.

Teaching experience highlights the importance of improvements in higher education. Teachers are currently facing the challenge of organizing learning that will allow students to recognize the value of applicable new knowledge and, more importantly, to acquire this knowledge actively as a basis for their individual growth. In Science teaching, two conflicting patterns have always been present. Th e first focuses on the incorporation of knowledge, the other on the separation of knowledge, and (Nguen and Smart 1996). Educators are of the opinion that the correct use of synectic techniques will resolve the educational problems relating to quantity and consistency. (S.Chandrashekharan ,2014)

All types of resources are used to make the learning easy. The conventional teacher-centered approach has been transferred from teaching to learning in the classroom. It is called a student-centered approach or a technique-based approach, the tools being the students.

If we want to improve the quality of education in our nation and cope with the challenges raised in recent years, we should pay sufficient attention to the evolving teaching approach, and efforts should be made to implement new approaches and develop new teaching techniques relevant to the needs of our nation.

PRACTICAL COURSES

Some practical courses have been prepared in power point presentation also video for some practical courses has been made. some experiments for the study of museum specimen to understand taxonomy, external morphology, different types of mouth parts in insects etc. have been prepared in power point presentations. Also videos of some experiments have been prepared to understand concepts like conjugation, budding, cell division, Estimation of some

ecological parameters like dissolved oxygen, water alkalinity, water holding capacity of soil, estimation of CO_2 from water sample etc. it will help student in virtual education.

Modern teachers, refer new generation of students, as "Next", generation Z, the digital generation, the social-digital generation.(Hietajarvi *et al.*,2015) As we all know learning space is expanding beyond the classroom" (Soldatova G, *et al.*, 2015). Recently teachers are using the internet video tools and for encouraging students to visualize concepts in biosciences. Since students have memory in the short term, new methods of information fixation in memory for long-term and skills development are required. It is interesting to realize the "superficial" and "deep"approach in obtaining knowledge. Deep approach, the transformation of knowledge, self-regulatory learning, relativistic views and the creation of knowledge will lead to deeper levels of learning among students" (Hietajarvi *et al.*,2015)

The scientific discipline "Pedagogical innovation survey assists in the creation, implementation and dissemination of teaching practice developments. According to Taubaeva and Laktionova, "the innovative policy is a systematic activity in the formation and development of academic material and in the organization of new activities" (Taubayeva *et al* .,2001).

The active use of innovative teaching methods by teachers is a necessity nowadays. Innovative teaching strategies are planning activities that involve new ways of interacting with "teacher-student," "teacher-student," a certain improvement in practical activity in the teaching process.The greater the teachers ' teaching strategies and techniques, the more engaging, varied it performs classes, better motivates the cognitive behavior of the participant, influences the experience of solving non-standard problems, stimulates in-depth preparation and the steady assimilation of realistic activity technology. A good teacher is continuously enhancing his teaching skills, exploring and implementing new teaching techniques and practices.

The framework method for the presentation of ideas related to biological processes and living organisms should not be ignored in applying the differentiated approach to teaching. Vsesvyatskiy (1938) substantiated the need to include a framework approach to nature studies, explaining the need to study biological processes in all life forms, namely morphophysiological, historical, physiological, ecological, genetic and evolutionary, biological and applied aspects (Goddard and Goddard 2007).

DISCUSSION

Traditional Teaching Method – An evaluation In the pre-technology education context, the teacher is the source, and the student is the receiver of the information. In terms of the delivery medium, the instructor can convey the message through the visibility of the "chalk-and-talk" tool and projection screen. This instruction system is based on a behaviorist viewpoint (Skinner, 1938) and is a common approach that has been used for decades as a learning tool in all educational institutes.

Demonstration method- In this method This strategy is applied mainly applied zoology fields, it is used to develop skills in the student. Demonstration of various crafts and equipment to research their working mechanisms, the use of bee wax frames, honey extractors, agricultural and sericultural instruments for their working mechanism helps to make learning permanent by involving different meanings, often creates interest in the learners and motivates them to participate actively.

Tutorial/ Project Method: It's an experience-centered career approach. This teaching method focuses on Learning by Doing, a theory of utility. Learner is carrying out such tasks and

learning new items. It contributes to his understanding and results in learning. It is possible to obtain project learning through constructive, imaginative, problem solving projects.

Questions-Answer Discussion method: An attempt is made by question to determine and assess the knowledge of students with regard to the subject. This mechanism guarantees involvement. The instructor should ask questions and allow the learner to ask questions.

Hands on experimental method: This practice is one of the important techniques for teaching science and forms an integral part of effective teaching of science. Under this approach, the instructor allows students to derive different scientific laws and principles on their own by engaging in the experiment work personally. Ex. Electrophoretic separation of proteins, estimation of various enzymes, histological slide preparations, etc.

Educational field trips: The use of educational field trips has long been a major part of the education programming specially in biology . Participants have good field trips First-hand experience relevant to the subject or idea In the program, being addressed. They have unique features. Learning opportunities that are not available within the context of Four classroom partitions.

The activity method is a student centred technique adopted by a teacher to highlight his/her method of teaching through activity in which the students participate and bring about efficient learning experiences.

INNOVATIVE TOOLS

Multimedia learning process

Multimedia is the integration of various types of digital media, such as text, images, audio and video, through an integrated interactive multi-sensory application or presentation to convey information to an audience. Traditional approaches to education have resulted in a conflict between what students being taught and what the industry needs. It's both demanding and exciting to design various projects. Luckily, to build these applications, there are many multimedia technologies available to developers. (Vaughan, 1998).

These technologies include, respectively, Adobe Photoshop and Premier for editing graphics and video files, Sound Forge and 3D Studio Max for creating and/or editing sound and animation files. Another part of making multimedia projects in the classroom is that students tend to do this in a team. The students will also have to learn to work cooperatively and jointly, using their group skills and a range of tasks to meet the sustainable goals of the project by working in a group.

ONLINE TEACHING METHODS:

Some of the best teaching model are discussed below.

1. Presentations: Online, when presented through video conferencing with a tool like Zoom or Google Meet, presentations are more effective.
2. Can use online white board for live online sessions.
3. Pre-recorded video lecture also aids in effective lecture delivery.
4. Flipped class rooms, google class rooms are having their own importance in providing effective communication.
5. Game based teaching through ice breakers activities like puzzle solving, drawing or sketching etc. is also effective as it refreshers students.

6. Forums and discussion bords also helps to discuss various concepts in zoology like different mechanisms of different process in cell and cell division.
7. Memory and mind maps, flowcharts, story telling, history behind different discoveries helps to enhance interest in subject.
8. Activity based methods like projects, case studies, problem solving, papers solving, models, posters or charts preparation on topics like DNA replication, Protein synthesis, Enzyme working mechanisms, separation techniques, sex determination mechanisms, working of cell organelles, etc. build up problem solving skills, research approach etc.
9. Visual aids like textbooks, reference books, different journals (Online /offline) and magazines are contributing demonstration and visualization of concepts.

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VARIOUS INNOVATIVE EFFECTIVE METHODS FOR TEACHING IN PHYSICS

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ABSTRACTS

The paper shows outcomes of the research of various innovative and effective teaching methods in physics and Science. It is identified that it is very important to educate teachers in deal with emphasize the significance of the own occupation of students, in accordance how to make an multidimensional project. Planned with projected physics teaching and learning seems to be one of the most effective methods for teaching science for better acknowledgement. It is important to make available teachers, seminars and prepare some projects with how to develop, conduct, and judge interdisciplinary projects. Projects are necessary in the –world of physics, modern physics and day to day life problems can be consolidated into the syallabus.To use innovate method is need of hour to change according to the environmental and global revolution.

Keywords: Lecture method, microteaching, innovation and relevance, imagination and scientific method, modeling method, demonstration, collaborating and learning etc.

INTRODUCTION:

The most effective teaching methods are those that suitable with the materials taught. Do not be hesitated to ask for your students which methods that might work best for certain materials. However, teachers' evaluation on the students' learning product as the results of the application of the methods need to be conducted. As the students are able to fully understand and adapt the materials taught to their needs, the methods applied to teach them can be considered as an affective teaching method.

The method, moreover, has to be able to help the students to create meaning for the information given.

The most effective teaching methods are those that suitable with the students' interest and learning environment. A certain method may be very effective to be applied in a certain class; however, it will not probably work the same as it is applied to a different class by different or even the same teacher. Therefore, what teacher can do to learn the most impactful method that can be applied for their teaching is by utilizing different methods, evaluate, and choose which ones work best.

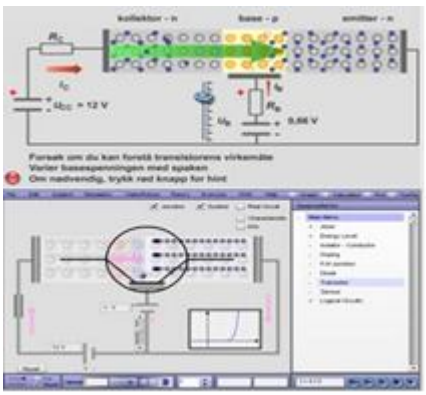
In order to apply a teaching method effectively, teacher has to be familiar with its characteristics; for instance, small group discussions commonly work well in a large classroom as teacher can easily control and monitor the students. Furthermore, students will get more chance to contribute and give opinions as they work in a small group. However, group discussion is not effective for demonstrating individual effort or understanding.

1) Lecture Method:

Teaching can be always go with visual aids like small videos, graphs ,photographs to help students imagine an Item or the situation or object or problem. Lecturing is as likely as the commonest and most economical way of presenting information . However, lecturing may not be the most appropriate method for the objective you set, or as straightforward a you may think. For the theoretical part interactive lectures and seminars are provided. Describing and explaining, is the method of teaching by demonstrating verbal examples of the subject that is to be understood .

2) Micro-teaching:

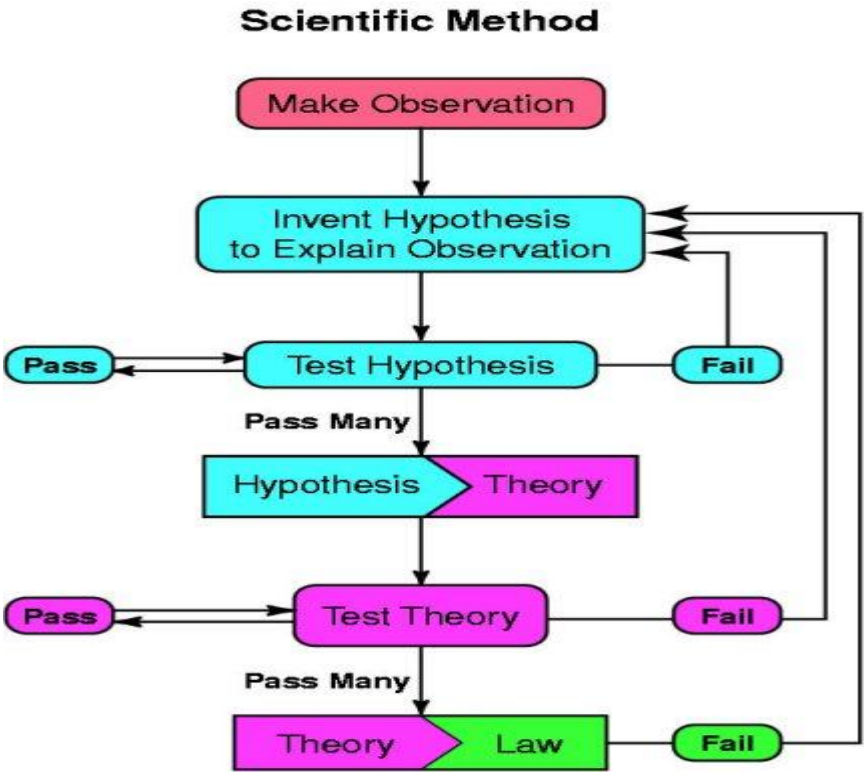
While Teaching the teachers in training a trajectory have to realize the vision and goals and capacity through an alternative portfolio-trajectory. The tasks are explained in a manual. There are a number of contact-moments, a number of essential seminars or lessons –depending on the assignments of the intermission and relevant coaching moments, e.g. group and individual supervision. A Teacher with a trajectory of less than 250 hours is not allowed the portfolio-trajectory. The teachers then has to use the routine learning-trajectory.



3) Innovation and relevance teaching in Physics:

To extend disparity in our teaching, we used visualizations and animations to make the difficult theoretical subjects simple. It makes very easy to understood how a transistor works if an visualization shows the inside of it. Then we could let the students work with problems using more advanced simulations on that subject. To prepare our students before manual laboratory

work, we can give them exercises using a "virtual Laboratory" that we developed. This helps students in both ways to understand what to do and give them more knowledge when entering the laboratory. Fig shows an visualization and a simulation in the "virtual laboratory" of a transistor. The last thing I have tried out in is to let my student do exercises with the "virtual laboratory", and then submit a report. The report must be sent automatically into our learning management system , to be examined and and approved. This could be exercises that is not possible to perform live or is not safe to perform in an normal laboratory. We have prepared several simulations that fit our ordinary laboratory-exercises. There is lump of work teachers to find the correct sources and right programs on the computer, but the award of finding these resources can be excellent. Visualization (Above) and simulation (below) showing the internal structure of a transistor. In the "Virtual laboratory" students can find out how the transistor works , it is not having more satisfied and skilled students, what we all want? Surely if the teacher has good computer skills, this gives students an excellent advantage. Findings says that interactive simulations are the undoubtedly powerful educational equipment , and should be designed with utmost care , tested and used in teacher –student together learning process in effective ways.



4) Imagination and scientific method :

This is widely used method and having huge scope and prevalent faith that scientists use a specifically and idiomatic method in going from monitoring to set up laws and theories, mainly the scientific method. The process of making something simple of a specifiable scientific method can be tracked to Karl Pearson's figure of scientific innovation. Pearson was a famous statistician and his knowledge of scientific thinking is implanted in a well segmented statement of method in his influential book The Grammar of Science, published for the first time in 1892. In this book he explained in detail the typical intelligence of the late 19th century figure of the

nature of the scientific venture. Pearson was having belif that that science was necessary an empirical-inductive enterprise that had four characteristics:

1. Science had achieved a superior kind of truth;
2. Science was characterized by inexorable progress;
3. Science was in the possession of the only method of interrogating nature, namely the empirical-inductive method (the scientific method);
4. This method could be simply described and easily taught.

5) E-learning in Physics:

With high number of students in low capacity student's lecture theatre we had to apply new technology! We mcan overcome this issue with using Video-conferencing of the lecturer and electronic media ,blackboard on a separate screen number using the existing study at black boards is mostly used for all teaching notes, PPT presentations, problem sheets. As it is new method there would be resistant from students to adopt the same compare tho our traditional interactive method quizzes & discussion boards. but They will came to know that this is most effective and easy to adopt .

6) Modeling method:

A model is a denotes structure in a physical teaching and its types . The model has number of presentations, which took together to explain the model of the system. Structure methid of **Models is a basic part of knowledge** Emphasis is placed on rectifying the underlying model of the system. Students understand or make a model and make inferences from the model to find out a solution. Majority of basic models are used repeatedly with small small modifications.

7) Demonstration (teaching):

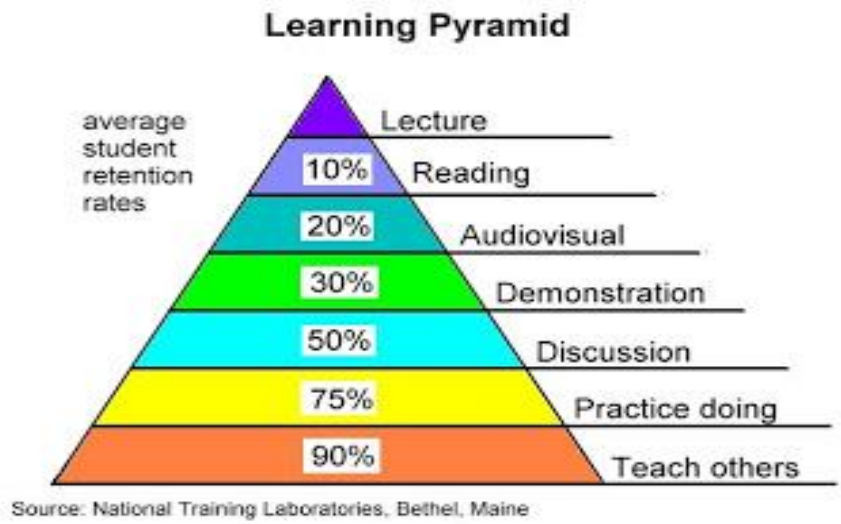
Demonstration is also a very powerful method of teaching where we can demonstrate various examples showing reason or proof and making students the objective more cleare and understandable By putting more simple , demonstration we can make subject simple . By using demonstration method , students are more confident potentially to clear the concept class material more wisely as discover in the study which specially gives importance on physics

demonstrations shared by teachers. Demonstrations are effetely used where students feel it difficult to connect book content to actual day to day usage or where students not able to apply the knowledge corelate or to understand.

Teachers while demonstrating the concept can also participate with students to take their learning out and from thrir learning's we can make out the correct and incorrect outcomes and can make strategy to understand the subject in better manner.. Though the content is limited, studies shows that the effects of demonstration changes of perspective in correlating to students, more effective n in the teachers' own classroom planning , and more own responsibility for student learning.

8) Learning by Teaching:

In this teaching method, students taken for granted the role of teacher and teach their squint . Students who teach others as a group or as individuals first learn and understand themselves the topic and a topic well enough to teach it to their colleagues. By using this method students participate in the process , acquire self-confidence and improve their overall communications and speaking skills.



CONCLUSION

The teaching communication skill to physics student is not always simple, but the above are the some of important skills that researchers look for graduates .The department of physics faculty at college level is already leading with this running innovative teaching methods to create a standout example course in keeping with the connected curriculum vision. Also there are new coursework methods introduced like the concept of physics video. From this students found challenging as well as learning it well suffise to teach it. In this paper total eight innovative teaching methods were discussed but there are so many innovative methods are also used like virtual physics lab for learning without minimal expenses . One more Advanced technique to improve thinking and problem solving skills called as computational thinking then multimedia approach to convey vast information using advanced media, ICT enabled learning to teach scientific ideas, video clips which are available online to show and teach a new concept, power points in their classroom session to make it more interesting, Science fair for students that they perform a task through a range of research and experiment, documented problem solving to understand a deeper process ,physics movie screening in classroom that clearly showcase the scientific concepts.

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PROS AND CONS OF INNOVATIVE TEACHING METHODS IN ECONOMICS WITH SPECIAL REFERENCE TO ONLINE TEACHING METHODOLOGY

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ABSTRACT
This paper analyses the understanding of innovative teaching methods that used in the application of Teaching Economics. It is commonly accepted that most effective way to increase student interest in economics is by applying innovative teaching methods to issues that students find particularly relevant in life. Though there are many innovative methods to teach economics, this paper focuses on online learning, which is widely used around the world and the students are learning by being at their own place, without going to the institutional place.

Keywords: innovative, economics, methodology, online, learning.

INTRODUCTION
Education is a light that shows the mankind the right direction to surge. The purpose of education is not just making a student literate but adds rationale thinking, knowledgeablity and self sufficiency. When there is a willingness to change, there is hope for progress in any field. Creativity can be developed and innovation benefits both students and teachers.

It is commonly accepted that most effective way to increase student interest in economics is by applying different innovative teaching methods for economics analysis. Method are of different types depending on the topic the teacher wants to teach in order to aid effective teaching learning process and to achieve the objective of teaching such as:

1. Demonstration method
2. Discussion method
3. Problem solving method
4. Discovery method
5. Oral exposition/lecture method
6. Role playing method
7. Case study method
8. Online teaching method

In other word, For the purpose of this research work the online teaching method for Economics will be considered:

OBJECTIVES OF THE STUDY
1. To identify the online teaching method, their academic performance and the factors affecting the students.
2. To evaluate the effect of method of online teaching economics on the performance of students

METHODOLOGY OF THE STUDY

Primary data were collected from the students of the Sarhad College of Arts, Commerce and Science, Katraj Pune-46. Secondary data were collected from published reports, online research journals and magazines. The researcher used random sampling method to select 273 samples of students who learn economics subject through online mode in college. For the collection of primary data the researcher used the structured questioner through Google form prepared for this purpose.

DATA INTERPRETATION

The Collected data were interpreted using simple percentage method and presented in the form of Tables and Diagrams.

Age wise classification

Students of different age groups have been learning in College. Table 1 furnishes the age wise classification of the students learning economics subject online in the Sarhad College of Arts, Commerce and Science, Katraj Pune-46.

Table-1:Age wise classification of Students

Age (in Years)	Number of Students	Percentage
15-20	220	80.6 %
21-25	53	19.4%
More Than 25	0	0 %
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

It could be inferred from the above Table 1 that out of 273 Students, 80.6 per cent are in the age group of 15 to 20 years followed by 19.4 per cent are in the age group of 21 to 25 years, while 0.00 per cent are in the age group of more than 25 years.

Gender wise classification of Students

Students of two different gender groups namely male and female have been learning in the Sarhad College of Arts, Commerce and Science, Katraj Pune-46. The following Table 2 shows the gender wise classification of students learning Economics in the college through online application.

Table-2:Gender wise classification of Students

Gender	Number of Students	Percentage
Male	75	27.5
Female	198	72.5%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

From Table 2 it could be inferred that out of the 273 Students, 198 students (72.5 per cent) are female and the remaining 75 students (27.5 per cent) are male.

Stream wise classification of Students

Table-3: Stream wise classification of Students

Stream	Number of Students	Percentage
Arts	71	26 %

Commerce	202	74%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

From Table 3 it could be inferred that out of the 273 Students, 202 students (74.0 per cent) are belongs from Commerce stream and the remaining 71 students (27.5 per cent) are belongs from Arts stream.

Area wise Classification of Students and Network (range) issue

Table-4: Area wise classification of Students and Network (range) issue

Area of Students	Number of Students	Percentage	Network (range) issue	Number of Students	Percentage
Rural	73	26.7	Network (range) issue (Rural)	63	86.3
Urban	200	73.3	Network (range) issue (Urban)	151	75.5
Total	**273**	**100**	**---**	**214**	**---**

Source: Primary data

(Figures indicates in percentage)

From Table 4 it could be inferred that out of the 273 Students, 200 students (73.3 per cent) are live in urban area and the remaining 73 students (26.7 per cent) are live in rural area. Further students face network (range) issue at the time of online learning 63 students (86.3 per cent) of rural area and 151 students (75.5 per cent) of the urban area

Classification of offline economics learning

Table-5: Classification of offline economics learning

Economics subject learn offline ever before	Number of Students	Percentage
Yes	230	84.2%
No	43	15.8%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

From Table 5 it could be inferred that out of the 273 Students, 230 students (84.2 per cent) are learn economics subject in offline mode ever before and the remaining 43 students (15.8 per cent) are not learn economics subject in offline mode ever before.

Classification of difficult part of economics subject to learn online

Table-6: Difficult part of Economics Subject to learn online

Difficult part of economics subject to learn online	Number of Students	Percentage
Table	30	11.0%
Diagram	75	27.5%
Theory	73	26.5%

Equation	95	34.8%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

It could be inferred from the above Table 6 that out of 273 Students, 95 students (34.8 per cent) are facing difficulty in the learning of economics equation in online learning followed by 75 students (27.5 per cent) are facing difficulty in the learning of economics diagrams by online learning, while 30 students (11.0 per cent) are facing difficulty in the learning of economics Table by online learning.

Classification of easy part of economics subject to learn online

Table-7: Easy part of Economics Subject to learn online

Easy part of Economics Subject to learn online	**Number of Students**	**Percentage**
Table	75	27.5%
Daigram	48	17.6%
Theory	127	46.5%
Equation	23	8.4%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

It could be inferred from the above Table 7 that out of 273 Students, 127 students (46.5 per cent) are comfortable in the learning of theory part of economics subject in online learning, followed by 75 students (27.5 per cent) are comfortable in the learning of table/schedule part of economics subject in online learning, while only 23 students (8.4 per cent) are comfortable in the learning of equation part of economics subject in online learning.

Analysis of Economics Subject Discussion

Table-8: Economics Subject Discussion

Discussion of economics subject in online learning	**Number of Students**	**Percentage**
Increase	100	36.6%
Decrease	173	63.4%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

From Table 8 it could be inferred that out of the 273 Students, 173 students (63.4 per cent) are state that discussion of economics subject in online learning decreases and the remaining 100 students (36.6 per cent) are state that discussion of economics subject in online learning increases.

Analysis of Activities of Economics Subject

Table-9: Activities of Economics Subject

Activities of Economics Subject	**Number of Students**	**Percentage**
Increased	143	52.4%
Decreased	130	47.6%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

From Table 9 it could be inferred that out of the 273 Students, 143 students (52.4 per cent) are state that activities of economics subject in through online learning increased and the remaining 130 students (47.6 per cent) are state that activities of economics subject through online learning decreased.

Analysis of Submission of Economics Subject

Table-10: Submission of Economics Subject

Submission of Economics Subject Becomes	Number of Students	Percentage
Easy	185	67.8%
Difficult	88	32.2%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

From Table 10 it could be inferred that out of the 273 Students, 185 students (52.4 per cent) are state that submission of economics subject becomes easy through online method and the remaining 88 students (32.2 per cent) are state that submission of economics subject becomes difficult through online method.

Analysis of Smart Mobile Phone Purchase

Table-11: Analysis of Smart Mobile Phone Purchase

Smart Mobile Phone Purchase only for online learning	Number of Students	Percentage
Yes	110	40.3%
No	163	59.7%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

From Table 11 it could be inferred that out of the 273 Students, 163 students (59.7 per cent) are purchased smart mobile phone only for the purpose of online learning and the remaining 163 students (32.2 per cent) already have smart mobile phone.

Analysis of expenditure on internet recharge

Table-12: Expenditure on internet recharge of students

Expenditure on internet recharge of students increases	Number of Students	Percentage
No	72	26.4%
Yes	201	73.6%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

From Table 12 it could be inferred that out of the 273 Students, 201 students (73.6 per cent) state that expenditure on internet recharge increased due to online learning and the remaining 72 students (26.4 per cent) state that expenditure on internet recharge not increased due to online learning.

Analysis of Health Problem

Table-13: Analysis of online learning cause any health problem

Health problem due to online learning	Number of Students	Percentage
Yes	100	36.7%
No	173	63.3%
Total	**273**	**100**

Source: Primary data

(Figures indicates in percentage)

From Table 13 it could be inferred that out of the 273 Students, 100 students (36.7 per cent) state that they face health issue due to online learning and the remaining 173 students (63.3 per cent) state that they did not face any health issue due to online learning.

MAJOR FINDINGS OF THE STUDY

- Majority (80.6 per cent) of the students are in the age group of 15-20 years.
- For this study 71 students participated from arts stream and 202 students participated from commerce stream
- Majority (73.3%) of the students are belongs from the urban area.
- Majority (86.3%) of the students who belongs from the rural area face the problem of network issue.
- 15.8% of the students learning economics subject first time.
- Majority (34.8%) of the students facing difficulty in learning of equations.
- Majority (46.5%) of the students feel that the theory part of economics is easy for them to learn online.
- Majority (63.4%) of the students states that the discussion between student and teacher of economics subject in online learning decreased.
- Majority (52.4%) of the students states that the activities of economics subject in online learning increased.
- Majority (52.4%) of the students feel that the submission of assignment, project, journal etc. becomes easy due to online system.
- 40.3% of the student purchases smart mobile phone only for online learning.
- Majority (73.6%) of the student state that expenditure on internet recharge of increases due to online learning.
- 36.7% of the student facing health issues due to online learning

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ROLE OF NEWSPAPERS IN TEACHING METHODS

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ABSTRACT
The lesson here explores how newspapers are a excellent medium of learning and relating theories and concepts from the subjects of business administration. This creates interest in the young minds of the students and clears their concepts. Concepts relating to marketing, HRM, sales, organization development, survey methods, market share, money market, pre & post pandemic comparisons effecting the industry are discussed in the lesson.

Keywords Change, technology, market share, induction, sales forecasting, newspapers, Experimental research, Advertorial, Survey method of research, organization development,

INTRODUCTION
Newspapers are the best textbooks. They give us latest information on a variety of subjects. Whatever latest is happening in the world in a subject is reported in newspapers. Many new things get updated and are reported in newspapers. These things slowly find their way into text books as theories and concepts. It takes time for the academic world to update their syllabuses as they have to go through a certain procedure in the universities. So, the best way to gain new knowledge is through the newspapers. To keep the interest alive of the students in the classroom they can be given updated information which appears in the newspapers. Be it any field of knowledge, arts, commerce, sciences we can find the latest information in the newspapers.

Therefore, newspapers are a good way to create interest in the minds of the students of any subject. With the advance of the internet, it is very easy for the world to exchange information across countries in the fraction of a second. The world is united in spite the boundaries of the nations. Knowledge is easily shared through newspapers. Newspapers across the world are published on a daily basis unlike magazines which are weekly or monthly. So, information is available daily. Nowadays, we can read online as well as offline newspapers. Some are available at a charge and most are free of charge. We can read any newspaper from any part of the world. Reading helps us in improving our writing skills as well and adds to our vocabulary. Our speaking skills are better when we have a lot of knowledge.

The lesson here explores the concepts of business administration which have appeared recently in newspaper reports.

Following are the newspaper clippings which have been taken from different fields of business administration for discussion here and relate to subject topics. It is very interesting to see how theory and concepts are visible in real life business situations. It creates an interest in the minds of the students.

What is a newspaper? It is a printed document which is published mostly daily or weekly. It consists of folded pages which carry news, articles of interest, advertisements and other features of interest. It carries information about current events. The Cambridge dictionary defines it as a regular printed document which is on folded sheets of paper. Nowadays, newspapers are also circulated through websites which contain the same content carried in hardcopies of newspapers.

SALES FORECASTING (SALES & MARKETING)

Refer to display no. 1 below, Forecasting is important for a business as it helps in planning future sales and on which production is also dependent. In fact, the entire supply chain is dependent on sales forecasts as it effects suppliers, purchase, transport, consumers etc. down the line.

What is Sales Forecasting?

Sales forecasting is the process of estimating future sales. Accurate sales forecasts help businesses to take good business decisions and predict short- and long-term performance. Businesses can base their forecasts on past sales data.[1]

In the newspaper clipping below, a period of April to December has been compared across financial years 2011 to 2021, sales during the period, for 2 &3 wheelers, passenger & commercial vehicles. It can clearly be seen how sales have dipped during the pandemic year of 2021 for the said period of April to December. The source of information for the same is from Society of Indian Automobile Manufacturers (SIAM). Historic lows have been reported due to the pandemic. This has in turn caused shortages of inputs required for the industry, semi-conductors, steel etc. This has led to supply and production disruptions. Financial Year 2021 is compared to financial year 2011, on the basis of which sales forecasts can be done. As quoted by the Managing Director of Maruti Suzuki & President of SIAM, the industry has to work hard to get better volumes and business. Car sales have crashed to an all time low in the last ten years.

The news clipping is useful for making a sales forecasting of future trends taking the present business scenario in consideration. Sales may not pick up as the pandemic is not over and normalcy to regain will take more time.

Sales forecast is a true indicator of what may happen in the near future taking a time frame into consideration. The sales forecast shows how many products are likely to be sold in a period in future in a particular market at a given price.

Correct sales forecasting is required for a business or a company as it helps to produce the right quantity at the right time. It also helps to make the purchase plan for raw materials, equipment's, labour etc, all the inputs required for production to be forecasted. There are companies which produce on an order basis, there are other who produce beforehand to meet future demands.[3]

Sales forecasting 15-1-21

At 18L, car sales crash to 10-yr low in Apr-Dec

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New Delhi: The auto industry moved in reverse gear during the nine months of FY21 as Covid-induced shutdowns as well as pressures on the economy and jobs saw sales of cars, two- and three-wheelers and commercial vehicles go down to historic lows.

According to numbers released by industry body Siam, sales of passenger vehicles — a cumulative of cars, SUVs, MPV/UVs — stood at 17.8 lakh units in April-December, the lowest in a decade since the 18.1 lakh units sold in the same period of FY11. Two-wheelers sales in nine months of this fiscal stood at 107.7 lakh units, lowest since 109.4 lakh units seen in 2013-14. Three-wheelers sales stood at 1.3 lakh units. In 2000-01, the industry sold 1.4 lakh units.

In commercial vehicles, the volumes stood at 3.6 lakh units (last lowest at 4.8 lakh units in fiscal year 2010-11), and contraction here clearly points out that the broader economy is still in deep trouble, and lacks confidence.

LOSING STEAM

Passenger Vehicles (Sales below 2010-11)

Two-Wheelers (Sales below 2013-14)

Three-Wheelers (Sales below 2000-01)

Commercial Vehicles (Sales below 2010-11)

Figures for April-Dec in Lakh

Source: SIAM

"The industry has to work hard to get to better volumes and better business," Kenichi Ayukawa, MD of Maruti Suzuki, who is also the president of Siam, said.

Ayukawa said that demand has been coming back, which was evident through sales over the past few months, but added that it is too early to call it a turnaround. There has been a shortage of key components such as semiconductors and also the coronavirus situation still persists even though vaccination drive will be beginning soon. "The sales growth that we saw during the third quarter of the current fiscal contains some of the pent-up demand from the first quarter. So, the standalone sales performance of the third quarter may not be a true reflection of the industry's overall sales," he said, adding that some more time is required to make a fair assessment of where the industry is headed for.

"The industry is facing a shortage of semiconductors, steel and other materials. These may lead to supply and production disruptions. There is also an impact of the price increase of steel, logistics and other raw materials. In such kind of fluctuations, it is very difficult to predict the demand scenario going ahead." Asked about his expectations from the upcoming Budget, Ayukawa said the industry awaits the introduction of the scrappage policy which would help weed out older polluting vehicles through incentives.

However, he said there is no immediate need for a GST rate cut and this remains a medium- to long-term request. "We can understand the government has major responsibilities and limited resources as of now. So, presently we are not pushing for a GST reduction."

Display no. 1: Sales Forecasting

CHANGE MANAGEMENT (ORGANIZATION DEVELOPMENT -HRM)

Refer to display no. 2 below, the newspaper clipping explains how Red hat helped bring about dynamic change in the infrastructure of Bajaj Allianz as the world became more integrated through internet telephonic as the pandemic surged. To bring about change in an organization, it can be brought about through change in the organization structure, change in the people and through change in the technology. Here the change was brought about through bringing change in technology.

Change is also referred to as CM by some authors. To bring about change in an organization, a change agent or a change leader is there who acts as a catalyst. To bring about organizational change, personnel, teams & groups, organizations are involved. It may also involve bringing about organizational restructuring. The organization goes through a transformation and phases through transitions during which the change is affected. Disciplines which are affected are behavioural, social sciences, IT and business solutions.

As quoted by the General Manager, Red Hat India, Marshal Correia, the customers today want the insurance providers to give them experiences like the one they get from a Fast Moving Consumer Goods (FMCG) app. The company Red Hat is helping to transform digitally the insurance company, Bajaj Allianz, so that they deal with customers more efficiently. Online usage increased considerably due to the pandemic and this change to be brought about necessitated action from the Insurance company. Through the customer bot on what s app, it was bale to provide many different operations like providing policy details, payment schedules, service requests. [5]

TOI
3/2/21
Change management
OD

How Red Hat helped Bajaj Allianz deal with the online surge

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Red Hat is helping digitally transform Bajaj Allianz Life in ways that are enabling the latter to deal with customers far more efficiently. The change proved to be particularly useful during the pandemic, when online interactions surged.

While the front-end transformation is complete, the back-end transformation of legacy infrastructure is expected to be complete by this year-end.

Legacy systems invariably throw challenges of scalability and ability to integrate with external systems. Bajaj Allianz Life is overcoming these challenges by moving from on-premise servers to cloud-borne systems.

DIGITISE YOUR BIZ

"The big problem with legacy infrastructure is it does not change, does not allow you to integrate with others, and it is not scalable. The core transformation project is going on for the last 18 months," says Goutam Dutta, chief information and digital officer at Bajaj Allianz Life.

In February last year, the new system enabled the insurer to launch a customer bot on WhatsApp through which it was able to service almost 20 different operations including providing policy details, payment schedules and other service requests. While that was just before the pandemic, the upcoming months of lockdown led to a surge in the usage of this service, with about 8 lakh unique customers using this till December. Without the cloud and the new systems, this would have been impossible to deal with.

"We have also come up with a Smart Assist feature, where we actually share the screen with a customer while filling up the details," says Dutta. The new platform also helps the insurer make its applications available 24/7 across its digital touch-points, including INSTab (a point-of-sale tool), Boing chatbot and i-Serv video-based chat solution, enabling it to quickly address customer queries.

> The big problem with legacy infrastructure is it does not change, does not allow you to integrate with others, and it is not scalable
>
> **Goutam Dutta** | CHIEF INFORMATION & DIGITAL OFFICER, BAJAJ ALLIANZ LIFE

> Consumers today want insurance providers and others to provide experiences like the ones they get from an e-commerce or FMCG app
>
> **Marshal Correia** | GENERAL MANAGER, RED HAT INDIA

A lot of these features were enabled by using Red Hat OpenShift, Enterprise Linux, 3Scale API Management, Runtimes and Directory Server. OpenShift is an enterprise-ready Kubernetes container platform to manage hybrid cloud deployments.

Bajaj Allianz Life's new core platform has shortened the time taken from ideation to deployment of new products and services from 6-9 months to less than a month, and helped issue policies in one day instead of three or more days.

"In the previous waterfall model of software development, it takes almost 90 days to just develop a product, depending on the complexity of the project. We helped create a more agile model, using devops and microservices," says Marshal Correia, vice president and general manager (India & south east Asia) at Red Hat.

Correia says consumers today want insurance providers and others to provide experiences like the ones they get from an e-commerce or FMCG app. "That is why such companies need to be agile," he says.

Display no. 2 : Change Management

LATERAL INDUCTION (HRM)

Refer to display no. 3 below, this is a term referred to which students come across while studying Induction & Placement. Here we come across a recent news item wherein central government openings have come up for lateral induction.

WHAT IS INDUCTION?

A new joined employee is inducted in a organization. He is made familiar to the organization. Since he is new to the organization, he is introduced to peers, seniors, junior staff, processes,

procedures, systems and practically everything in the organization. It is a first step towards making the new employee committed. It can also involve orientation and training the new employee. He should be made comfortable to the organizational culture. He is interconnected, interdependent to everyone in the organization.

Induction is being done on lateral entry & contract basis for 30 different posts. Entry is at the level of Joint Secretary/ Director of these professionals. Induction is normally given to new entrants to an organization and is often done along with orientation. In orientation, the employees are oriented to the organization and made familiar with things in the organizational process.[5]

In this case of lateral induction, the personnel who are already serving and are eligible are invited to apply laterally for the positions advertised.

children," he had said. AGENCIES

Lateral Induction HRM 6-2-21

30 central posts up for grabs by lateral entrants

TIMES NEWS NETWORK

New Delhi: Making a fresh move towards lateral induction of domain experts and technocrats into the bureaucracy, the UPSC has sought applications from "motivated Indian nationals" for 30 different posts of joint secretary and director across various ministries and departments.

While there are three openings at the joint secretary level, with recruitment on contract basis, in the ministry of commerce and industry; department of revenue, ministry of finance; and ministry of agriculture and farmers' welfare, 27 director-level posts (on contract basis) are up for grabs across finance ministry; ministry of commerce and industry; ministry of law and justice; agriculture and farmers' welfare; ministry of education; ministry of consumer affairs, food and public distribution; ministry of health and family welfare; ministry of road transport and highways; ministry of jal shakti; ministry of civil aviation; and ministry of skill development and entrepreneurship.

Joint secretaries are usually IAS officers recruited on the basis of Civil Services Examination held by UPSC, even though there are several examples of technocrats being given lateral entry – former Planning commission deputy chairman Montek Singh Ahluwalia being one.

A release by the department of personnel and training on Friday said, "Talented and motivated Indian nationals willing to contribute towards national building are being invited to join the government at the level of joint secretary/director on contract basis." Candidates can apply from February 6 to March 22. Shortlisting for interview will be done on the basis information provided by them in their onl-ine application.

In 2019, the government had recruited around eight professionals on lateral entry basis, as joint secretaries in various ministries.

OFFICE OF THE ADDL

Display no. 3: Lateral Induction

MARKET SHARE- PRE & POST PANDEMIC COMPARISON (MARKETING)

Refer to display no. 4, in the news clipping, market share of leading computer desktop & laptop companies, Indian, Chinese, American in origin, are compared pre & post pandemic. Quarter 4 growth of 2019 and 2020 is compared. Such news clipping, provide insight to the students about how MNCs analyse market share. The industry compares its market share.

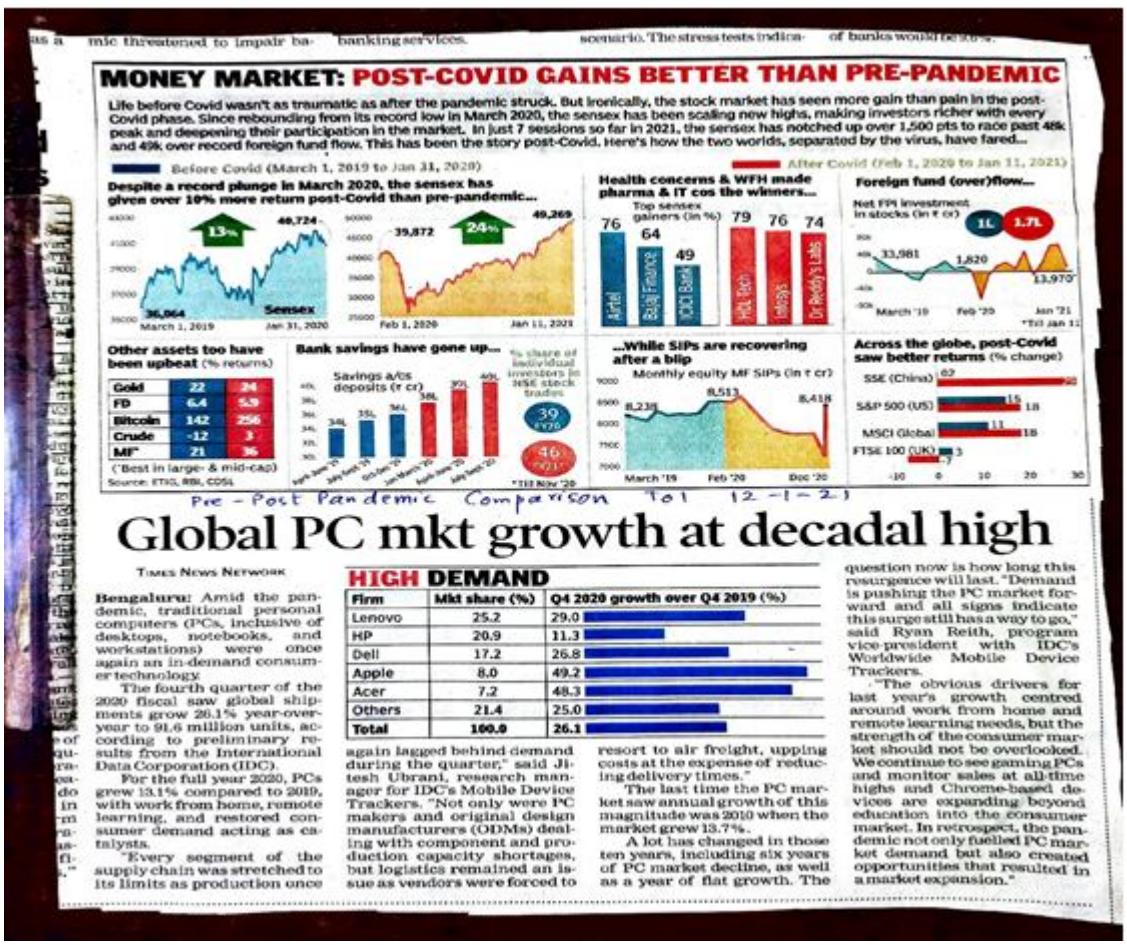
WHAT IS MARKET SHARE?

It is usually defined in terms of units or revenue. Market share is the percentage of a market by a certain company. Market share of a company is to be closely monitored for any change in the competition. Market share acts as a key in understanding the performance of growth of a company.[7]

There is a considerable increase in the sales of notebooks, laptops, desktops and workstations due to the pandemic as the world became closer online and things became more of work from home, remote learning. Increase in demand caused, shortages of components from component manufacturers.

Again, referring to the display no. 4, we see graphs wherein inn the money market post covid-19 pandemic gains are better than the pre pandemic performances. Unusually and unexpectedly, the stock market has been unaffected despite the pandemic. It can be interpreted that the industry is optimistic that the world will eventually come out of the pandemic and things will certainly normalize. Interestingly, the Sensex has given 10% more return post pandemic, so investors need not panic. Healthcare & IT companies have come out to be the top gainers when studied during the phase 2020-21. Gold as metal has been clearly the top gainer as the people have placed trust in it. Bank savings have risen with people gaining faith in them. Systematic Investment Plans (SIP) after having taken a hit are now recovering post pandemic. But it cannot be said that the pandemic is all over as the war to fight against it is not over as vaccines are being administered first to healthcare workers and the race is on with trials going on worldwide. Never before has the world put aside their differences and stood against a common fight.

Such news clippings are interesting to discuss with students and relate them to theories and concepts and invoke interest in the subject.



MONEY MARKET: POST-COVID GAINS BETTER THAN PRE-PANDEMIC

Life before Covid wasn't as traumatic as after the pandemic struck. But ironically, the stock market has seen more gain than pain in the post-Covid phase. Since rebounding from its record low in March 2020, the sensex has been scaling new highs, making investors richer with every peak and deepening their participation in the market. In just 7 sessions so far in 2021, the sensex has notched up over 1,500 pts to race past 48k and 49k over record foreign fund flow. This has been the story post-Covid. Here's how the two worlds, separated by the virus, have fared...

Before Covid (March 1, 2019 to Jan 31, 2020) | After Covid (Feb 1, 2020 to Jan 11, 2021)

Despite a record plunge in March 2020, the sensex has given over 10% more return post-Covid than pre-pandemic...

Health concerns & WFH made pharma & IT cos the winners...

Top sensex gainers (in %): Aarti 76, Bajaj Finance 64, ICICI Bank 49, Hcl Tech 79, Infosys 76, Dr Reddy's Labs 74

Foreign fund (over)flow...

Net FPI investment in stocks (in ₹ cr): 1L, 1.7L; 33,981; 1,820; 13,970*; March '19, Feb '20, Jan '21 *Till Jan 11

Other assets too have been upbeat (% returns)

Gold	22	24
FD	6.4	5.5
Bitcoin	142	256
Crude	-12	3
MF*	21	36

(*Best in large- & mid-cap) Source: ETIG, RBI, CDSL

Bank savings have gone up...

Savings a/cs deposits (₹ cr): 34L, 35L, 36L, 38L, 39L, 40L

% share of individual investors in NSE stock trades: 39 (FY20), 46 (FY21) *Till Nov '20

...While SIPs are recovering after a blip

Monthly equity MF SIPs (in ₹ cr): 8,238; 8,513; 8,418; March '19, Feb '20, Dec '20

Across the globe, post-Covid saw better returns (% change)

SSE (China) 62, 20; S&P 500 (US) 15, 18; MSCI Global 11, 18; FTSE 100 (UK) -3, 3; -10, 0, 10, 20, 30

Pre - Post Pandemic Comparison to 12-1-21

Global PC mkt growth at decadal high

TIMES NEWS NETWORK

Bengaluru: Amid the pandemic, traditional personal computers (PCs, inclusive of desktops, notebooks, and workstations) were once again an in-demand consumer technology.

The fourth quarter of the 2020 fiscal saw global shipments grow 26.1% year-over-year to 91.6 million units, according to preliminary results from the International Data Corporation (IDC).

For the full year 2020, PCs grew 13.1% compared to 2019, with work from home, remote learning, and restored consumer demand acting as catalysts.

"Every segment of the supply chain was stretched to its limits as production once again lagged behind demand during the quarter," said Jitesh Ubrani, research manager for IDC's Mobile Device Trackers. "Not only were PC makers and original design manufacturers (ODMs) dealing with component and production capacity shortages, but logistics remained an issue as vendors were forced to resort to air freight, upping costs at the expense of reducing delivery times."

The last time the PC market saw annual growth of this magnitude was 2010 when the market grew 13.7%.

A lot has changed in those ten years, including six years of PC market decline, as well as a year of flat growth. The question now is how long this resurgence will last. "Demand is pushing the PC market forward and all signs indicate this surge still has a way to go," said Ryan Reith, program vice president with IDC's Worldwide Mobile Device Trackers.

"The obvious drivers for last year's growth centred around work from home and remote learning needs, but the strength of the consumer market should not be overlooked. We continue to see gaming PCs and monitor sales at all-time highs and Chrome-based devices are expanding beyond education into the consumer market. In retrospect, the pandemic not only fuelled PC market demand but also created opportunities that resulted in a market expansion."

HIGH DEMAND

Firm	Mkt share (%)	Q4 2020 growth over Q4 2019 (%)
Lenovo	25.2	29.0
HP	20.9	11.3
Dell	17.2	26.8
Apple	8.0	49.2
Acer	7.2	48.3
Others	21.4	25.0
Total	**100.0**	**26.1**

Display no. 4 : Market share

ADVERTORIAL

Refer to Display no. 5, What is an advertorial? This is very well understood by going through the advertisement of Prestige. An advertorial is a type of an advertisement which is in the form of an editorial with content. The term advertorial is a mix of two words advertisement and editorial. It is an advertisement in a newspaper which gives information about a product, here pressure cooker with brand name Prestige, which is in the style of an editorial or an article in a newspaper.[11] An advertisement in a newspaper or a magazine that is designed to look like an article, defines the Cambridge dictionary. [12]

The advertorial of Prestige pressure cookers narrates how Radha has experienced using the brand. She was looking for a pressure cooker which does not create a mess in the kitchen. She narrates how she discovered in the market this brand of cooker which has a lid for "spillage control."

The advertorial referred to here also highlights the words of the Managing Director and quotes the price range of the prestige brand of pressure cookers.

DWBIZ

Retailing 3

ADVERTORIAL

TTK Prestige's Svachh Pressure Cooker allows Indian home-cooks to work smarter instead of longer in the kitchen

Meet, Radha Sharma, a busy working mother from Punjab. Radha burns the candle at both ends, having to work the whole day whilst still taking care of her young family and preparing nutritious and home-cooked meals for them. As a result, Radha has very little free time to spend in a meaningful way with her kids or to pursue any of her hobbies. All this changed, when she discovered TTK Prestige's Svachh pressure cooker.

Radha was searching for a pressure cooker that was easy to clean and didn't create a mess. TTK Prestige, India's leading kitchen appliances brand, understood the pain points of Radha and every Indian home-cook and as a result launched Svachh, which is India's first and only 'Spillage control' pressure cooker. The innovation lies in the unique lid of the pressure cooker, which is so deep that it controls any spillage during the cooking process. The lid is designed to prevent messy starchy water from flowing down the cooker and as a result drastically reduces the amount of cleaning and time that is spent in the kitchen. This has allowed Radha to spend more time enjoying various leisure pursuits.

TTK Prestige's Svachh pressure cooker is a must-have for the busy working woman or anyone that is strapped for time. The brand is committed to helping home-cooks to work smarter instead of longer in the kitchen, as the Svachh pressure cooker cooks food faster.

The Svachh pressure cooker is packed with a host of exciting features with safety being key. A mini metallic safety plug in the cooker melts to let out steam, when the pressure inside the cooker rises above the safe level. The Svachh has been specially created to be used on both induction as well as gas stoves.

Home cooks can choose from aluminium, stainless steel and hard anodized models. The anti-bulge induction feature ensures that the base doesn't disfigure over time, ensuring that the pressure cooker lasts for a very long time. Go out and grab your TTK Prestige Svachh pressure cooker and say goodbye to a messy kitchen.

Mr. Chiranju Kalro, Managing Director, TTK Prestige

TTK Prestige is constantly innovating to introduce interesting kitchen appliances to ease the day-to-day lives of our valued customers. We are the leaders of pressure cookers in the country and are immensely proud of our latest innovation in the pressure cooker family. Svachh Pressure Cooker will serve as the perfect gadget to enable homemakers to have cleaner kitchens, pressure cook conveniently while having to spend lesser time in the kitchen."

THE SVACHH PRESSURE COOKER RETAILS FROM INR 1040 ONWARDS AND IS AVAILABLE IN ALL PRESTIGE EXCLUSIVE STORES AND LEADING DEALER OUTLETS.

Display no. 5 : Advertorial

Survey Method (Research Methodology)

Survey methods are popular methods used research. During the pandemic, the government agencies used the method to find out the spread of Covid-19, so people can be vaccinated as early as possible. The news report shows how 97% of people are satisfied with the vaccine, it in turn encourages the masses to not hesitate to take the vaccine. This explains the importance of surveys to the students. The news clipping shows how data received from the respondents indicates social distancing at booths where people had been to receive the vaccination. Initially healthcare workers have been the target. Five lakh responded, of the thirty seven lakh reached for the response to the survey. The survey also reveals how antibodies have been found in the

healthcare workers which is a finding of significance. It clearly shows that despite the lockdowns the corona virus has spread across and infected the masses, more particularly first the healthcare workers who were exposed first. Many infected did not show symptoms, as they had already developed immunity in their bodies to fight the corona virus.

The advertorial is a good example of Retailing as well. Retailing or retail management as we refer to is a practical oriented subject. Of late there is a lot of focus on the retail segment. The retail market provides and fulfils the needs of the consumers. The pressure cooker is more of a women's product.

18 RM 5-2-21 Survey method TIMES NATION

Just 8,500 of 44L vaccine recipients reported adverse events: Data

Only 34 Needed To Be Hospitalised After Getting Jab

'Antibodies found in 27% of doctors, nurses'

Second dose to be given from Feb 13

Display No. 6 : Survey Method (Research Methodology)

EXPERIMENTAL RESEARCH (RESEARCH METHODOLOGY)

Refer to display no. 7, experiments are conducted in research. The newspaper clipping displayed here shows how is the efficacy of mixing two different vaccines to treat the corona virus, considering the mutations seen in the pandemic. It is interesting to quote this example of how two different vaccines are being used as an experiment in combination to see the results on the population. The vaccines of Pfizer & Astra Zeneca are being combined in two different injecting schedules. The trail intends to examine the responses to the dose of Pfizer followed by Astra Zeneca and also vice versa. The same are to be injected to the volunteers at intervals of 4 and 12 weeks. Since the risk levels are high, the trails are being done in phases which give gradual results.

Experimental research covers the study that follows a scientific research design. It is mostly followed in scientific research where experiments are conducted. Scientific research has an hypothesis, a variable which can be manipulated by the researcher, it can be measured, calculated & compared. Experimental researches are usually done in a controlled environment. Experimental researches are also carried out in social sciences, subjects like sociology, psychology, political science have researchers conducted experiments on the population. Such news clips clarify the concepts to student and create interest in them in the subject.

Two sets of variables are used in such types of experimental researches. The first set remains constant and the researcher can measure the differences in the second set. Some quantitative research methods can be experimental in nature. Experimental researches collect the data which helps in taking good decisions. Such researches should focus on the cause and effect. Researches conducted under scientific conditions are make use of experimental research. The constant variable is manipulated to see the results there of. Such researches attempt to establish cause & effect. [14]

Experimental researches lead to concrete conclusions as the findings are based on scientific lines. There is concrete evidence to support the results. Mostly two (or sometimes more sets) of samples are taken, one is kept constant and the other are subject to treatment (or manipulation). The treated samples show certain results which can be compared to the first set and inferences can be drawn from.

5-2-21
Experimental Research RM

TIMES

THE TIMES OF INDIA, PUNE

'TRADEMARK INFRINGEMENT': TAYLOR SWIFT SUED BY US THEME PARK 'EVERMORE' FOR USING SAME NAME FOR HER LATEST ALBUM

UK launches world's first trial to test efficacy of mixing vaccines

It Will Examine Immune Responses To An Initial Dose Of Pfizer Jab Followed By A Booster Of Astra's & Vice Versa

London: Britain on Thursday launched the world's first trial to assess the immune responses generated if doses of the Covid-19 vaccines from Pfizer Inc and AstraZeneca Plc are combined in a two-shot schedule. The British researchers behind the trial said data on vaccinating people with the two different types of coronavirus vaccines could help understanding of whether shots can be rolled out with greater flexibility around the world. Initial data on immune responses is expected to be generated around June.

The trial will examine the immune responses to an initial dose of Pfizer vaccine followed by a booster of AstraZeneca's, as well as vice versa, with intervals of 4 and 12 weeks. The trial will be the first of its kind to combine an mRNA shot — the one developed by Pfizer-BioNTech — and an adenovirus viral vector vaccine of the type developed by Oxford University and AstraZeneca.

Recruitment for the study starts on Thursday, with over 800 participants expected to take part, the researchers said. That makes it much smaller than the clinical trials that have been used to determine efficacy of the vaccines individually. The trial will not assess the overall efficacy of the shot combinations, but researchers will measure antibody and T-cell responses, as well as monitor for any unexpected side effects.

AstraZeneca's shot is separately being trialled in combination with another viral vector vaccine, Russia's Sputnik V

Matthew Snape, an Oxford vaccinologist who is leading the trial, said initial results could inform vaccine deployment in the second half of the year. "We'll get some results through, we expect, by June or thereabouts that'll inform the use of booster doses in the general population," he said. The trial is looking to recruit people over the age of 50 who may be at higher risk than younger people and have not been vaccinated already. Snape said mixing different shots had proven effective in Ebola vaccine schedules, and though the new trial mixed vaccine technologies, it could also work.

AstraZeneca's shot is separately being trialled in combination with another viral vector vaccine, Russia's Sputnik V. The human trials will begin next week in Azerbaijan and some Middle East countries, a Russian official said. The first results of the joint trials are expected in March, the head of Russia's RDIF sovereign wealth fund, Kirill Dmitriev, said. Currently, the US CDC and the WHO do not recommend interchanging vaccines as there is no data on whether doing so would still provide the same level of protection. REUTERS

World faces around 4,000 Covid variants

London: The world faces around 4,000 variants of the virus that causes Covid-19, prompting a race to improve vaccines, Britain said on Thursday. Thousands of variants have been documented as the virus mutates, including the so-called British, South African and Brazilian variants.

British vaccine deployment minister Nadhim Zahawi said. "Its very unlikely that the current vaccine won't be effective on the variants whether in Kent or other variants especially when it comes to severe illness and hospitalisation," Zahawi told Sky News. "All manufacturers, Pfizer-BioNTech, Moderna, Oxford-AstraZeneca and others, are looking at how they can improve their vaccine to make sure that we are ready for any variant — there are about 4,000 variants around the world of Covid now."

While thousands of variants have arisen as the virus mutates, only a very small minority are likely to be important and to change the virus in an appreciable way, according to the British Medical Journal. REUTERS

Display No. 7: Experimental Research (Research Methodology)

CONCLUSION

Learning and development occurs on a positive note when the students are introduced to the news clippings in relation to the subject matter. Learning is a continuous process and it never stops for a good teacher and student. There is a quest for knowledge and the thirst can be

fulfilled by learning. Learning results in development of the students & teachers. With development there is progress and the benefits are there.

There are many avid readers of newspapers. Their day starts with a newspaper in one hand and a cup of tea in another. These persons become uncomfortable if they don't get their copy of the newspaper on any day. There are others who read more than a copy of one newspaper. Some also prefer one in their own language and the other in English. People also have a habit of cutting clippings which are important for them and referring or circulating them to others. A newspaper is an important resource of information. It is a power house of knowledge. There are people who follow news sequences on following days. So an event reported is followed keenly by the readers on following days for what had happened later.

Newspaper reading sessions are organised by some schools and colleges where the class reads commonly a newspaper. This encourages the habit of newspaper reading. Some business schools have reading sessions of the economic times or some other business newspapers. The instructor clears the doubts of the students if the business language in the newspaper is not understood.

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TO STUDY ON INNOVATIVE TEACHING, LEARNING METHODS

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ABSTRACT
The main focus of this paper on innovative teaching learning methods . Now a days role of teaching learning method very useful for commerce study . The very important teaching methods are Power Point Presentation, Group Discussion, Case study , Reference book based assignment , Guest Lecture, Surprising Test and Multiple choice Question, Paper Solving, Workshop. Various activities were taken up to make in commerce study for students . The main aim of these teaching methods is to given students centered learning . Using these methods of teaching a student will not only have greater marks but greater knowledge about their subjects. Teaching methods should be more understanding and reflective learning based .These Innovative teaching learning method through will get deep knowledge of practical as well as theoretical .. Innovation teaching method are very effective for learning.

***Keywords**: Innovative , Teaching , Leaning Methods .*

INTRODUCTION:
Innovative teaching learning methods in Commerce very important part because the Innovative teaching learning methods day by day scope and demand increase. In this chapter Main objective is to discuss various Innovative teaching learning methods fuseful for commerce students . Power Point Presentation, Group Discussion, Case study , Reference book based assignment , Guest Lecture, Surprising Test and Multiple choice Question, Paper Solving, Workshop etc these are very important teaching learning method . It is learning process study so main purpose of this study to improve students motivation , engagement and attainment . Teaching methods should be more understanding and reflective learning based. Innovative methods of teaching learning allow us to facilitate productive and independent learning and experiential learning. It enables students to have a deep understanding of the subject.Innovative teaching learning method very helpful for overall development of students knowledge and experience about particular subject , get wider knowledge and to achive various goal .

OBJECTIVE OF THE STUDY:
1. To study on Important and Purpose of innovative teaching learning method
2. To Identify outcome through innovative teaching learning methods in commerce

RESEARCH METHODOLOGY
The data for the study have been collected from primary data and secondary data .The study primary data was collected through questionnaire . The respondents for which were selected through simple random sampling. Questionnaires were send to 121 respondents representing Sarhad college commerce students . Secondary data was collected through Books ,Articles, Research Paper and web site .

IMPORTANCE, PURPOSE AND OUTCOME OF THE STUDY :
POWER POINT PRESENTATION :
It is very important innovative teaching learning method . PPT will help the students understand concepts better as they will have to understand each and every concepts in details before presenting them and it will help students to retain information better and faster. Power point presentation the main Potential benefits of using presentation include: Increasing visual

impact , Improving audience focus , Providing annotations and highlights , Analyzing and synthesizing complexities , Enriching curriculum with interdisciplinary approach , Increasing spontaneity and interactivity. Student side view is that PPT presentation Boosts the confidence and able to present right view among the students as well as with the respective teachers .

CASE STUDY:

Case Study is Innovative teaching learning method . Case Study through learning outcomes for student point of view to enable a better and in depth understanding of a particular case/situation/ subject following which a student can develop independent analysis based on his/her understanding of the same. It helps to clarify doubts and helps in understanding concepts in depth also It help to understand real undergoing process. The use of case studies, therefore, makes it an important strategy in the classroom.

GROUP DISCUSSIONS:

Innovative teaching student centered learning method Group Discussions . Group discussions gives new ideas and new perspectives to the same topic as no brain works and thinks the same way. in this method each student will have a different perspective and a different way of looking at the given topic as well as enable students to be comfortable presenting their views on a topic amongst peers. It also helps them have a healthy debate and analyze a subject from various perspectives and share their individual analysis with others as well as get to know others opinions. Also brings out good diction and helps build confidence level. This will help the students understand every topic easily and quickly.

REFERENCE BOOKS BASED ASSIGNMENT :

Reference book based assignment is Innovative teaching learning method. Reference books based assignment main aim Search Assignments will increase the knowledge of a student as to do research for the given topic a student will read more books and take information from other sources also. This will help a student to widen their knowledge.It also enable in depth study as well as to gain access to more wider scope of knowledge compared to studying through a single book.

SURPRISE TEST

SURPRISE TEST ALSO ONE IMPORTANT INNOVATIVE TEACHING LEARNING METHOD . THE SURPRISE TEST students to improve their understanding , ability and attitude .Surprise Test shows how much a particular student has understood conceptual wise and what they have retained from the lectures they have attended. In surprise test a student has no time to mug up the answers but write only what they have understood. . The characteristics of students as well as teachers may sometimes also be created . This testing also allows teacher to train the students Psychologically for exam . This test through preparedness, memory and understanding based aspects of learning.it is very Motivates learners to stay updated. Helps to evaluate your current position in syllabus preparation and helps in betterment of new way of preparation for better future results.

MULTIPLE CHOICE QUESTION

Multiple Choice Questions known as MCQ type questions . MCQ study is Innovative teaching learning method MCQs are the best form of exams as those students who mug up their answers or just study the book will now have no chance to do that. In MCQ pattern questions can be formed in and around a certain concept which if the student had understood can only answer otherwise he/she won't be able to answer it. In MCQ pattern the correct IQ of a student can be judged as to be able to answer the questions logic had to applied and just remembering answers will not help. For MCQ study must be refer reference books. Multiple Choice Questions helps in getting depth knowledge of subject.

Paper Solving :

Paper Solving study is Innovative teaching learning method . The main aim of this method to understand paper pattern, it would help them to manage time effectively at that time . Paper solving teaching method through student help them to see where they lack in their preparation and how to fill the knowledge gap in it .It also help in evaluate performance and students score good marks in examination .

Sr.No	Students	Number Of Respondent	Percentage
1	Under Graduate	95	79.5
2	Post Graduate	26	21.5
	Total	121	100

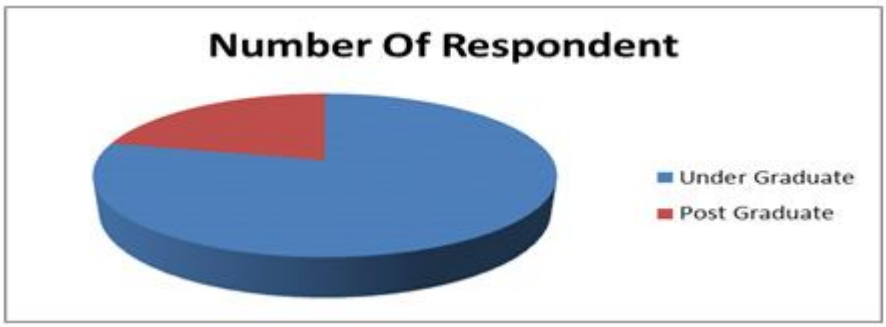
GUEST LECTURES :

Guest Lectures is innovative teaching Learning method . Guest provide current Knowledge to students about Corporate Sector in practical as well as theoretical. Also create awareness among students about future Importance , challenges and corporate sector or company , firm demand .

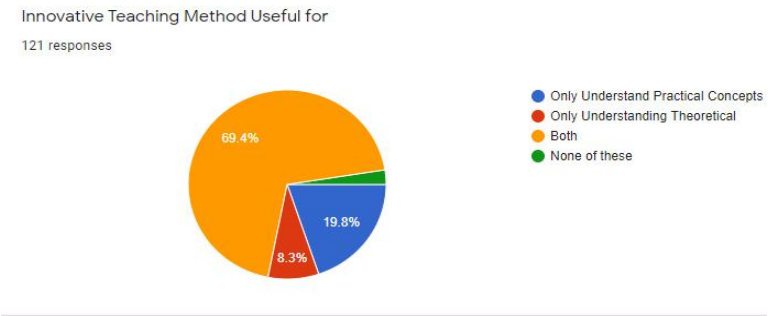
DATA ANALYSIS AND INTERPRETATION :

In this research study survey was conducted by a questionnaire . Total 121 graduate and post graduate students from Sarhad College Of Arts ,Commerce and Science Katraj Pune fully fill questionnaire were received .

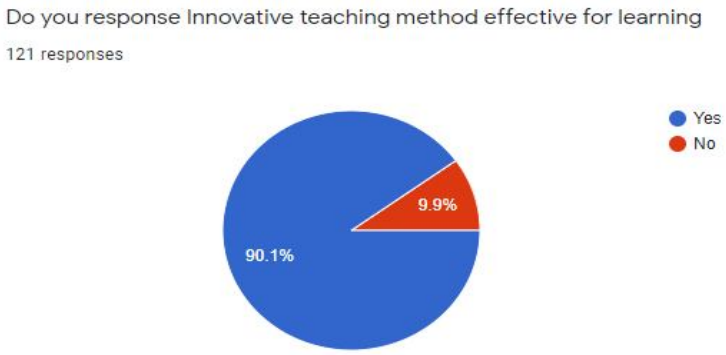
Table 1



This Graph shows that number of respondent under graduate and post graduate . The respondents are majority of 79.5 % from Under Graduate.



This graph shows that 69.4%(84) respondents agree with innovative teaching method useful for practical as well as theoretical learning method .



This graph shows that innovative teaching methods effective for learning .Total respondents 121 out of that majority respondents 90.1 % (109)opinion innovative teaching method for effective learning .

FINDING:

1. Total number of respondents 121 out of that majority of 79.5 % from Under Graduate.
2. Power Point Presentation, Group Discussion, Case study , Reference book based assignment , Guest Lecture, Surprising Test and Multiple choice Question These are the best innovative teaching methods. The majority of respondent(56 %) opinion all these teaching method very useful for learning .
3. 69.4%(84) respondents agree with innovative teaching method useful for practical as well as theoretical learning
4. Reference book based assignment very useful for deep study .Respondents are majority of 56.2%(68) .
5. Total respondents 121 out of that majority respondents 90.1 % (109)opinion innovative teaching method for effective learning .
6. Role of Innovative teaching learning method very important for learning process . Important wise 66.9 %(81) majority Respondents.

SUGGESTIONS:

1. Teaching methods should be more understanding and reflective learning based where learners can feel involved as much as the educator in the process of learning .
2. Incorporate audio – visual materials to supplement textbooks during your session .

CONCLUSION :

Innovative teaching learning method very helpful for overall development of students knowledge and experience about particular subject , get wider knowledge and to achive various goal. Case study helps to clarify doubts and helps in understanding concepts in depth also It help to understand real undergoing process.Surprise test through preparedness, memory and understanding based aspects of learning.it is very Motivates learners to stay updated. Helps to evaluate your current position in syllabus preparation and helps in betterment of new way of preparation for better future results. Innovative teaching methods are an upscale mix of education, peer to peer interactions and technology to help learners develop a better understanding of subject matter and at the same time groom their own personalities through confidence building and team work. Using these methods of teaching a student will not only

have greater marks but greater knowledge about their subjects. These methods in my opinion are the best way to teach anyone as it will be easy to understand what has been taught and retention of it will last for lifetime. It is best as the student will have equal contribution in each concept and they will ask more relevant questions and seek answers based on practical knowledge.

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THE SCIENTIFIC APPROACH TO TEACHING MATHEMATICS

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ABSTRACT
Modern math teaching methodology offers various possibilities for solving the problem of involving students in independent and research work, it develops their problem solving skills and develops their creative thinking processes and skills. One of those possibilities is in the area of scientific framework. The foundation of a scienti c framework is the principle of science and scienti c research methods. The article describes science in various segments of math teaching starting with the nature of math to mathematical tasks as an important method in shaping the system of basic mathematical knowledge, abilities and habits in students. In the end, some drawbacks in math teaching are mentioned which occur due to the inappropriate treatment of science in the teaching process.

***Keywords**:- Math, teaching math, scienti c approach, the science principle, mathematical concept, theorem, problem – task.*

INTRODUCTION:-
Math teaching today primarily takes place within a professional frame- work. However, teaching math is a complex and demanding process. Even though being professional is a condition for its success, it is not suf cient. The complexity is successfully resolved by relating math to other sciences. That way we get a process which has to take place harmoniously within several frameworks.

The main frameworks are language frameworks, professional frameworks, methodology frameworks, scienti c frameworks, pedagogical frameworks and psychological framework. As it is not easy to achieve harmony, occasional slips and weaknesses occur in math teaching which significantly influence the quality of math education. That re ects negatively on the aims of modern math teaching which emphasizes involvement of students in independent and research work, developing skills for problem solving and the development of creative thinking and creative skills. the above mentioned problem. A teacher can nd many possibilities within the scienti c frameworks.

The foundation of scientific frameworks is the science principle and scienti c research methods.

THE SCIENCE PRINCIPLE:-
The science principle in math teaching consists of the appropriate harmony of teaching content and teaching methods on the one hand and the demands and regularities of math as a science on the other hand. That means that a math teacher should introduce students to those facts and form in their thought processes those mathematical occurrences which are scienti cally founded today. Math teaching has to be such to enable further broadening and enrichment of content and a natural continuation of math education at a higher level.

It is evident that from the description the principle of science makes a connection between math as a teaching subject and math as ascience.

SCIENTIFIC METHODS:-
In the process of learning and becoming involved with the law of nature, scientists apply special methods – scienti c research methods. Basic methods of scienti c thinking and research are:

analyses and synthesis, analogy, abstraction, and concretization, generalization and specialization, induction, and deduction. The work of a math teacher in a classroom differs in many respects from the work of a math scientist, but there are also these common characteristics: In the process of learning the scientist applies the mentioned methods since they are necessary for obtaining new statements, their proof and their link with already known facts and theories. The shortest overview of some mathematical theory has four steps:

A) Stating basic concepts

B) Axiom formulation

C) Introduction of new concepts

D) Deriving and proving a theorem.

TEACHING MATHEMATICS:-

From the comparison mentioned we can easily conclude that scienti c methods are important for modern math teaching. That is why they are the subject of research in modern math teaching methodology. Through the selection of appropriate problems and through the application of that method a creative teacher can prepare students for work which is very similar to research work, work of a scientist. Plenty of math teaching content can undergo such application thus meeting the science principle in its extent.

What does our teaching practice show in that respect? During the lesson, the math teacher often says: “the analysis shows”, “let’s have a look at some concrete examples”, “analogous it is proven”, “this set of facts induce the conclusion”, “the result of these observations is a generalization”, “through specialization we get the formula”, “mathematical concepts are abstract” etc. Do the students understand these words? How do we check their understanding? Knowledge of the procedures mentioned is often implied and therefore lack an explanation. That is not good.

Students should gradually and appropriately be taught how to analyze, synthesize, abstract, induce, deduce, generalize, specialize, and observe analogies, regardless of whether they will be seriously involved in math at a later stage. As opposed to the usual acquisition of content, this is a higher level of mathematical education. Mathematical way of thinking is a valuable gain of mathematical education, applicable in many other activities. The words gradual and appropriate are emphasized. If scienti c procedures are appropriately and correctly applied, with a necessary feeling for the dif culty of math content and mathematical way of thinking, taking into consideration mathematical abilities of each student, it can be expected that math teaching will be successful. On the contrary, students will have significant dif culties in acquiring the teaching content and with time they can get the wrong impression that math is a more dif cult subject than it actually is. Sadly, math books, and consequently the teaching process do not pay sufficient attention to the regularities of the application of scienti c procedures. In teaching some math content it can be established that they are wrong from that point of view.

MATHEMATICAL CONCEPTS:-

Concept is a form of thought which re ect important characteristics of the objects studied. The process of formulating a concept is a gradual process. We can roughly describe the process in the following way: The initial and most simple step of being aware of the concept is observation and introduction to concrete objects and their concrete characteristics related to the concept and sensory awareness observation. The second step is observing something general and common to elements in the observed group of objects – having an idea about the concept. The third step is

pointing out the important characteristic of such objects – formulation and acquisition of the concept.

It is not difficult to recognize some important scienti c procedures in the described process: analysis, synthesis, abstraction and generalization. That means that any concept, including mathematical concepts, after careful analysis develop through abstracting characteristics of objects which exist in nature and through generalization. In that way mathematical concepts, although abstract concepts, re ect some characteristics of the real world and in that way contribute to their awareness. According to that, in teaching mathematical concepts, the teacher realizes the science principle if the process of formulating concepts is appropriately and if he adheres to the rules which must satisfy the de nition of a concept.

At rst glance it can seem that the need for content minimum in the de nition is rather rigorous, even when it can easily be accomplished in teaching. That is not the case. A demand has its methodological explanation. Redundant de nitions on the one hand burden the student's memory, and on the other hand cause confusion in differentiating de nitions and theorems.

The critical place for working on a concept is the transition to that level where the abstraction procedure begins, since the transfer from concrete to abstract is rather dif cult for some students.

One of the characteristics of a concept as a form of thought is that formulating a concept as part of human awareness is inseparable from expressing words or recording or using symbols. This characteristic is especially emphasized in mathematics. The issue of language in teaching math is very sensitive. There can be vagueness and violation of the science principle in this area. As an example we can look at several formulations from math books: Parallelogram is a quadrilateral whose opposite sides are parallel. Parallelogram is a quadrilateral whose opposite sides are parallel and congruent, opposite angles is congruent and the angles on the same side are supplement. The bisector of a length is the set of all points of a plane which are of the same distance from the end points of a length. An equation in the form $ax^2+bx+c = 0$, where a, b, c are real numbers and a □ 0, is called equation of the second degree or quadratic equation. The first sentence is a concrete de nition of a parallelogram; however it would be even better and more precise in the following form: A quadrilateral whose opposite sides are parallel is called a parallelogram.

The second statement is not a de nition since it has redundant words and concepts and it is unlikely that all sixth grade students would know how to use it. It actually consists of the rst de nition and three theorems.

The third sentence causes ambiguity. It can be a de nition of the symmetric length of a line; however, since in teaching the usual de nition is the symmetry of the length as a line which passes through the midpoint of the length and is perpendicular to it, the mentioned theorem needs to be proven.

The fourth sentence is a concrete, abstract-deductive de nition of a quadratic equation.

At times the science principle is realized in agreement about the meaning of a particular concept, the size or object and the explanation why the agreement is introduced.

THEOREMS AND PROOFS:-

What a theorem is we know. A theorem is a mathematical judgment whose truth is established by proof. A theorem is one of the most important mathematical concepts and its analysis

demands special attention of every math teacher. Appropriate teaching of that concept enables faster development of mathematical thinking of a student and better understanding of math itself.

In teaching a theorem the teacher realizes the science principle if he teaches his students to appropriately and precisely formulate a theorem, clearly differentiate assumptions from a theorem statement, formulate a theorem twist, formulate an opposite statement, and if he achieves understanding of the methodology in proving a theorem. Indirect theorem proofs, especially forms such as proof of contraposition and contradiction create great dif culties for students.

The question posed here is: should a student who will not deal with mathematics in everyday life at a later stage in life, or for whom math will not be of essential importance, know and understand these theorems? The answer can be portended from the following irrefutable truth: learning how to prove means learning how to judge, and that is one of the basic tasks in teaching math. Every person should know how to judge in life. How else can two different statements be compared, or extract from several statements those that are true, check the correctness of a suspicious proof, disprove someone's opinion, come to the appropriate conclusion about something, etc.? Yes, every student should learn how to prove. That is why education is not complete if a student throughout schooling has not encountered and understood proof for several standard mathematical theorems.

Teaching how to prove presents a great challenge for a math teacher, since it obviously is neither simple nor easy. Especially since a teacher must keep in mind an important fact: Although math is a deductive science, school math is not developed at any teaching level as a strictly deductive system, but remains within the framework model. This especially applies for math teaching in primary school since it is inductive for the majority part. Many theorems are taught without proof.

TASKS:-

Contemporary math teaching presupposes different knowledge activities than traditional. Emphasis is given to the development of the ability to work independently with a creative approach to math, and on developing conditions for successful application of acquired mathematical knowledge and abilities. Students' independent work on acquiring knowledge of math is achieved largely through the Possibility of appropriately choosing and using teaching tasks. In that way tasks become an important means in forming students systems for basic mathematical knowledge, abilities and habits and aid to the development of their mathematical skills and creative thinking.

A task is a complex mathematical object and its composition is not always easy to analyze. However, in a broader sense we can isolate ve of its basic constituents: conditions, aim, theoretical basis, solution, and overview.

The questions obviously point to analysis, synthesis, analogy, specialization and generalization. In seeking answers to those questions particular mathematical skills of students are developed and nourished, and their creativity is lifted to a higher level. The example of mathematical content where analysis is important are school word problems. Why do such problems pose dif culties to students and teachers to the extent that some teachers avoid them? For the majority part, the explanation lies in the nature of the problems themselves. Each such problem actually consists of two problems: making equations by translating normal language into mathematical language equation solving.

The rst one is not always easy, and demands signi cant mental effort and knowledge of the procedure of analysis, which it is often presupposed that students know without explanation. This is where the dif culties arise, and the result is often antagonism towards such problems. However, solving equations is very useful since it enables the development of logical thinking, resourcefulness, observation and the ability to independently conduct small research. That is why it is not a good idea to avoid such problems; rather they should be appropriately methodologically explained so as to meet their educational goal.

SHORTCOMINGS:-

Here are some shortcomings in math teaching observed during teaching practice of math students in the teaching profession and who are very much in uenced by the science principle and with the application of scienti c methods:

1) Knowledge of mathematical concepts is really confusing. At the beginning of their education in methodology they do not know the principle of de ning mathematical concepts, to they introduce everything they know about a concept into the de nition. In that way, instead of a short, precise and complete de nition of a concept they get a redundant text in which the basic point is lost! Such confusion, or one could say ignorance, cannot be a means for successful math teaching. A methodologist should invest a lot of effort into lling the observed gaps in students' knowledge.

2) In math teaching, synthesis is not often preceded by analysis, and that in uences the clarity of teaching and understanding the problem thus lowering the value of teaching. Analysis is more or less a necessity in all research and cannot be avoided.

3) Students do not always clearly differentiate between de nitions and theorems.

4) In inductive teaching an appropriate number of concrete and special cases is needed. A math teacher often considers an insuf cient number of such cases, so the obtained statements become inconclusive and unclear with the consequence of students' lack of knowledge. Another error by teachers is also present when they do not give a larger number of students the chance to become involved in working out the inductive sequence.

5) Generalization is also a critical point in math teaching since the transfer from concrete and individual to general is often dif cult for students to grasp. That is why a math teacher is faced with a responsibility to make the transfer for students easier using appropriate methodological procedures and skill.

6) A lot of mathematical content enable generalization, but math teachers often overlook such situations. This is a disservice to students learning math since generalizations are suitable for the development of mathematical thinking in students. This is especially true for gifted children who most likely have mathematical skills for broader studying of math.

7) In math teaching, analogy is not used enough although it is the best means for faster development and acquisition of new mathematical truths.

8) Math teacher creativity is often repressed due to overly relying on the manner of teaching mathematical content in textbooks.

CONCLUSION:-

We have already mentioned that a math teacher need not be a scientist in order to appropriately and adequately apply the science principle and scienti c methods in teaching. This occurs in math teaching without much interference. Solving a math problem implies some research and development. That is why the teacher has to create the spirit of curiosity in his students, the

inclination for independent mental work and to show them ways to new discoveries. A creative math teacher using creative teaching methods has great chances to develop in his students creative characteristics.

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INNOVATIVE TEACHING METHODS USED IN COMPUTER SCIENCE

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ABSTRACT
There are different types of methods used in teaching. In this paper I explain various methods like chalk and talk, lecturing, Model-Based Learning, Brainstorming, Problem solving, Projects based learning, Seminars, workshop, Inquiry based instructions, Tutorial and Group Discussion, Classroom discussion, methods which are used while teaching computer programming language.

***Keywords**: Teaching methods, computer, programming language, Model-Based Learning, Brainstorming, Problem solving, Projects based learning, Seminars, workshop, Inquiry based instructions, Lecturing, Tutorial and Group Discussion, Classroom discussion.*

INTRODUCTION
Teaching is the main factors of education system. Uses of different methods in teaching make the education interesting and easy.

The classroom is a dynamic environment which brings students together from different backgrounds with various personalities and abilities. Being a teacher we require the implementation of creative and innovative teaching strategies to meet students' individual needs.

Teaching method depends on what fits you - your educational philosophy, scope of subject, classroom demographic and course mission statement etc.

There are different methods in teaching we can use them according to content and syllabus.

OBJECTIVE
1. To know the various methods of teaching.
2. To know the relationship between teaching method and education.

DIFFERENT TEACHING METHODS USED IN COMPUTER SCIENCE
Model-Based Learning:

A beneficial and productive way of learning is model-based learning. The students in the lecture would automatically be more attentive. This approach will make an impact the memory of pupils. In this method teacher can show the live model of different concept and their working. This method can be used in stack, tree, queue of data structure etc.

BRAINSTORMING:
It is group activity. It is design to generate a large no of idea for the solution of a problem. In this method one topic is given to group of students, every one link on that topic and gives their own opinion. This method can also be used in organization to solve a problem. It is student-centered method. This method is used to solve the case studies in software testing.

PPT PRESENTATION
In this method teacher create PowerPoint presentation on the different topic with animation. And explain slide in front of students. it create interest among students. Students concentrate to slide. This method is suitable for theoretical subject to explain the theory point wise.

VIDEO LECTURE

A video lesson or lecture is a video containing instructional content for a subject to be taught. It may be a teacher's video talking to the camera, photos and text about the subject or a combination of these.

ONLINE LECTURE

Online college classes work by allowing students to access lessons submit assignments and receive Grades all through the Internet, often without having to step foot on campus at all. Online college lectures can take many forms, from videotaped Versions of traditional lectures to interactive forms of learning. This method is useful in pandemic period. We use this method in corona pandemic period. This method cross the geographical limitation. Technology plays very important role in this method.

PRACTICAL

With practice-based learning, you combine theory and work experience throughout the duration of your learning with a strategic, reflective process. As you learn it, you implement the theory in the classroom, assess its effectiveness and revisit your initial framework according to what is actually useful. This method can use for all the programming language. Theory covered in classroom and its practical implementation done in computer lab.

PROBLEM SOLVING METHODS

Problem solving is the act of defining a problem; determining the problem's cause, defining, prioritizing, and choosing solutions for a problem; and implementing a solution. This method can apply to solve the mathematical problem.

PROJECTS BASED LEARNING:

Project-based learning is an effective teaching method. Small and live project are given to students on different topic. It helps the students to apply the concepts which result in deeper understanding of the subject and related topic. This method is suitable for all the programming language in computer science like web technologies, java, c++, c etc.

SEMINARS

Seminars are simply a group of students come together for the discussion and learning of specific techniques and topics. Usually there are several keynote speakers within each seminar, and these speakers are experts in their own fields or topic. In this method college called the expert and gives them opportunity to share their industrial knowledge and experience with the students. This method is also useful for different programming languages.

WORKSHOP

The approach of the workshop helps the teacher create an atmosphere in which the student is more likely to be interested and inspired. The approach of the workshop focuses on participatory, hands-on learning; small-group activity and problem solving; discussions with pairs and small groups; etc.

INQUIRY BASED INSTRUCTIONS

Encouraging students to ask questions and discuss their own perspectives helps to develop their ability to solve problems and to gain a deeper understanding of learning concepts. They can also be subjective, however, and allow learners to share their specific opinions e.g. ‘why for loop is used?’ or ‘can I start variable name with digit?’ etc.

TUTORIAL AND GROUP DISCUSSION:

A special part of the educational experience is tutorial instruction. Students discuss the subject with the faculty individually or in small groups in the Tutorial and Group Discussion, which

improve their verbal communication skills and give them the opportunity to receive continuous feedback. The student is motivated by the faculty to develop logical and analytical thinking and problem-solving skills. Tutorial discussion allows students to see the importance and effects of their experience in order to apply what they have learned.

CLASSROOM DISCUSSION

Classroom discussion is the most common form of interactive method of teaching in a class. It is also a democratic way of managing a class, where each student has equal opportunities to communicate and express their opinions. A debate that takes place in a classroom can be initiated either by a teacher or by a student. A presentation or a demonstration may also accompany a debate. Class discussions can improve the understanding of students, add meaning to academic content, expand student perspectives, highlight opposing views, strengthen awareness, build trust, and foster learning culture. Depending on the subject matter and format of the course, the possibilities for substantive and engaging in-class discussion can differ widely. "A successful debate in the classroom can be done by examining further questions among the students, paraphrasing the knowledge gathered, and using questions to build analytical thinking with questions such as

"Can we take this one step further?" "What ideas do you think could fix this problem?" "How does this relate to what we have heard about...?" "What are the gaps between...?"

CHALK AND TALK METHOD

A formal teaching process, in which the blackboard and the voice of the teacher are the focal points, as opposed to more informal practices focused on children. It is normally done on a whiteboard with chalk, rough crayon, or pastel, or with dry-erase markers. The teaching method of chalk talk focuses on the blackboard and the voice of the lecturer and even the movements-the physical activities, to be exact.

LECTURING

The lecture method is only one of many methods of teaching, although it is generally considered the primary one in schools. The lecture method is convenient and cost-efficient for the institution, especially with larger classroom sizes. This is why for most college classes, lecturing is the norm because there can be several hundred students in the classroom at once; lecturing enables professors to approach the most individuals at once, in the most general way, while still transmitting, according to the lesson plan, the information they feel is most important. Although the lecture technique offers the instructor or teacher opportunities to introduce students to information that is unpublished or not readily accessible, the students play a passive role that can impede learning. While this approach encourages large-scale communication, the lecturer must make continuous and deliberate attempts to become aware of student issues and engage the students to provide verbal input.

CONCLUSION

These methods are very useful for students to understanding subject content. It creates interest among students and they enjoy teaching. One can select the teaching method as per the content of subject.

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INNOVATIVE TEACHING LEARNING METHOD IN PHYSICS-ENGAGED PEDAGOGY

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ABSTRACT

It was observed that students are diverting from choosing physics as their principal subject at graduation level. Physics is the base of all fundamental science so it is necessary to be studied. In order to increase interest in physics among students it is necessary to mold strategies in proper orientations. When we are thinking about innovative teaching learning methods of physics, drawbacks of traditional teaching systems should be taken under consideration. To overcome these drawbacks, we have to involve innovative teaching methods in our classroom study. It is also observed that, through different classroom activities we can create interest in studying physics and enjoying physics. So, there is a need to focus on innovative classroom activities rather than just using chalk & talk method and lecture method. This research aims to study which Innovative method teaching learning process is more useful and adapted by students. It also helps to find out solutions to improve the self-study skills of students. This article is an analysis of innovative teaching learning methods of physics used in my classroom and the student's attitude towards different teaching learning methods in physics.

Keywords*: Innovative, teaching learning methods, e-learning, classroom activities, physics, Engaged Pedagogy*

1. INTRODUCTION

Traditional teaching methods are used while delivering lectures in most of the science classrooms especially for physics. Mostly standing in front of students and by using chalk & talk methods lectures are delivered. In this method of teaching physics, students are passive participants & just information is transmitted from subject teacher to the students. Recent studies show that to develop critical thinking, soft skills & to gain knowledge of a particular subject, traditional teaching methods are inadequate & ineffective. According to researcher opinion, traditional lecture methods are just an illusion of the teaching learning process both for teacher and students. Engaged pedagogy can be one of the best approaches which can help students to develop critical thinking and soft skills as well as give support to study physics more effectively and efficiently. Engaged pedagogy is explored in this chapter as a novel interactive teaching tool and a vector of performance in teaching and learning physics. Through several classroom activities this engaged pedagogy can be implemented effectively. In addition, the influence of technology is presented on the proposed pathway of teaching.

One of the strategic priorities of higher education institutions at present is to enhance the consistency and success of the teaching and learning experience of the students. In view of this, we should emphasize that the most productive teaching approach is interactive-engagement pedagogy in general and with regard to the discipline of physics in particular. As a result, students may be more actively engaged in this process. It could possible to maximize the learning process and thus their overall success, learning and skills. The goal of this paper is to explore the potential of engaged pedagogy in teaching and learning physics as a vector of success. It will also discuss the Learning Technology instruments involved in the planned teaching pathway.

2. ENGAGED PEDAGOGY

In 1994, Bell Hooks, an African American social activist, invented the word 'engaged pedagogy'**.** Engaged pedagogy is a form of teaching that postulates that Lectures can never be dull, with learners actively engaged in the learning process, but a source of curiosity and excitement. In other words, engaged pedagogy is a two-way interactive flow of knowledge where both teachers and students are engaged with learning content passionately. Engaged pedagogy tries to end apathy, disinterest and disinterest during lessons, boredom empowers students to take responsibility for their teaching. Successful and engaged teaching methods are those that understand the significance of creating real-world ties between the subject material taught and the experiences of the students by 'engaged' teaching and working to enable the student to become social participants of reflexive and analytical thought.

3. METHODOLOGY

This study is based on primary data. The data have been collected from students, who are currently pursuing their undergraduate degrees in Sarhad College of Arts, Commerce & Science Katraj, Pune. The online questionnaire through Google Forms has been prepared for collecting data. Among the students, only 61 samples are scrutinized based on the stratified sampling method. The period of study is the month of Feb 2021.

Under Engaged Pedagogy we can use different innovative teaching learning methods for physics like participative learning, Creative learning, experiential learning, computational learning & use of ICT tools.

4. ANALYSIS

4.1 Innovative teaching methods for physics under engaged pedagogy method.

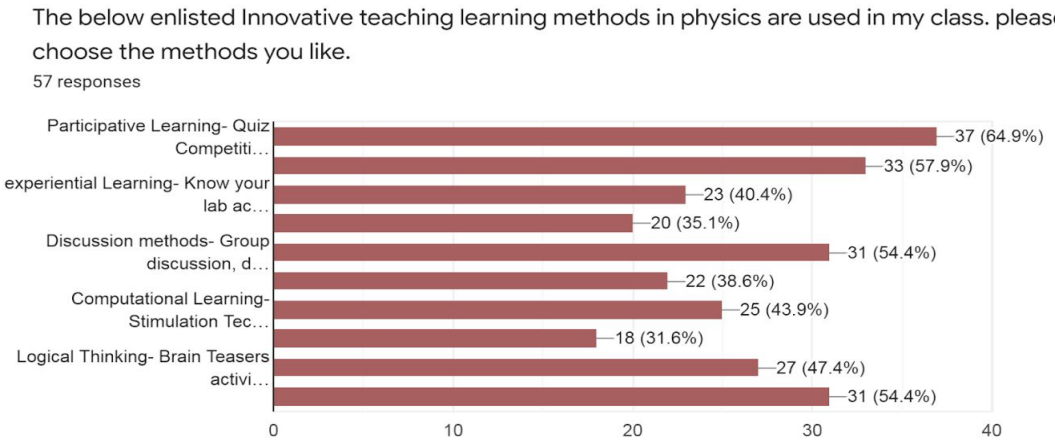


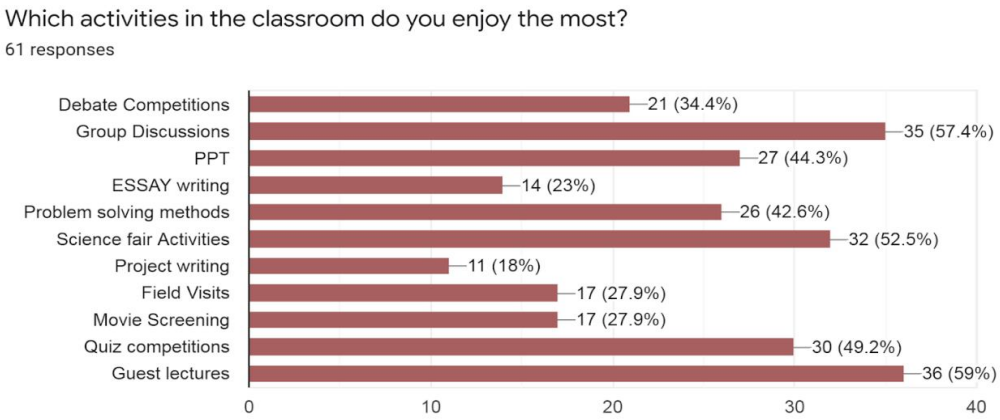
Table 1 likeliness of students towards different teaching learning methods

Innovative Teaching Learning Methods	No of students	percentage
Participative Learning	37	64.9%
Creative Learning	33	57.9%
experiential Learning	23	40.4%

Lab Skills	20	35.1%
Discussion methods	31	54.4%
Demonstration	22	38.6%
Computational Learning	25	43.9%
Learning Through Argumentation	18	31.6%
Logical Thinking	27	47.4%
ICT methods	31	54.4%

Among 57 respondents, around 64 % students like participative learning method, 57% response received for creative learning and 54% response for discussion method.

4.2 Classroom Activities conducted under Engaged Pedagogy

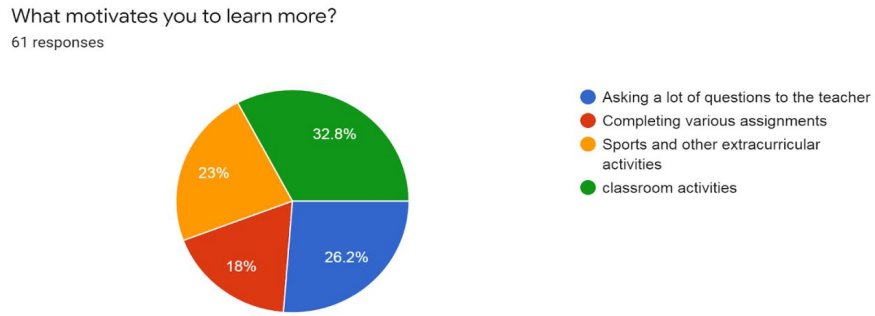


To keep students engaged and to encourage students to enjoy classroom learning activities like debate competition, group discussion, PowerPoint presentations, seminars, Essay writing competition, problem solving sessions, science fair, project writings, model making, e-posters, poster competition, movie screening, Field visit, quiz competition and guest lecturers conducted. Students enjoy guest lectures and group discussion more compared to other activities. Science fair activities- Model Competition, Rangoli Competition and poster making competition these activities are also enjoyed by students. Very less number of students shows interest towards project / research paper writing.

4.3 Motivation for students to Learn More

Learning how to inspire the students is one of the most challenging aspects of being a teacher. It is one of the most important as well. Students who are not encouraged cannot learn successfully. They're not going to keep data, they're not going to engage and some of them might even become disruptive. For a variety of reasons, a student may be unmotivated: they may feel that they have little interest in the subject, find the methods of the instructor un-engaging or distracted by external powers. It might also come to light that it is challenging for a student who appears unmotivated to learn and needs special care.

Although it can be a challenging job to inspire students, the rewards are more than worth it. Students who are inspired are more willing to learn and participate. Simply put, it is fun for teachers and students alike to teach a class full of motivated students. Some students are self-motivated, with a love of learning that is normal. But even with students without this innate motivation, a great teacher can be a great teacher.



There are several methods through which we can motivate students to learn and enjoy learning like asking questions while teaching or motivate students to ask different questions, ask them to complete assignments, by conducting sports and extracurricular activities and also by conducting various classroom activities. From the above survey we can clearly see that more number of students become motivated for learning by classroom activities conducted by teachers. Students also get motivated by asking doubts to the teacher.

4.4 Feedback of students about doubt cleared by their teacher or not.

Students sometimes skip a section or don't understand anything during the class while the teacher teaches. In such situations, it is very strongly recommended that students should ask their questions and clarify all the questions, otherwise that they will not be able to learn properly what will be detrimental during the examinations and also affect their overall knowledge.

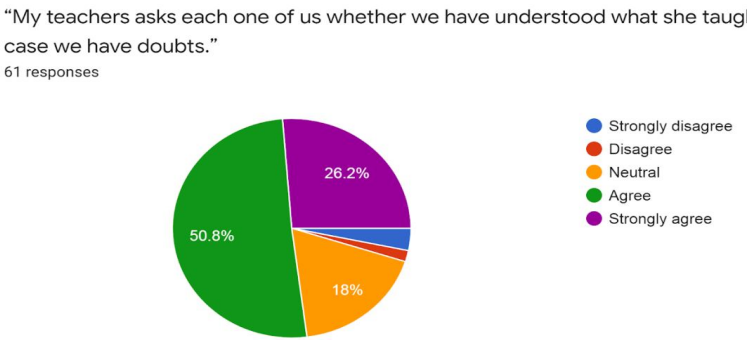


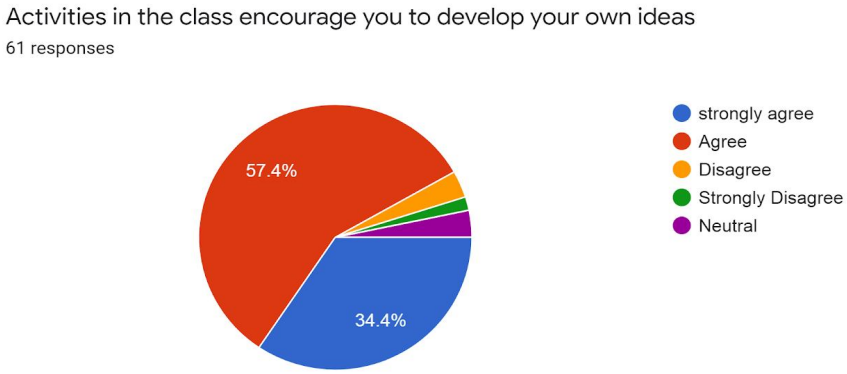
Table 2 : Feedback from students

Classification	Respondents	Percentage
Strongly Agree	16	26.2%
Agree	31	50.8%
Neutral	11	18 %
Disagree	1	1.6%
Strongly Disagree	2	3.3%

The most significant characteristic of the classroom is the contact between teachers and learners. Questions are important because they allow students to learn basic skills or a deeper understanding to solve problems, or to engage in higher-order thought such as assessment. Of

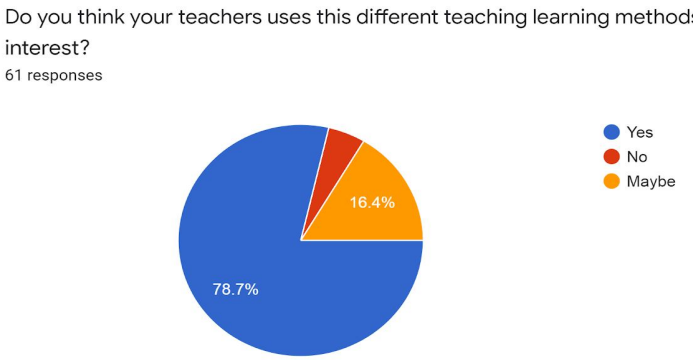
course, students as well as teachers can ask questions: they are important instruments for both teaching and learning. Questioning is a vital skill for teachers, and everyone should learn to use it well. Similarly, it is also possible to learn ways of helping students build their own capacity to raise and formulate questions. An significant learning skill that students need to be taught is raising questions and finding the right question to ask. From the above survey most of the students agreed with this statement that "My teachers ask each one of us whether we have understood what she taught and helps us in case we have doubts."

4.5 Classroom activities help students to improve their own ideas:



After listening to the theoretical component presented by the teacher, classroom activities are activities performed by students inside the classroom as part of implementing or doing the practical part of the lesson. In addition to helping students navigate the relationship of "input" and "output" during their speaking process, a successful design of classroom activities could also mobilize the interaction within the classroom between teachers and students. This style, based on the task-based teaching method, is based on the correct choice of teaching material and appropriate arrangements for classroom assignments, and with a variety of classroom activities, to stimulate the interest of the students and successfully complete the speech process in the classroom of the oral course. It is useful for both students and instructors to accomplish the teaching mission satisfactorily. From the above survey we can see that most of the students are agreed that classroom activities encourage them to develop their own ideas.

4.6 Different Teaching Learning Methods increases subject interest among students:



This can be a real challenge to get your students interested in a topic. There are so many factors that can impact their dedication. Lack of interest can be triggered by trouble focusing, family issues, emotional problems, disabilities in learning, and many other variables. Having said that, you still have to do your best as a teacher to try to get them to learn at least the fundamentals of any subject. You will have to be imaginative here and try one or more of the following ways to

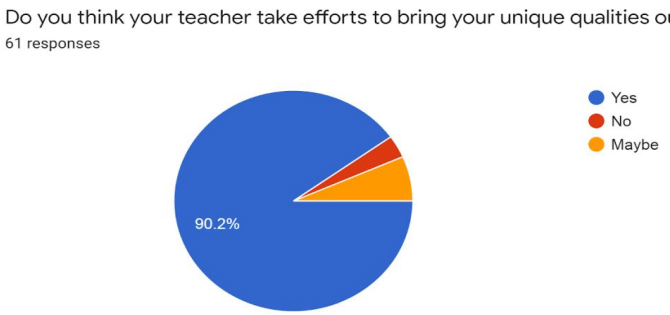
get their interest and attention. For this instead of using traditional chalk and talk methods or lecture methods it is better for the teacher to teach by using different teaching methods.

Table 3 Different Teaching Learning Methods increases subject interest

Classification	Respondent	Percentage
Yes	48	78.7
No	3	4.9
Maybe	10	16.4
Total	61	100

Among 61 respondents, around 78.7 percent of students have reported their subject interest increased because of different teaching learning methods. Around 16.4 percent of them were opined in somewhat they developed interest towards learning through different teaching learning methods.

4.7 Students agreed that Teacher takes efforts to bring out unique qualities of them:



At university level, we hope that students can provide their own motivation and discipline and bring their own cognitive abilities, which have already been developed, to the subject. Nevertheless, in the student learning process, the teacher also has a critical and challenging role to play by providing a framework in which the motivation and capacity of students to learn will function most effectively. Teachers should identify the unique quality of an individual student and try to polish it.

Table 4 Students agreed that Teacher takes efforts to bring out unique qualities of them

Classification	Respondent	Percentage
Yes	55	90.2
No	2	3.2
Maybe	4	6.6
Total	61	100

Among 61 respondents, around 90.2 percent of students have reported their agreement with teachers takes effort to bring out the unique quality of each and every student and polish it.

4.8 Improvement of Student's Soft Skill through different teaching learning methods

In a good career and during social interactions in society, appropriate soft skills play an important role. Employers who recruit new graduates are often highly sought after for these skills. It is important to develop the soft skills of students.

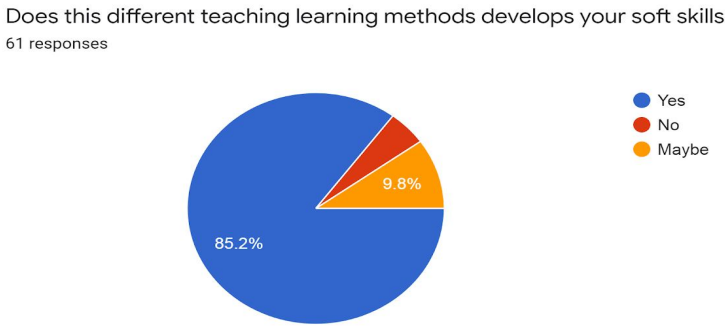
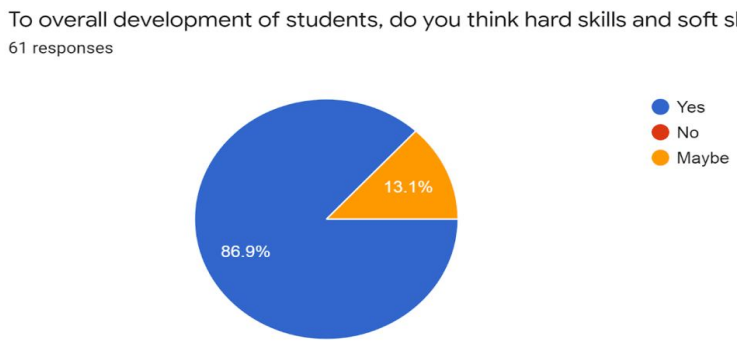


Table 5 Improvement of Student's Soft Skill through different teaching learning methods

Classification	Respondent	Percentage
Yes	52	85.2
No	3	4.9
Maybe	6	9.8
Total	61	100

Among 61 respondents, around 85.2 percent of students think that there is improvement in soft skills of them due to different teaching learning methods used by their teachers.

4.9 Students point of view regarding development of their soft skills and hard skills



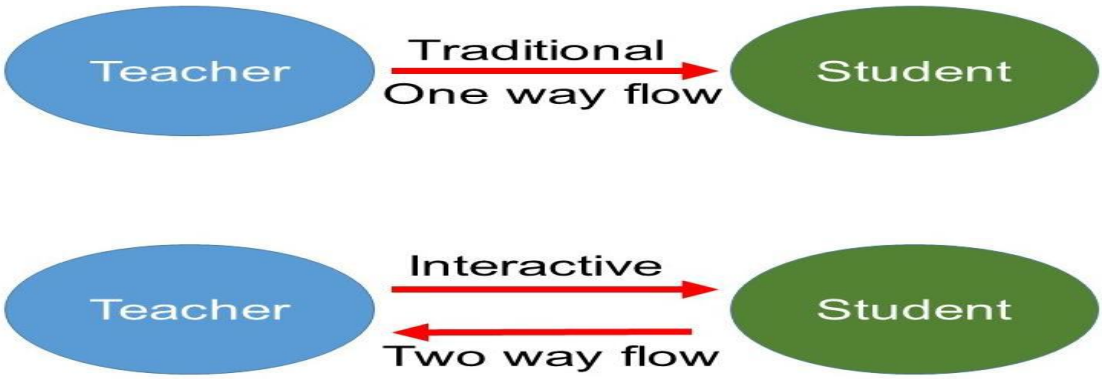
Classification	Respondent	Percentage
Yes	53	86.9
No	0	0.0

Maybe	8	13.1
Total	61	100

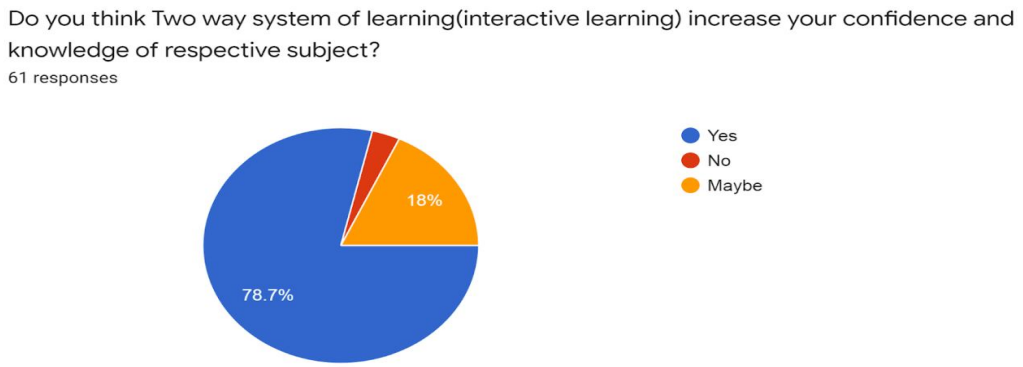
Among 61 respondents, around 86.9 percent of students think that both soft skills and hard skills are equally important for their overall development.

4.10 Importance of Two Way Teaching Learning process:

Recent studies have shown that conventional stand-and-deliver lectures with minimal student interaction are not only dull and difficult to follow, but often inefficient since they do not help students improve their understanding of concepts or basic processes. More precisely, as shown in the figure, information is conveyed unilaterally from the teacher to the recipient/student in a typical lecture.



Additionally, the students have only a passive role in this lecture style and the teachers overwhelm the students with knowledge without any input from them. An alternative approach to the conventional one, called Active learning, was proposed to help students study physics more effectively as well as to improve analytical and quantitative thinking skills.



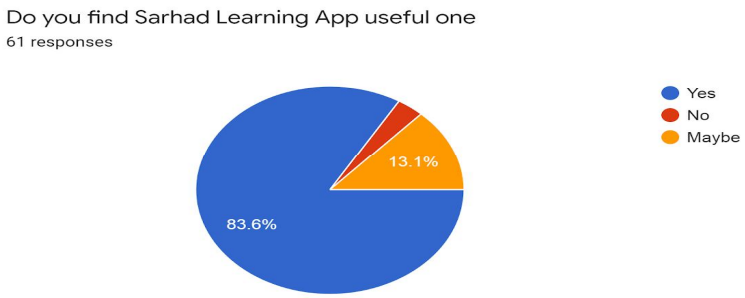
Classification	Respondent	Percentage
Yes	48	78.7
No	2	3.3

Maybe	11	18
Total	61	100

Among 61 respondents, around 78.7 percent of students think that a two way teaching learning method is important and effective for learning.

4.11 Usefulness of Sarhad Learning App

Sarhad Learning App was created by Sarhad College of Arts Commerce and Science Katraj Pune, in order to stay connected with students even in this pandemic situation. Through this App students can learn from anywhere anytime. Every teacher has created their own subject's video and these videos are made available to the students.



Classification	Respondent	Percentage
Yes	51	85
No	3	5
Maybe	6	10
Total	61	100

Among 61 respondents, around 85 percent of students find Sarhad Learning App a useful one for learning.

5. CONCLUSION

The benefits of engaged pedagogy as a student-centered teaching approach have been explored in this paper. Primary Data is collected from Survey and secondary data is collected from various journal and research papers. In particular, it has involved a range of methods appropriate for higher education large-scale community teaching, such as the Interactive Lecture, Interactive Lecture, Presentations, Just-in-time Teaching, Classroom Interaction Technology, Socratic Questioning, and Cooperative Learning. Students enjoy participative learning and Creative learning more. Students like to attend Guest lectures. They find a two way teaching learning method this is the best way to interact with teachers and clear their doubts regarding the subject. Students believe that both soft skills and hard skills are equally important and various classroom activities are useful for their overall development.

These teaching techniques have been suggested to help the interaction of university students with physics more effectively than teacher-centered approaches, such as conventional lectures. The paper also highlighted the role of technology as a forum for encouraging Active Learning.

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INNOVATIVE TEACHING IN MACHINE LEARNING

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ABSTRACT
Machine learning is a subset of artificial intelligence (AI) that allows computers or teaching equipment to learn and make intelligent decisions from all previous data. The architecture for machine learning involves gathering and storing a rich collection of information and turning it into a standardized knowledge base for various uses in different fields. By using machine learning in the field of education, teachers can save time in their non-classroom activities. Teachers can use virtual assistants, who work remotely from home for their students. This form of assistance helps to boost the learning environment of students and can promote progression and academic achievement. In the context of spreading education, machine learning facilitates personalized learning. Advances in AI allow teachers to gain a deeper understanding of how learning is changing for their students. This helps teachers to develop a standardized program that fits the learners' unique needs. When working in the context of education, AI may advocate intelligence moderation. Through this platform, information interpretation by human tutors and moderators is made possible.

***Keywords**: Machine Learning, Virtual assistant Education Sector*

INTRODUCTION
Technology is currently everywhere, including in the education field, where it has proved to be of great benefit to students' learning outcomes. Training is no longer just text instruction or asking the learner to memorize manuscripts. The instructional process has become an operation with observable objectives and outcomes, both within and outside the classroom. The inputs and outputs of the learning process have turned out to be a dynamic aspect of the techniques of education over time. In addition, these activities have become a critical part of expanding the progress of the learning system elements, updating the curriculum rudiments, and making them both more effective and resourceful. These components are used in the planning, execution, assessment, monitoring and improvement phase.

OBJECTIVE OF THE STUDY
1. The modern frontier for higher education has been machine learning. As one of the most important emerging technologies, machine learning plays the main rules in intelligent and human artificial interaction.
2. It is a modern infrastructure for everyone. Machine learning thus allows computers, without being programmed to do so, to find secret insights. In addition, as a strong indicator, machine learning functions.

RESEARCH METHODOLOGY
The technology of machine learning is used as the theory of educational practices. There are numerous ways of using machine learning technology in education, such as offering various learning opportunities so that a learner can explore what suits him/her best, but in a way that takes into account all individual differences between students. In analyzing a lesson that was difficult to understand, machine learning can also be used.

1. In education, machine learning operates in accordance with the needs of students, and at a time and place that suits them best.

2. In education, virtual assistance plays a key role and is a strong medium for the use of machine learning. In a conversation with students a virtual assistant will interact. Conversational agents that support students by using an application or website are involved in this interaction.
3. With the student having to enter text, the procedure works very quickly. On the other hand, the agents perform the task and determine the appropriate response to the feedback before providing an easy response that the student can easily understand.
4. Both machine learning and virtual assistants are used to promote deeper learning and provide users with quick and reliable data in order to understand patterns and human interaction. A new education system that is driven by virtual assistance is proposed in this chapter. For students, it offers personalized study. The suggested system enables teachers to track the success of their students by their progress.
5. The proposed system enables teachers at any time to track the progress of their students through their learning activities. In order to develop their experience, this is the best approach to educating students. The system also helps teachers save time that is usually spent planning classes, creating tests, updating documents, creating documents, and conducting light-specific research.
6. The proposed structure promotes the leverage of the most effective technology for both students and teachers to increase the quality of education. Another benefit associated with this machine learning and virtual assistant platform is that it is less susceptible to mistakes that normally obstruct human activities.
7. If an error happens, the mechanism allows the problem to be quickly solved and the error to be resolved properly.

- **MACHINE LEARNING**

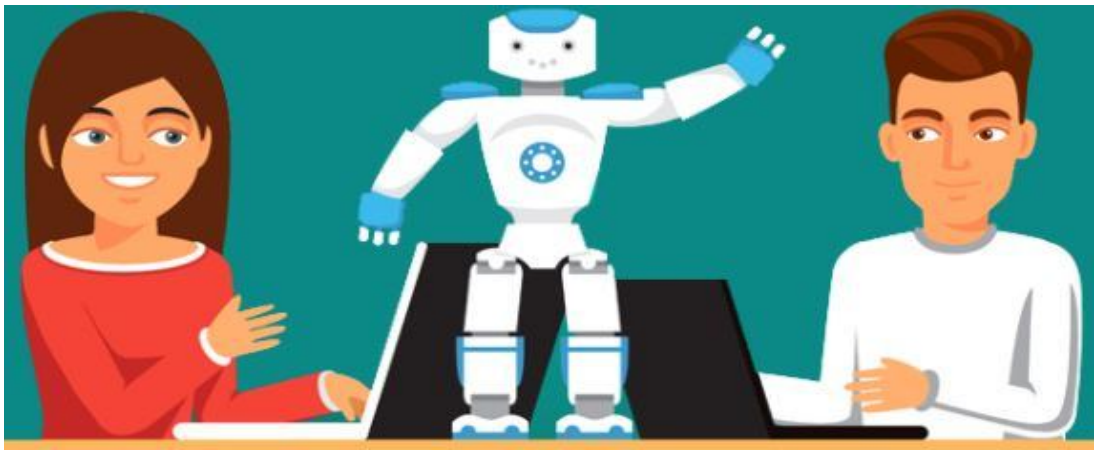
Machine learning is an artificial intelligence (AI) technology which gives systems the ability to automatically learn and improve from experience without being explicitly programmed. The focus of machine learning is on designing computer programs that can access and use data to learn for themselves.

In order to search for trends in data and make informed choices in the future based on the examples we have, the learning process starts with observations or data, such as examples, direct experience, or guidance. The primary objective is to allow computers to learn automatically and change behavior accordingly without human involvement or assistance.

The key difference with machine learning is that the aim is to understand the nature of the data much like mathematical models, fitting theoretical distributions to the well-understood data. There is a hypothesis behind the model that is mathematically proven with statistical simulations, but this includes data to satisfy some strong assumptions as well.

Even if we don't have a theory of what the structure looks like, machine learning has advanced based on the ability to use machines to evaluate data for structure. A validation error on new data is a test for a machine learning model, not a theoretical test that confirms a null hypothesis. Since machine learning also uses an iterative strategy to learn from data, it is simple to automate learning. Until a robust pattern is found, passes are run through the data.

- **IMPORTANCE OF MACHINE LEARNING**



Most of you, I hope, would agree with this. Every industrial activity that can be performed without the use of machine learning or artificial intelligence is very difficult to think of. Due to its wide variety of applications and its remarkable ability to adapt and provide solutions easily, effectively and rapidly to complex problems, machine learning is significant.

Let me go ahead and list some instances where machine learning is applied to better understand the value of machine learning: online recommendation engines from Facebook, Netflix, Amazon, Apple's Siri reacting to your questions, facial recognition. Without using machine learning, it is very difficult for you to think of performing the above-mentioned tasks.

Education and research currently remains primarily focused on feeding knowledge to students and hoping it is preserved. Accordingly, the intelligence of a student is measured by measuring their capacity to remember previously taught knowledge. The concern is that in real-life cases, this model avoids analyzing how well the students grasp the data and how they apply it. Over the years, this model has proved to be harmful. More schools and educational centers have begun to understand how the use of machine learning can make work simpler and more effective, and have begun to implement technology at a growing pace. Machine learning, indeed, can handle all sorts of students.

Machine learning impacts the teaching industry tremendously. New innovations are being implemented by the teaching industry to foresee the future of the education system. The future

design of the educational system is expected by machine learning through the adaptation of modern advanced intelligent technologies. This thesis investigates the use of machine learning for further progress in teaching and learning.

In order to further develop the learning environment in higher education, this dissertation discusses the use of Machine Learning in teaching and learning. In tailored teaching and learning environments, we investigate the application of machine learning and explore further avenues for study. Student history, individual student aptitude, learning pace and reaction of each student are taken into account through personalized teaching and learning.

After real-time analysis of the data, this personalized teaching and learning approach provides teacher feedback. In this way, an instructor can quickly identify and take corrective action for student attention. This would increase the interest of students and thus the overall performance. Via real-time feedback, individual student concepts and goals can easily be monitored with the aid of machine learning. Curriculum, subjects and methods can be further expanded based on the feedback. In simple terms, machine learning makes the process automated and analyzes individual student data for the decision-making process. Overall, the assessment process is made more streamlined, accurate and unbiased with the assistance of machine learning. In the near future, machine learning will be more powerful and produce even better performance.

MACHINE LEARNING IS BOUND TO CREATE THE FOLLOWING BENEFITS IN THE FUTURE:

1. Tailored and individualized learning -

Machine learning is versatile enough to appeal to all learners, regardless of their speed of learning. Machine learning helps the learner to step forward only after they have truly grasped the previous content by using algorithms that learn how the student absorbs knowledge. This system ensures that no pupil is neglected or left behind. Even if they are the only person in the class who has not yet understood the material, this is valid. The machine learning system also helps teachers to track students individually and assist them in certain areas where they are weak. This contrast with the conventional approach of education, which focuses on one-size-fits-all management in which everyone is taught the same way in the classroom.

2. Content analytics

It refers to a method of machine learning in which teachers use computers to guide students. The devices are used to evaluate the knowledge that teachers use to teach and to assess if the material quality meets the requirements that apply. The devices are often used to help assess whether the material taught to the students suits each student's intellectual capacity. When students are taught according to their individual needs, their success in learning and comprehension is improved.

3. Grading for

Machine learning systems are used to decrease the time taken for student work to be graded. Furthermore, computers are used to improve the grading system's performance and transparency. The method still requires teachers to carry out the greater portion of the grading. Machines, however, help in analyzing student knowledge, such as detecting plagiarism or cheating.

4. Standardizing complicated projects

Teachers expend a considerable amount of time on routine and boring activities in the conventional method of learning, such as taking part in class or collecting class assignments. To automate these tasks and minimize the time or need for teachers to do them, computers can be

used. Teachers would then have more time to spend on more critical things, such as ensuring that their students understand the learning material completely.

5. Progress of Students

With the use of computers, teachers can personally track each student at a personal level and measure their learning progress. Machines may also provide students with additional learning patterns, allowing teachers to decide the best ways to teach students.

Through the use of digital learning methods, there is the possibility of gathering a broad range of data on the learner's actions, especially in learning activities. The metrics gathered consist of variables such as completion time, video views, tasks for community discussion and test results. Experts argue that the algorithms can find a link with their learning success with the particular actions displayed by students.

Recommended learning-oriented systems have the potential to help learners better recognize the relevant material in the context of human learning.

The growth of AI technology has allowed machine learning in education to gain a tremendous amount of support. In particular, machine learning should be praised for making AI a possible and fruitful educational endeavor. Machine learning has combined and exploited the aspects of mathematical algorithms in achieving this result.

The use of machine learning in educational technology-related instruments has become more critical in its overall applications. Experts also built a real-time platform capable of giving learners instant feedback. The efficiency and effectiveness of online-based tutors have been harnessed by the same network. In reality, almost all the progress taking place on the Internet has been attributed to the site.

The new platforms are so advanced that they are able to detect and monitor the student's reaction to the concepts being taught. It is understood that this method eliminates the misunderstanding that is typically encountered during the learning process. The ability of these platforms to provide tutors with early notice helps them to prevent errors that may otherwise have been made during the learning process.

The idea of audience tutoring has boosted the acceptance of machine learning technology. The aim of audience tutoring is to provide assistance from private tutors and, in some instances, classmates who fill gaps in understanding by supplementing the material learned in class. The algorithm for machine learning works by making computers use software programs to help the machine evaluate accurate results. The machines will receive data, analyze it and then generate an output that is within an appropriate range by using algorithms.

Machine learning algorithms are classified into two main groups: algorithms that are **supervised** and algorithms that are **unsupervised.** People input information into the machine along with the necessary results for supervised algorithms. Through this, when a similar command is entered, the computer will learn what is required of it. The computers are not supplied with the result that one needs for unsupervised learning.

- **THE AUTOMATED ASSISTANCE SYSTEM DESIGN**

Since students have different learning styles, a variety of support is required to help improve the level of learning success. In order to allow the virtual assistant to interact with the students and teachers, various machine learning algorithms and techniques, such as decision-making algorithms and techniques, can be implemented.

For virtual assistants, there are two main elements, one for students and another for instructors. Students may respond to questions from one or more virtual assistants. The student is then provided with one or more supported links related to the specified course. Speech, audio data, video display or text information may be the supported links. Exam preparation and remaining test dates are kinds of virtual assistants that are offered to learners. The suggested scheme also allows students to handle their project of teamwork. A student is given feedback about his progress after the session with the method.

The scheme is also capable of creating presentations for individual learners. In fact, different students have different learning abilities; the system will therefore calculate a favorable learning style for each student. Via input on how each student performed in the sessions, the instructor records each student's progress. This encourages suitable grading. In addition, by providing additional reference materials for a subject, the virtual assistant can point out areas of the course that need to be further explored to improve learning. The instructor is also able to recognize which students need additional assistance using the input given by the system.

The proposed architecture is a secure website for virtual assistants that not only enables teachers and students to perform their duties in a shorter period, but also enables them to organize their work.

- **PREREQUISITES FOR MACHINE LEARNING**

In order to succeed in this area, a few criteria should be met if you are interested in learning more about machine learning. Such specifications include:

Basic programming language skills, such as Python or R.

Good statistical and probability information

Linear algebra and calculus comprehension

To find variations and trends in a given dataset, data modeling

- **TECHNICAL IMPLEMENTATION**

The virtual assistant system's underlying technical implementation begins with The design of use cases for the commodity. To move forward with the implementation of the proposed website, the identification of virtual assistants and the underlying technologies is important. The following technical criteria have been established for constructing the virtual assistant website:

1. Bit Voicer : Speech recognition.
2. Python 2.7 Coding Language
3. TensorFlow, Jupiter Notebook, Keras and many more interfaces are preferred for coding Python

- **CONCLUSION**

In different areas, machine learning with AI has opened up enormous possibilities. This is particularly the case with regard to the education sector and fields related to education. This means that future learning experiences are likely to be highly customized, with the opportunity to assist learners in the most rewarding way to achieve their fullest potential.

In different areas of concern for educational innovations, there will be a steady adoption of machine learning. Its effect will not be immediately evident or relevant to the end user in the initial stages. Despite this, teachers have begun to see how activities can be streamlined and performed more efficiently by employing and integrating machine learning technology. In both classroom and non-classroom-related operations, the developments made in implementing

machine learning in the education sector have substantially saved teachers' time. This unparalleled advantage has been embraced by stakeholders, as it makes learning simpler and more appealing.

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INNOVATIVE TEACHING METHODS: SPECIAL REFERENCE TO BBA-CA

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ABSTRACT
New technologies and approaches are updated in teaching to bring about improvements in the current structure to achieve prearranged educational goals.

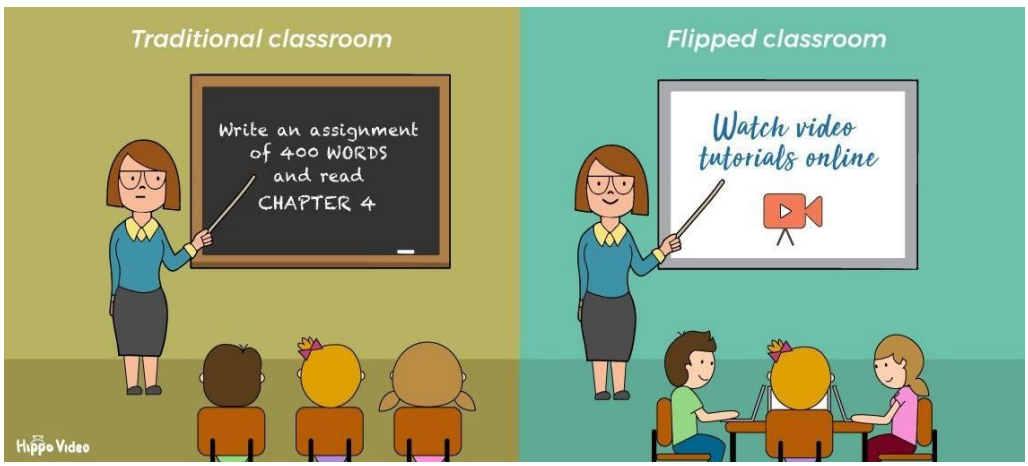
The only source of instruction was earlier books, differentiating learning and individualized teaching. The teaching learning process can be made more involved and interactive by

Information and Communication Technology (ICT).

Keywords: *Information and Communication Technology, Teaching, Learning, Innovative*

INTRODUCTION—
It has been confirmed today by research studies. There are several teaching approaches that have been used that are useful in education. Training is a production to simplify the learning of behaviours, principles of skills and knowledge. These two major components of teaching essentially involve sending and receiving information. Basically, a teacher tries his best to always give his students knowledge and skills in a way that their students can understand them. By giving education, students are made literate, but also to make them competent, innovative, to reach the workforce, and to think on their own. A student's progress depends on the teacher and the creative teaching techniques they implement. Innovative approaches used in educational institutions have the ability not only to enhance education, but also to inspire people, strengthen governance and promote efforts to meet the country's human development target.

1. Boards Teaching
Smart boards are an efficient way to bring life to the classroom while allowing students to experience a deeper level of involvement and understanding. By making the material of the course interactive and visual, this is achieved. As teachers use immersive multimedia content, the smart boards turn the teaching experience into an interactive and collaborative experience to help communicate the subject more effectively to the students and make it a visual, engaging experience.



Smart Boards Teaching

Although many may doubt whether giving students the responsibility for learning would impact the world, teachers around the world have shown that they immerse themselves more in the subject when placed in charge of their own learning, taking more interest and learning better. This teaching approach is one of the best ways to lay the foundations for independent learning.

2. Teaching by Cloud Computing

Bringing technology into the classroom makes it possible for educators to experiment with new teaching methods. Cloud learning is one such platform for teachers to save valuable tools in the classroom, such as lesson plans, notes, audio lessons, videos, and classroom cloud activity details.

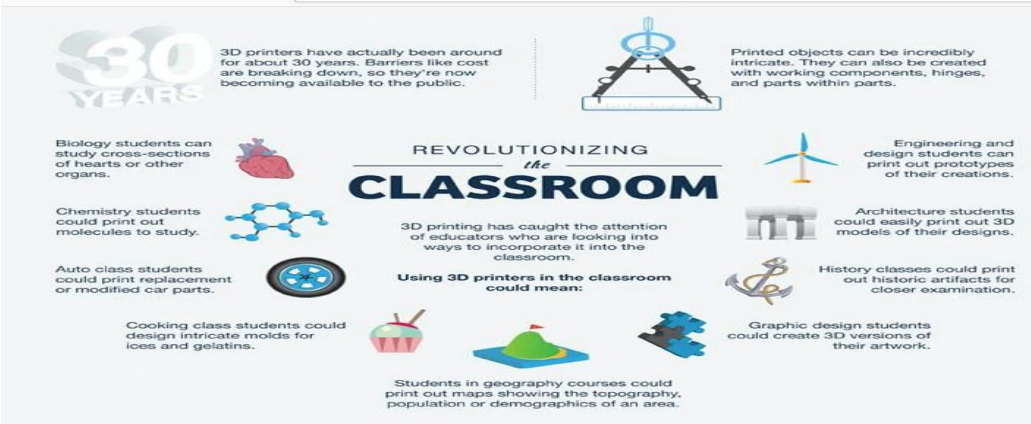
The students can then do this from the comfort of their homes, whenever appropriate, with the click of a button, taking the classroom back to the students. It also ensures that students who have missed class remain posted at all times, either for sickness or for some other cause. This removes the need to lug around heavy textbooks and encourages learners to learn at a time, place and speed that they are happy with.

Teaching by Cloud Computing

3. Teaching by 3D technology for printing

Teachers looking for new ways of teaching may also look at 3D printing as a way of teaching. This approach is rapidly gaining worldwide recognition, particularly in higher educational institutions where 3D printers are used to build prototypes and make it easy to understand complex concepts.

In lower level classrooms, teachers can use 3D printers to teach content previously taught through textbooks, helping students gain a better understanding of the definition, especially STEM subjects.



Teaching by 3D technology for printing

4. Technology and novel methods of teaching

The use of technology in the classroom helps to involve the students with various kinds of stimuli and provides an atmosphere of activity-based learning. It makes the classroom material more interesting and makes it enjoyable to learn. Technology provides teachers an infinite range of services that, depending on the students' needs, they can tap into. Although this blog lists a few such tools, turning to the new technology would bring a large number of updated solutions for a teacher searching for successful teaching methods in a classroom.

Technology and novel methods of teaching

5. Teaching by means of virtual reality

The technology of Virtual Reality includes helping students learn through experiences with a 3D environment. For example, instead of taking students through a boring history lesson, teachers may explore ancient civilizations using 3D technology, travel to distant countries for a geography class, or even take a trip to outer space during a science class. The technology of Virtual Reality provides students a valuable opportunity to learn in an immersive way that has a lasting effect on their minds. It makes learning fun and helps students to retain the content, all the important points when contemplating successful teaching methods in a classroom for a longer period of time.

Teaching by means of virtual reality

6. Teaching by way of cooperation

Another creative teaching approach includes facilitating student teamwork with different projects. We are living in a globalized world today, and teamwork is an important life skill that is essential for all professions and businesses. By encouraging students to read, study and collaborate in groups, teachers may help cultivate this ability in the classroom.

By assigning community homework, for example, or encouraging students to work on plays, presentations and other reports together. Today, teamwork as a teaching method is gaining recognition as an effective teaching instrument where the role of guides, mentors, student supervisors is once again the responsibility of the student community that educators play. It also teaches learners empathy, negotiating capacity, teamwork, and problem-solving.

Teaching by way of cooperation

7. Over Teaching, Cross

While this method of teaching does not involve software, it is an enriching experience for both the student and the faculty. Here, in an informal setting, such as after lecture learning groups, or museum and exhibition tours, the learning takes place. The instructor should correlate the instructional material with the experiences the students have. By adding questions related to the subject, this teaching is further strengthened and deepened. Via field trip notes, photographic projects and other group assignments related to the trip, the learners will then contribute to the classroom discussions.

8. Incidental Learning

It is learning that is unplanned or accidental. When carrying out an operation that is obviously unrelated to what is learned, it can occur. Early studies on this subject dealt with how individuals learn at their workplaces in their everyday routines. Smart devices have been merged into theirs for many people

Everyday lives, providing many resources facilitated by technology for accidental learning.

Incidental learning is not led by a teacher, unlike conventional education, nor does it follow a structured curriculum, or contribute to formal certification.

Self-reflection can, however, be enabled, and this can be used to help students understand what would otherwise be isolated learning fragments as part of more cohesive and longer-term learning journeys.

9. Thinking Computationally

A strong approach to thought and problem solving is computational thinking.

It includes breaking down big problems into smaller ones (decomposition), realizing how these relate to issues that have been solved in the past (pattern recognition), putting aside unimportant information (abstraction), Identification and development of the steps required to find a solution (algorithms) and refinement of these steps (debugging).

10. Learning By Doing Science (with remote labs)

Remote lab systems can reduce barriers to participation by offering user-friendly Web interfaces, instructional resources, and professional development for teachers.

Access to remote laboratories would deepen the awareness of suitable opportunities for teachers and students by offering complementary hands-on investigations and direct-observation possibilities. Such experiences can also be brought into the college classroom with access to remote labs. For example, learners may use a high-quality, distant telescope to make observations of the night sky during daytime college science lessons.

11. Learning Embodied

In order to facilitate this, wearable sensors gathering personal physical and biological data, visual systems tracking motion, and mobile devices reacting to behaviours such as tilting and motion are included in the technology.

This approach can be used to analyze physical science aspects such as friction, acceleration, and force, Force, or to explore simulated conditions such as molecular structure. The process of physical activity offers a means for more general learning to involve learners in feeling while they learn. The development of a conscientious approach to learning and well-being can also be helped by being more aware of how one's body communicates with the environment.

12. Assessment of Stealth

Stealth evaluation borrows techniques from online role-playing games such as World of Warcraft, in which the framework constantly gathers information about the activities of players, drawing inferences about their goals and tactics to present new obstacles that are relevant.

This concept of incorporating evaluation into a virtual learning environment is now being applied to colleges, to subjects such as science and history, and to adult education. The argument is that stealth evaluation will assess facets of learning that are difficult to measure, such as perseverance, imagination, and strategic thinking. It can also gather information about learners' learning states and processes without asking them to pause and take an exam. Methods of stealth assessment will, in principle, provide teachers with continuous data on how each learner progresses.

CONCLUSION—

How well students achieve at college depends on factors and activities which teachers take for students such as how well teachers engage with their students, and the relationships colleges have with their students' families and whanau. The assessment of student achievement, or understanding what students know and can do, is fundamental to effective teaching and to students' learning. They will not be assured that they are fulfilling their students' learning

needs unless teachers know students well and are knowledgeable about their accomplishments.

In brief, students and teachers can only use evaluation knowledge to enhance learning if they have:

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PEDAGOGY OF TEACHING ENGLISH AT HIGHER EDUCATION WITH PRACTICING INNOVATIVE METHODS

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ABSTRACT
English Language or Literature is learnt for ability enhancement. Teaching is difficult and learning is being so complex as we are running in twenty first century. Teaching is an essential part of learning. We cannot depend just upon books and notebooks. Further we have to use different methods rather than traditional methods.

Keywords: Innovative Practices, Pedagogy, Digital Literacy.

INTRODUCTION:

One cannot separate teaching from learning as both are interlinked especially at higher education. When you change teaching, it changes learning as well. And learning gets automatically changed when you make changes in teaching. Our nation with the modern world is facing different challenges such as: Covid-19, Global Economic Crisis, Multidiversity, Natural Calamities, etc. With the time, there is changing scenario in New Education Policy which makes a pathway through the hindrance and brings the interdisciplinary approach in studies. The core aspect of learning is knowledge and wisdom. And about language and literature, it is communication, soft skills, huamn values and professional ethics.

OBJECTIVE:

The staple objective of this paper is to review innovative teaching and learning methods various aspects of language and literature at higher education.

METHODOLOGY:

The research study has been conducted with the aid of secondary sources of information as provided in the books, journals, newspapers and the websites.

DISCUSSION:

It is a great challenge for any teacher to capture each student's attention, and conveying ideas effectively enough to make possible aim of learning. Being a teacher, to cope with this challenge, one should implement innovative ideas that make the classroom experience much more learnable for your students. The use of innovative methods that will assist the teachers to reinvent your teaching methods and make the classes more interesting as well as interactive.

The Audio-Visual tools should be used to stimulate creativity. It can help to create visual exercises that will excite young minds and capture their interest while learning English. Teachers at college need to bring aspects of creativity into your subject. Teachers can think of ways to develop the students' creative ideas to know English language and literature. It can be encouraged students for different ideas by giving them the freedom to explore.

Audio-Visual materials are beneficial to supplement textbooks or reference books during your sessions. These can be models, filmstrips, movies, pictures, infographics or documentary. These aids will help their imagination thrive and better. Through these methods, it will not only develop their ability to listen but will also help them understand the concepts better. If teachers and students are tech-savvy, there are also a number of smart apps for learners that can be utilized to create catchy slideshows and presentations.

Technology plays a major part of language learning throughout the world at various levels. Innovations in Language Learning Technologies can create more independent learners who stay motivated and get the results they desire. The advantages of Language Learning Technologies are: Improvement in Academic Ability, Engagement, A Paradigm Shift in Teaching and Learning, Collaborative Learning Enhancement.

The level of skills that modern assessments attempt to evaluate is quite broad and reflect our current views on teaching and learning English. It may include assessing the students' capability: to participate in a pair work oral activity, to skim a text and quickly look for key information, to narrate a story, to follow instructions. to plan and organise an article.

Exploring real-world experiences into your instructions will make teaching moments fresh, and enrich classroom atmosphere to get learners involved in it.. Relating and demonstrating through real-life situations will make the material easy to comprehend and easy to learn. It will spark their interest and get the students excited to learn.

The sessions of brain-storming will be a great platform for students to voice their thoughts, ideas or information without having to worry about right or wrong. Besides this, teaching English through role-playing is a great way to make learners step out of their comfort zone and develop their interpersonal learners. This method comes in handy, especially when English faculties are teaching literature.

Story-narration is a fantabulous way to teach English which requires step-by-step memorization or visualization highly-conceptual ideas. English faculties can use a storyboard to create a live event picture. Activities which are visually stimulating will ensure that even complex ideas are easily put forward the students. You can also encourage the use of storyboards as a form of communication and let the students tell a story in pictures using their imagination.

Pair learning or group learning will promote dialogue and discussion among students to build multiple perspective study It is important to create collaborative learning environment in the classroom rather than competitive one. They actively think about various phenomenon around them and urge to explore them. By working in groups, students are able to reflect on their own thought process and shift to a higher level of cognitive study.

CONCLUSION:

In a nutshell, as learning is a complex and active process it needs to follow the three components of PPP model of teaching: Present-Practice-Produce. It should include Productive Vocabulary, Writing Skills, Reading Skills (Skimming and Scanning) Communicative Skills, Consciousness Raising, Thinking Skills, Higher Order Skills, Critical Pedagogy, etc. Thus, the above mentioned innovative methods can be applied in teaching and learning English which can imbibe and enhance communicative and soft skills for a bright future in students' life.

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AN ANALYSIS OF INNOVATIVE TEACHING METHODOLOGIES FOR HIGHER EDUCATION IN IT: A STUDY FOR IMPROVING TEACHING LEARNING PROCESS

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ABSTRACT

This paper will focus innovative teaching methodologies used for higher education in IT and its popularity for improving the teaching process. This paper covers detailed study of innovative teaching methodologies for higher education in IT. It also focuses on ICT used for teaching and learning process of higher education in IT. It also covers analysis of popular teaching methodologies and study of improving effectiveness of teaching learning process.

For this research primary as well as secondary data is used. Primary data collected by interview method through informal communication with teachers for higher education's and for secondary data literature reviewed from internet, books, blogs, university reports and other reports.

***Keywords**: Information technology (IT), Innovative teaching methods, Education*

INTRODUCTION

"The art of teaching is the art of assisting discovery" – Mark Van Doren

The revolution in teaching learning process, traditional teaching methods such as talk and chalk method, to online lectures. It is big transformation in education and very beneficial to student as well as teachers. With the rapid rise of information technologies and use of internet have also highest impact on teaching learning process. Number of advanced techniques is available on internet.

Education plays an important role for improving knowledge skills in every field. In 21st century information technologies are more popular in education sector. Now days, Student and teachers are more connected to each other through internet and they have access to more information from eBooks, online journals, websites, articles, blogs and reports. Now a day's teachers are trying to implementing new teaching methodologies for explaining concepts deeply to students.

This paper focuses on teaching methodologies used for higher education i.e. BE in IT, ME IT, BBA (CA), BSC (CS), MCA, MSC (CS) etc. Students are taking ug and pg degrees in information technologies. Students are already using internet so we have to wide scope to use new teaching technologies based on internet. The Pew Research Center research on teaching methodologies state that 92% of teachers believed that the ICT has a major impact on teaching for accessing content, resources, and materials.

Innovations in teaching methods are the need of improving teaching learning process in higher education in IT.

Innovative teaching methods used for higher education in IT are,

1. Improved Classroom Technology
2. Use Educational Videos
3. Interactive Learning
4. Project based learning

5. Spaced Learning Works
6. Use of Artificial Intelligence (AI)
7. Teaching through Smart Boards
8. Teaching through 3D printing technology
9. Use of QR codes
10. Use of Logical thinking
11. Use of Logical thinking
12. Social media in to education
13. Use of teaching applications

1. Improved Classroom Technology

Now day's classrooms look much different than 19th century's classrooms. Today classroom is full of electronic devices that are computers, tablets, digital cameras, GPS devices and audio devices etc. A lot of technologies are available in latest classrooms, such programming languages software, power point presentation, video conferencing applications and online compilers. Which improves the learning experience of students. More advanced technology may include using video games to teach math and statistics. Currently online meeting application are available i.e. Skype, Google Meet, Zoom, Cisco WebEx, Microsoft Team etc. For explaining some point we have to invite guest speakers from anywhere around the world, or even multimedia by using these online meeting applications.

Different programming languages are included in UG and PG degrees of IT. Teachers are using different software for teaching programming languages like C, C++, Pythons, Java, PHP etc. Also for subject assignments submission, numbers of applications are used.

Fig. 1.1 Improved Classroom Technologies

2. Use Educational Videos

During the class it is found that the use of educational videos for explaining some points in study. It helps for improving the students engagement levels with study. It is helps for enhance

understanding of specific subject to students. Subject related videos keep students more motivated and it helps for increasing student's interest on subject. Visual representation can improve the understanding level of student. The link of videos during lectures has enhanced teaching learning process.

3. Interactive Learning

Interactive Learning is a technique that students actively participation in the learning process. Interactive learning has enhanced higher growth in the use of information technology and virtual communication, particularly by students. The greater the student interaction is the most challenging job for teachers. Interactive learning may include answering a question or solving a problem. For interactive learning we can make small groups of students and allocate small projects. For that students can discuss programming logic, ideas and ways to meet the challenge. You can review their work in classroom so we can achieve knowledge sharing. By the end of class, let each group share what they've learned with their peers. This learning method is closely connected with project based learning so we are focusing on project based learning in next point.

Fig. 1.2 Interactive Learning

4. Project based learning

Project based learning is mostly used methodology for higher education in IT. It is student centric paradigm. This learning methodology implies on practical based learning and it enhances logical thinking of students. Project based learning is more powerful method for higher education in IT. The research done in Autodesk Foundation, it shows that project-based learning is linked to considerable improvements in student examination scores, attendance and classroom engagement. By using project based learning method, teachers have the opportunity to build strong interaction with their students by acting as their hands-on learning catalyst.

Benefits of using Project based learning are as follows,

I. **Collaboration:** Relationships formed during collaboration is a huge part of project based learning. By using project based learning students learn how to work better in group. Students build positive relationships with teachers. It reinforces how great learning is. Students also learn how to generate relationships with community members when working on projects. Students also gain knowledge about how to do careers.

II. **Problem Solving:** Students learn how to solve problems that are important to them, including real community issues, more effectively—even learning from failure and possibly starting over.

III. **Creativity:** Students apply their inspired ideas and creative thinking to innovate new product designs and possibilities for projects.

IV. **In-Depth Understanding:** PBL helps for building research skills among students.

V. **Self-Confidence:** PBL creates confidence in students by working on real projects.

VI. **Critical Thinking:** Students learn to look at real problems with a critical thinking, trying for finding possible solutions for their project.

VII. **Project Management:** Students learn how to manage real projects more efficiently.

VIII. **Curiosity:** Students get to explore their curiosities while working on project and face more questions and try for finding solutions. It increases the curiosity among students and generate interest for learning.

IX. **Empowerment:** PBL helps for developing confidence for practical use of theory studied in academics among students.

5. Spaced Learning Works

Amazing results were reported when it came to spaced learning. This is a unique learning method, where highly concentrated on summary of lessons or content is repeated thrice by students. There are 2 ten minute breaks in between. During these breaks, various physical or other entertaining activities are performed by the students. This way of teaching encourages students to quickly switch through activities, just like ten minutes of knowledge on the Types of Operating System with a PowerPoint presentation and then having 15 minutes of break for revision. This may enhance teaching learning process. It is said that the method is more useful than traditional teaching.

6. Use of Artificial Intelligence (AI)

AI is make big changes in the education sector. It is clear that from 20th century, smart education software applications based on Artificial Intelligence have addressed several challenges of learning such as language processing, reasoning, planning, and cognitive modeling.

Though the foreword of smart devices such as interactive whiteboards and tablets have inclined how subjects were taught in a more engaging manner. There is something added that AI can include into this sector, thus attractive teaching and learning opportunities even further. Also there are several projects already in the works that use computer intelligence to help students and teachers get more out of the educational experience.

I. Facilitates More Personalized Learning

II. Helps Improve Teaching

III. Automates Basic Activities including Grading

IV. Makes Adaptive Learning Possible

V. Enables Support from AI Tutors

VI. Helpful Feedback for Students and Educators

VII. Reduces Trial and Error in Learning

7. **Teaching through Smart Boards**

Smart boards are more effective way used in teaching. It is helping students experience a deeper level of engagement and understanding. This is done by making the subject related information interactive and visual. The smart boards transform the teaching more interactive and collaborative. The teachers use dynamic multimedia content, to help convey the topic more effectively to the students. It helps for engaging students by making visual experience.

8. Teaching through 3D printing technology

In higher educational institutes, teachers are looking for innovative teaching methods. They can looks for 3D printing as a means of teaching. 3D printers are used to make complex concepts easy to understand.

9. Teaching through Cloud Computing

Use of cloud computing in teaching it helps for teachers, students and administrators. In this method, teachers can upload classroom resources such as notes, lecture videos, audios, assignments, lesson plans and sample question banks etc. Students can access all study materials any time by using internet. This method is very useful for students, when students have missed class either for illness or any other reason.

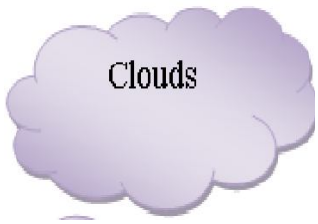

Fig 1.1 Teaching through Cloud Computing

10. Use of QR codes

QR (Quick Response) codes allow students to subject related information through internet. By using QR code, students interact with lectures by scanning the code with their mobile phones or digital devices. QR codes are simple to create and have various applications, such as:

- Checking answers
- Voting during class discussions
- Supplementing textbook information
- Getting survey data
- Accessing video tutorials
- Sharing their learnings with peers

11. Use of Logical thinking

Logical thinking is a powerful approach thinking and solving problems or programs. Aim of this method is to teach students, to understand problem, design algorithms (step by step problem solving method) and reach to the required solution.

1. Social media in to education

A social media are very popular among students. Some popular social media are Facebook, MySpace, YouTube, blogs, Twitter and what App etc is. Peoples share their ideas and interests by using social media. A lot educational videos are available on YouTube. Live streaming is also possible by using social media.

Fig 1.2 Social media in to teaching

13. Use of teaching applications

Number of teaching applications or software are available. This can help for designing your session. This applications provides Virtual Learning Environment for teachers and students. By using that students can access electronic teaching and learning materials such as lecture notes, assignments and videos etc. It also provides links to useful websites and activities such as discussion forums, group etc. Number of tools is provided by using that teachers and students organize all of their own content. Most of the applications use Cloud computing for storing data. A great tool to use for research activities students can store images, PDFs, and even hand written notes. Moodle is the most popular open source teaching application.

KEY FINDINGS AND CONCLUSION

The main objective of the teaching is passing knowledge or information to the mind of students. Any teaching method which is based on objective of improving students' subject knowledge could be considered as innovative teaching methods. There are a number of ways that teachers can be used in teaching. Now days, use of ICT is more contributing on creating new teaching methods. Education create the mankind among students for travelling on right direction. The purpose of education is not just making a student literate but adds logical thinking, knowledgeably and self-sufficiency. Creativity can be developed and Innovative teaching and learning benefits for both students and teachers.

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INNOVATIVE METHODS IN COMPUTER SCIENCE TEACHING

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ABSTRACT
In today's world computer science and technology are increasing day by day. Today's world is "World of software". On every next foot, we are using software's in different areas like electronic instruments in a house ,school, colleges ,offices , industries, Defence area, research and development …..…etc endless list is there. Such a huge amount of computer applications pretends to learn computer science.in today's scenario, everyone is a learner and a teacher too in this field. No one in the world is well educated in software. This leads to innovation in teaching style is very important. As

In general, we use teaching methods like a hierarchy starting from bottom to top that is basic to advanced .first definition then example, then an explanation, and then practice.

***Keywords**: advanced learner, slow learner, modern methods of teaching.*

INTRODUCTION:

Computer science teaching styles can be only theory, only practical, theory and practical both.it leads to an area of discussion that who want to learn. Experience person, nave student, faculty of other streams than computer science …etc.

There are a variety of techniques according to students .In general there are two groups of students the first group is an advanced learner and a slow learner .Techniques of teaching computer science to different groups cannot be the same. It depends on the grasping power of the learner. Hence needs variation in teaching style.

OBJECTIVE:

Teaching computer science and its software developing languages to all types of students is challenging work, because of the huge syllabus to be learned in a short period time .Hence we need fast understanding and implementation of lots of new technologies and concepts. And hence innovative technique for teaching computer science must be there, so to complete this task some techniques like making videos the of same topic, using of images than just having a theory, making habit of codding i.e. maximum focus on practical knowledge than just completion of syllabus.

RESEARCH METHODOLOGY:

The Primary method of data collection is used. Survey and questionnaire are techniques of data collection.

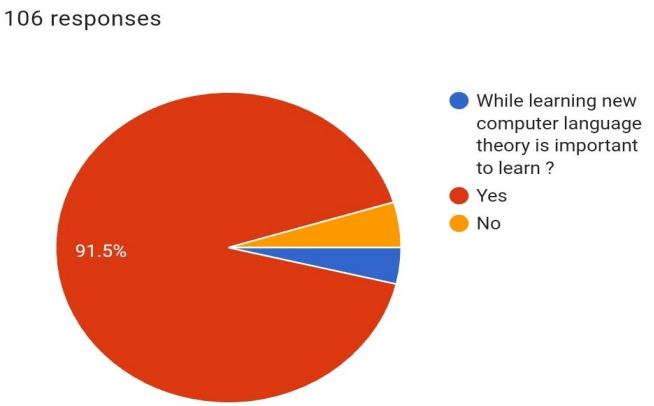
REVIEW OF LITERATURE:

1) The results make it clear that teaching methods for Computer science education can be positioned in the context of specific learning theories: Direct instruction and Programmed in the context of the behaviouristic learning Theory; the experiment, learning by teaching and presentation in the context of the cognitivist learning theory; discovery learning, the experiment, computer simulation, problem-based learning in the context of constructivist learning theory.

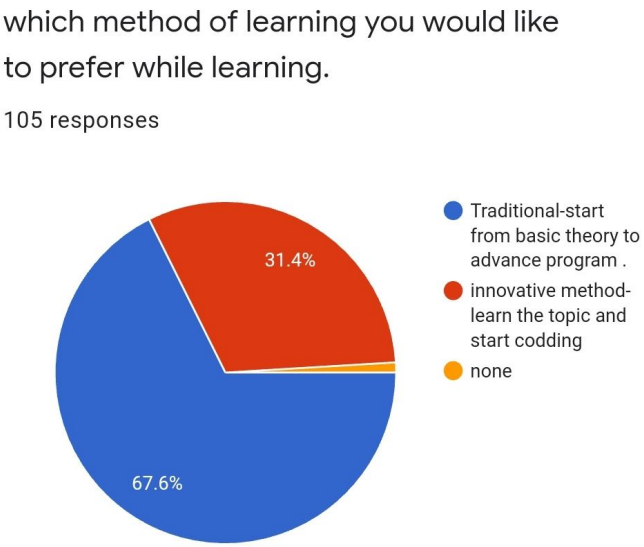
2) Author is taking about how many different types of teaching techniques are there.

3) Traditional, teacher centred lecture-based instruction is still common in higher education (Bransford, Brouphy, & Williams 2000; Cuban, 2001). While there is an increasing interest in making students more active learners, many teachers see their main responsibility as "covering" the material. Thus, these teachers view their main role as teachers in the transmission of the knowledge to their students. Students' engagement is perceived as a nice-to-have component of the lesson rather than a necessity. While they recognize the motivational value of student engagement, they do not see it as an integral aspect of the learning mechanism. This traditional instruction is based on a viewpoint of learning as acquisition of knowledge, which is the essence of the behaviourist viewpoint on learning and instruction. The theoretical premise is that, once acquired, knowledge exists in one's mind independently of the situation in which it was acquired. CS education is no exception. Despite the field's relative newness and the extreme instability of its curricula (Roberts, 2004), traditional teaching is very common within CS education.

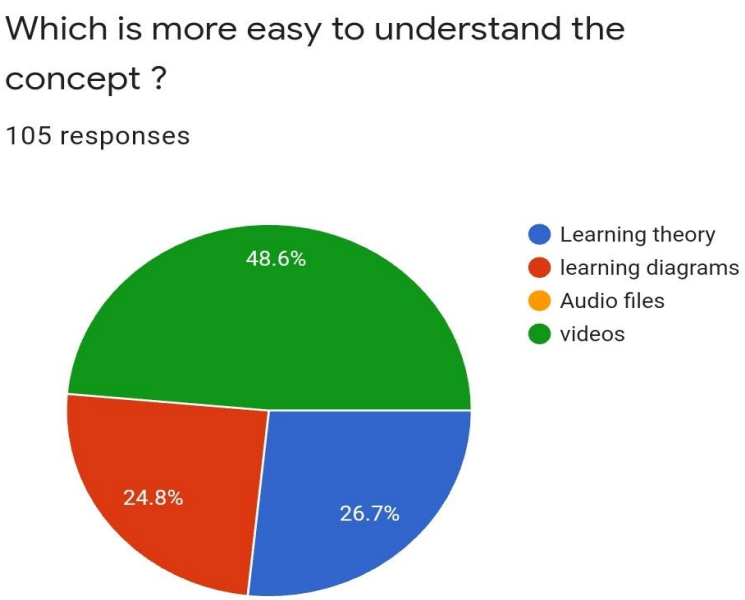
Data Analysis:



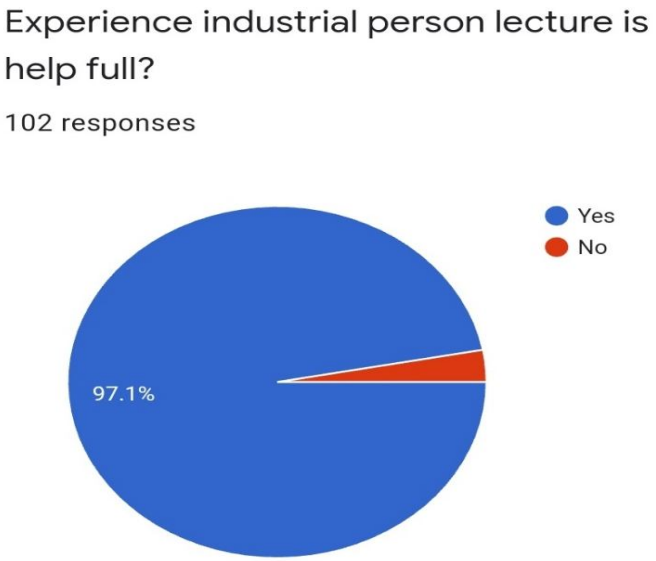
The above survey result and its prediction conclude that while learning computer language learning theory highly important. And very few who are having already knowledge of computer languages can learn new language without theory. Hence learning theory is key to new computer language study.



In computer science learning advanced concepts without theory is possible and more feasible too. For example who is ready with core java concepts can take a hike of advanced java for a short period time .those are advanced learners for them it's like a super vehicle to reach the Destiney. Hence other than advanced learners, they want theory from start to end. Hence while learning computer science Syntax, Keywords, Data types, Functions…….etc. and their writing method is important so the theory is preferred here.



As per above result, lots of learners want to learn from the base and very few wants only advanced.so accepting challenge we can move ahead with a solution like making videos ,PowerPoint presentations ,graphs ,images, google, zoom like platforms…etc. having videos, PPT's of the concept will speed up the learning task. This technique is feasible in terms of money and time.



The person from the IT industry will have a hand-on practice on computer languages. He will focus on less theory and more practical's to teach the concepts. After education, everyone wants to become a good programmer in computer science. Learning from expertise is like boarding a dream vehicle. Hence arranging guest lectures of industrial experts will be always helpful in the teaching plan.

SUGGESTION

From the above study, I can suggest that using videos, images, industrial experts, and hands-on practice on programming language can be a very helpful method of teaching computer science and their languages along with this teaching theory is also important than just focusing on writing down syntax and code program. Hence I would like to suggest that use mixed method of teaching.

RECOMMENDATION

Study of web application development in a short period time.

CONCLUSION:

With this study, I would like to conclude that while teaching computer science some advanced techniques like using audio, video, PPTs, images, industrial experts training, and hand-on practice on programming language must be there. Use traditionally as well as a modern methods of teaching computer science because it's more focus on hands on practice than just learning theory.

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Author: Y. BEN-DAVID KOLIKANT

EVENT MANAGEMENT: AN EXPERIENTIAL LEARNING METHOD

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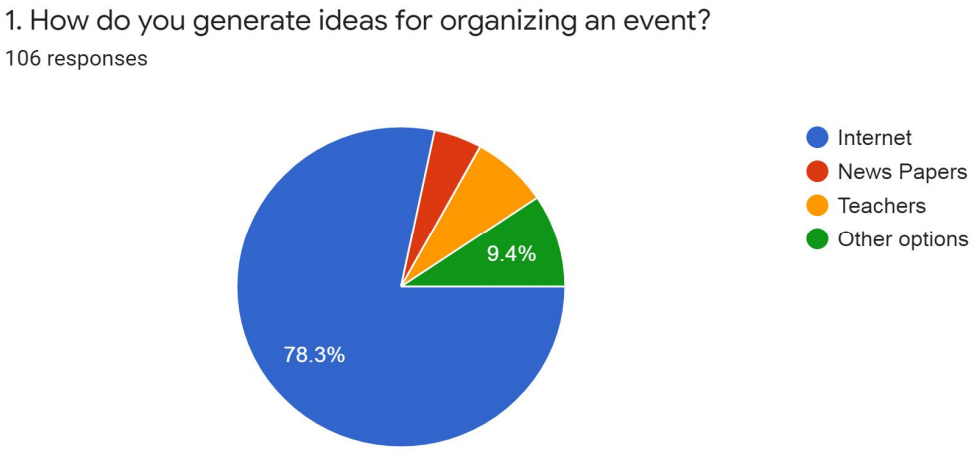
ABSTRACT

Event management is the planning and management of the event or project or activity. It is the art and science of managing events. All the colleges and universities are dealing with event management and need to train their students for that. An experiential learning is an innovative technique to teach event planning and execution. This research chapter is dealing with experience learning and practical implementation of event management.

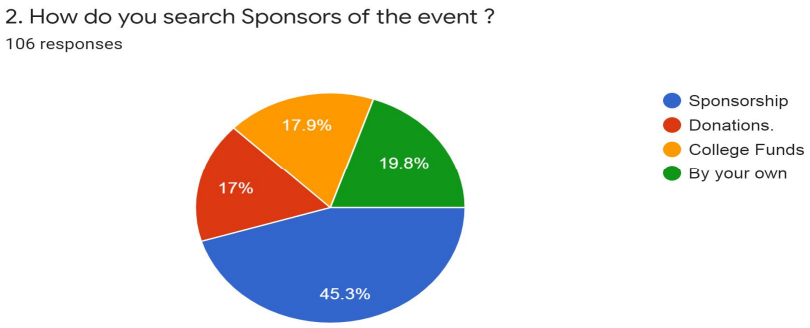
***Keywords**: Experiential Learning, Event Management.*

In 21st century, we need to teach event management not as a theoretical subject but as a practical subject under experiential learning methods. In this subject students learn how to do planning and implement the decided strategy in any event. All the types of event irrespective of size and scope provide a path of lifelong learning experience. Event Management is dealing with pre-event, during event and post event activity. All the students learn how to manage the events in these three stages. In the pre event stage, it is essential to do event planning, budgeting, decide deadlines and search for suppliers, awareness and marketing to increase participants. During the second event stage it includes smooth entry management, Delivered the planned experience and note down what works and what does not. In the post event activity, event feedback, wash up meeting and reconcile budget.

First of all students are involved in the event mission like life stage events like induction and orientation program, birthday party, retirement program. Idea generation is an essential element of the event. Ideas are available on the internet, in the newspapers, provided by the teachers or any other options like observation and open minded approach can be used to generate new ideas for the event.

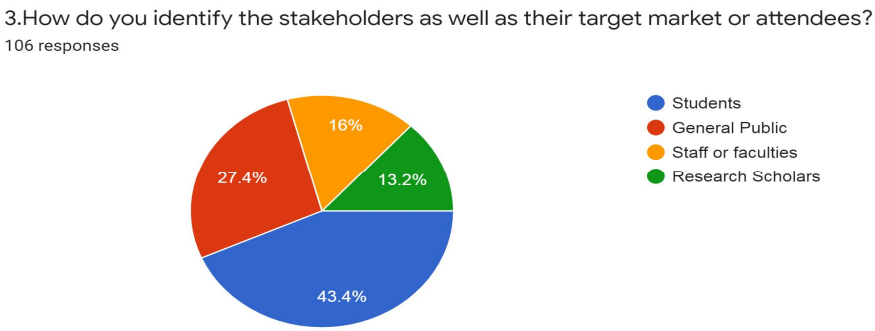


Around 78.3% students are using the internet for generation of new ideas for the event. 9.4% are using other options like discussion with classmates and friends and family members.



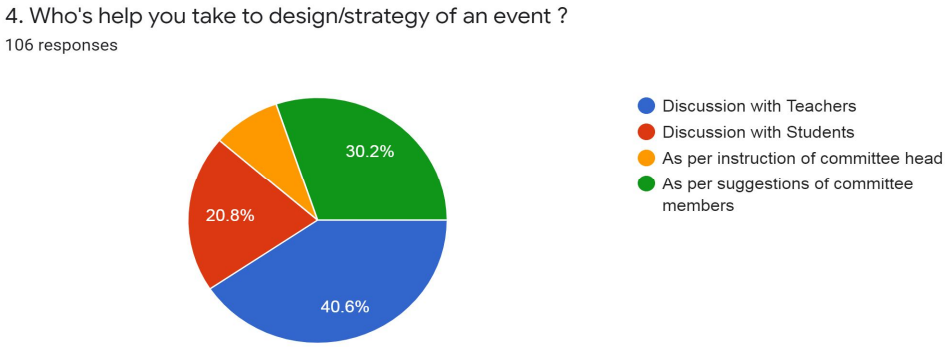
45.3% of students are searching for sponsorship and 19.8% are using their own funds and around 17% is thinking about donations and college funds.

All the students are required to work as a team because it is not an individual game it is team efforts. Budget is also an important part which includes donations, sponsorship, college funds or by our own, so a proper plan is required to manage the budget of the event.



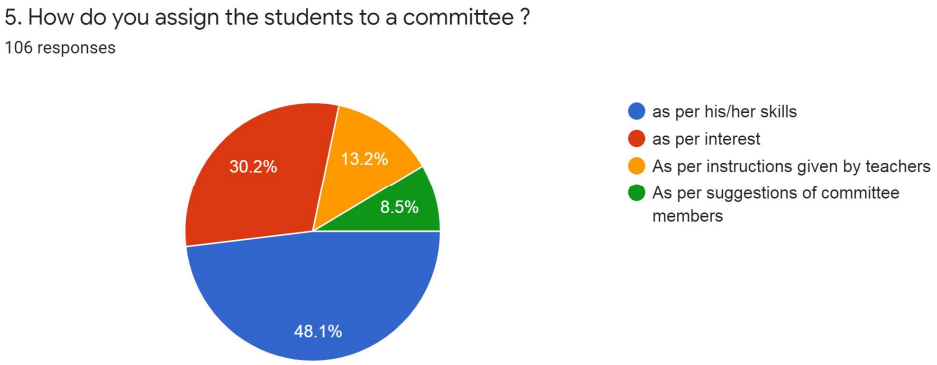
43.4% attendees are students, 27.4% are general public, 16% are related to staff or faculties and 13.2% are research scholars.

Students need to take experience how to attract the target market. What are their expectations? How to fulfill all the expectations during all the stages of the event? What returns are they expecting from the event? All these things are required to identify.

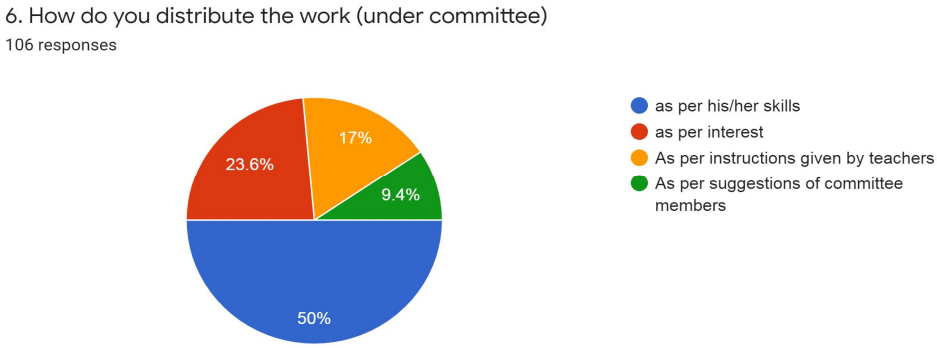


40.6% are dependent upon the discussion with teachers. 30.2% are collected suggestions from the committee members, and 20.8% are discussed with students.

Event design/strategy includes theme, layout, decor, suppliers, technical requirements, entertainment and catering. Each point contributes a lot for the event so students need to do brainstorming for that.



48.1% are assigned as per his/her skills, 30.2% are as per interest, and 13.2% as per instructions given by teachers, and 8 % are assigned as per suggestions of committee members.



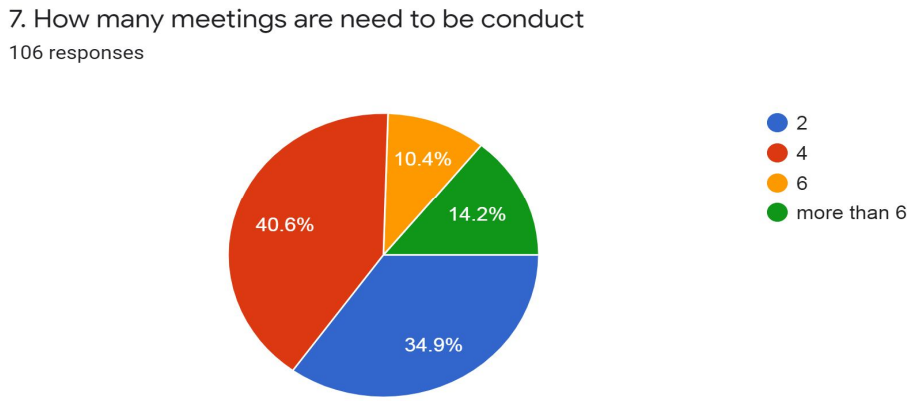
50% students are allotted work as per their skills, 23.6% are as per the interest, 17% as per instructions given by teachers and 9.4% as per suggestions of committee members.

All the students are having a choice to decide their interest area and join the committee to contribute for the event. Students are permitted to enroll themselves for work under different committees. All the committee members are having proper responsibilities (Table A) as they get experience of working under different committees they become experts in all the types of work involved in all the committees. Different committees like Invitation, Games, Anchoring, Technical, Catering, budget, marketing. As this subject is dealing with experiential learning all the committee members are limited up to five members.

(Table A) Sample Committee responsibilities Invitation committee

Sr. No.	Activity
1.	Decide the strategy of the committee
2.	Make Fliers and Pamphlets.
3.	Prepare a registration link and invitation message
4.	Contact with phone call and send text messages
5.	Circulate pamphlet on social media

6.	Take follow up of the registration and public responses.
7.	Click photographs of the event
8.	Feedback of the event

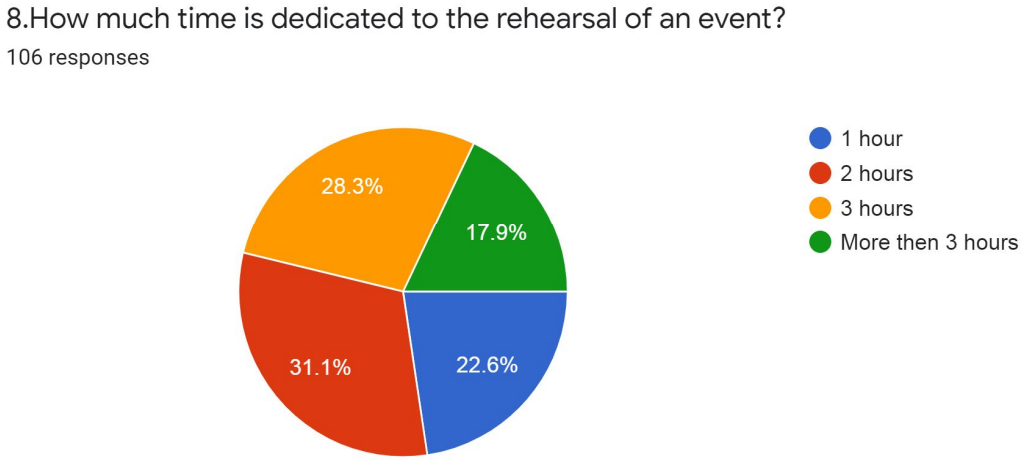


40.6% students can do planning in 4 meetings, 34.9% are required 2 meetings, 14.2% needs more than 6 meetings and 10.4% needs 6 meeting for planning and implementation of the event.

Each committee has one head and he or she has specific responsibilities. (Table B) all the committees inform each other about their status and share problems and find out solutions for that. All the committees are required to work properly and need to complete their task on time. All the heads of the committees meet in a regular interval of time and do reporting to the staff about work in progress and they decide the next strategy of the event.

(Table B)Responsibilities of head of the committee

Head of the committee
To inform, arrange and coordinate meetings of the committee.
To follow up with the members, follow all the deadlines and report to the staff.
To communicate and coordinate with other committees.



31.1% students are required 2 hours, 28.3% students are required, 22.6% students are required 1 hour and 17.9% required more than 3 hours for planning.

Each and every committee has to prepare a committee plan proposal and need to submit it to the staff (Table C) this committee plan proposal content all the preparation of tasks given to them they need to make all necessary provisions and must submit it to the committee head.

(Table C) Committee Plan Proposal

Registration link for the event
Preparation of pamphlet or flyer
Implementation of the event
PPT presentation
Games or refreshment activity if any
Feedback of the event
Participation and winners certificate

All the committee members are required to meet in the regular interval of the time because sharing and discussion provide new ideas and are helpful to reduce communication gap between all the members and result into smooth flow of work. Regular meetings increase the bonding between all the members to manage the events successfully.

Along with communication, coordination is also important with other committee members because some tasks are dependent upon others and it is helpful to think about the time span required, identify loopholes and to create healthy competition between all the committees.

Dry run of the event is the next task. It is related to checking that technical aspects are properly working or not, time span required for all the parts of the events, target audiences are getting proper messages or not. Proper planning, proper preparation resulted in proper execution of the event.

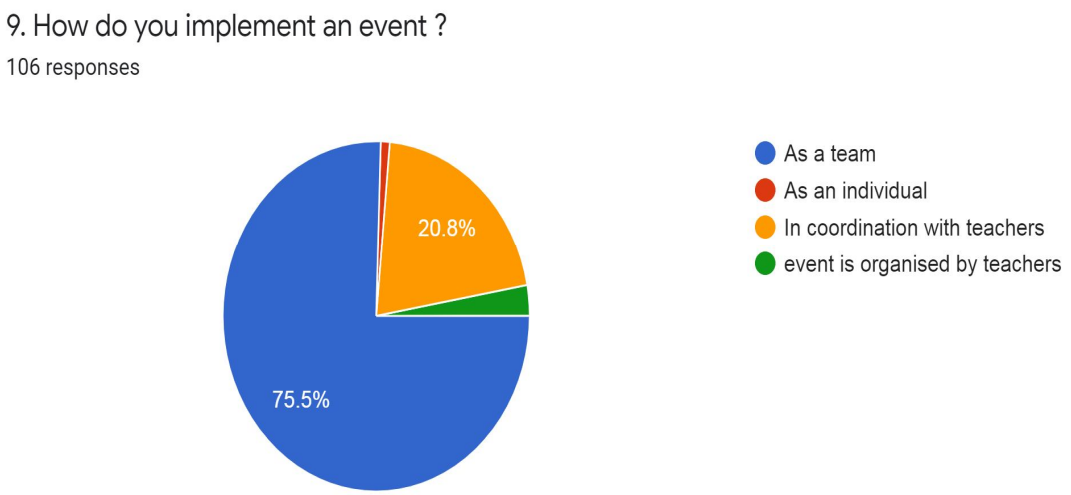
Implementation of an event is a team work so students need to have a proper team with assigned duties and ready to meet with all the challenges and problems during the event. The contribution of each member and dedication of the team is the key to a successful event.

Follow up and evaluation provides data for the post event evaluation and research work. Positive and especially negative feedback and suggestions are required to analyze properly. It is like a mirror which shows the loopholes in the event. Nowadays many options are available to take feedback from the audience like Google form, audio and video recordings, likes and comments on social media. Press releases and post event press conferences are helpful to encash credit for the event.

Event final report and presentation is the last stage of the event. Every committee needs to submit a report of the event. Oral report is not useful for the future reference but written reports are useful for record, reference and evaluation.

EVENT IMPLEMENTATION

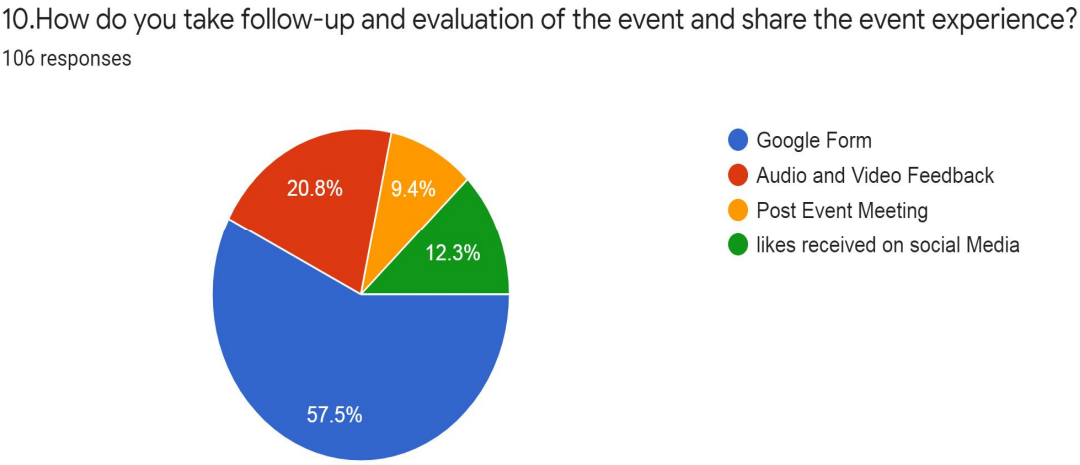
After the dedication of all the committees the final day came. All the members are very excited and enthusiastic to run the event successfully. All the committee members take their position and perform their task honestly. Receiving guests, registration of members, providing them coupons, seating arrangement, catering, facilitation of the guest, safety and security, entertainment, photography and video recording of the event. When all the events are completed properly as per the plan, all the students feel proud of work they have done. Students can experience the result of their hard work and dedication.



75.5% students are working as a team, and 20.8% students are implementing an event in coordination with teachers.

EVENT FEEDBACK AND EVALUATION

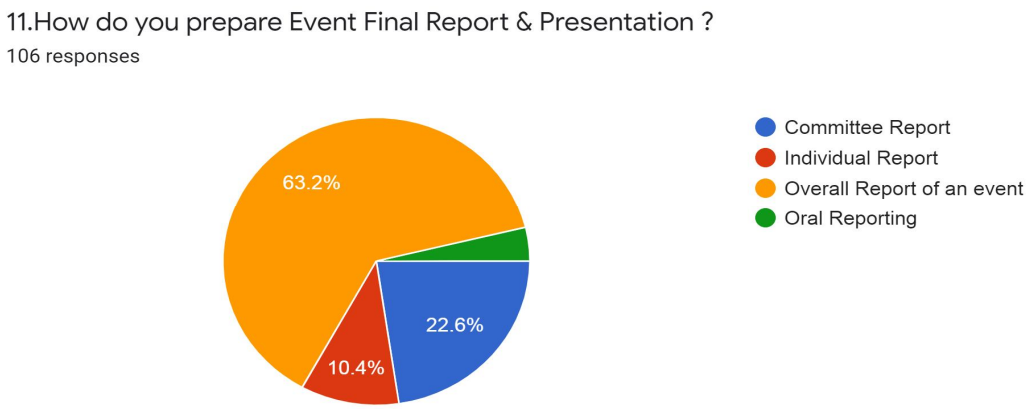
It is very essential for all the committees to get proper feedback from all participants. It gives them a chance to evaluate and examine themselves and make corrections in the next event. It includes sending feedback form; analysis of feedback, thanksgiving emails to all attendees, post event press release or conference, post event reports to staff. Feedback analysis and evaluation help them to improve the overall process of the event.



57.5% students are using Google form for feedback, 20.8% use audio and video feedback, 12.3% are using likes received on social media and 9.4 % arrange post event meeting.

EVENT FINAL REPORT & PRESENTATION

Event final reporting and presentation is allowed students to communicate their results and outcomes of the event. The success of any event is calculated on the basis of quality work done by the students and feedback from the participants. It includes a number of participants, positive feedback from the audience, success stories, experiences and new suggestions, photos, audio and videos feedback from the participants.



63.2% are submitting overall reports of an event, 22.6% are submitting committee reports, and 10.4% are preparing individual reports.

EVENT EVALUATION (INDIVIDUAL)

Event evaluation includes what they have learnt and how they will implement it in the next event. Marks or grades are provided to the students to encourage them for the next event. All the students need to do self-introspection and find out the strengths and weaknesses and new opportunities for improvement.

CONCLUSION

An experiential learning method is a very powerful tool to teach the event management process. They learn planning, preparation and presentation of the event. Event by event their confidence level is increased, they are able to manage all the types of events in the near future. Finally there is a celebration with the students to celebrate the success of the event.

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TEACHING METHODS OF BOTANY IN HIGHER EDUCATION

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ABSTRACT
The subject botany is being taught in classroom in theoretical way. This traditional way of teaching is responsible for lessen interest of students and botany became topic of rarely discussed. The aim of this work is to find out innovative ways of teaching which serves to the interest of both students and teacher. This article focus on suggestions for shaping presentation of botany in new ways which is in favor of use new classroom technology and more emphasis on use field or non-formal space and more practical teaching methods. This article denote that to teach this subject it needs classroom teaching which provide background theoretical knowledge and then creative ways of experiential learning to get better insight. Teaching methodologies should be changed as per subject point of view. It is necessary to pay attention on the way of teaching in higher education and training of teachers to improve teaching skill as per changing scenario teaching and learning.

Keywords: *Teaching methods,Botany,teacher's skills,highereducation, innovative teaching methods.*

INTRODUCTION
It is important to focus attention on the teaching practices utilized during teaching plant science at every level of education. There is no any Standard Operating Process (SOP) or model of teaching. But interactive, motivated, informational, experiential or any other unusual practice could be more inspiring for learning process. The teachers imagination, innovative or unusual way of presentation creates interest among students and make them more enthusiastic to learn more.

In case of Botany, plant being an important part of life on earth. There are so many opportunities and challenges are being provided by Botany to teachers and students also. To optimize students interest in plant science is the challenge in front of botany teachers. This subject is being taught by many years but still there is need to present this subject in a new way to undergraduate students. As well as this text focus on how newly entered teachers represent activity concern with botany that fulfills learning and teaching purpose.

FINDINGS AND DISCUSSION
The teaching of Botany is characterized as being very theoretical, demotivating for students and undervalued within the teaching science a biology (Kinoshita *et.al* 2006). Even with recognition of the importance of plants for human being, the interest in plant biology is so little that plants are rarely perceived as anything other than component of the countryside or decorative objects (Wandersee and Schussler , 2001) call this Botanical blindness. In this technological time period knowledge of plant science open up lots of doors of opportunities to apply this and explore the great diversity of flora for different purpose which will enhance welfare human life as well as life on earth. To fulfill this purpose the transforming botanical knowledge to undergraduate students with the aim of inculcating facts, sustainable utilization and values.

The traditional methods like classroom teaching is quit unsuitable when it is concerned with Botany. In classroom teaching, the teacher leads students where textbook is main resource of

knowledge and black board, chalk are tools used to make students familiar with textbook content. Botany includes different facets which includes morphology, anatomy, taxonomy, genetics, photochemistry, breeding technology, pathology, histology, etc. these branches cannot be teach in same way or form of teaching . It requires usual or innovative way of teaching which make leaning the botany more motivating, interactive, participative and full of knowledge.

As botany primarily focus on studying plant structure and relationship between organism it required additional assistance of innovative methods of teaching. Morphology includes study of external physical characters of plant which is the basis of classification of plants in different group according to comparative account of characters. Here while teaching in classroom use of printable material showing parts of plants, lifecycle , habitat , shape, size , color and some peculiar character plays important role in teaching . As well as handling of plant material also gives better insight. Further use of non formal space for teaching or visit to different vegetation area or ecosystems provide actual visualization of textbook content. Activities like sow , grow and show are very impactful while teaching g botany as it directly help in teaching diversity of plant, their requirement of different factors, stages of development , structure and function of different organs.

While teaching Internal organization of plant body initially providing theoretical background , handling material , sectioning , section staining, observation under microscope gives idea regarding facts of internal arrangement of cells and tissues. Use of smart board which enable to show colorful diagrams of different sections and showing permanent slides helps in impactful teaching. here drawing of diagrams together by explaining role of each tissues gives better idea. Teaching braches of botany like genetics, plant breeding, computational botany needs to shape presentations in such a way that it serves interest of students and fulfill teaching objective. Here giving background then visualization method, field classes, relating subject with mankind, discussion of current issues and there relation with plants, discussion regarding impacts of any current projects of plants in all way, visits to botanical gardens, attaining related talks and seminars, guest lectures by eminent personality , group discussion, problem solving, more practical sessions helps in teaching and making students more motivated and enthusiastic. In case of genetics direct experience with plants inheritance by sow, grow and show method , solving problems regarding genotype and phenotype method, game oriented teaching, solving different crosses in which parents with different genotype are crossed and the future offspring's genotype and phenotype predicted. Here personalized examples, case study and relating genetics with human kind contribute to increased interaction and increased critical thinking and problem solving skill.

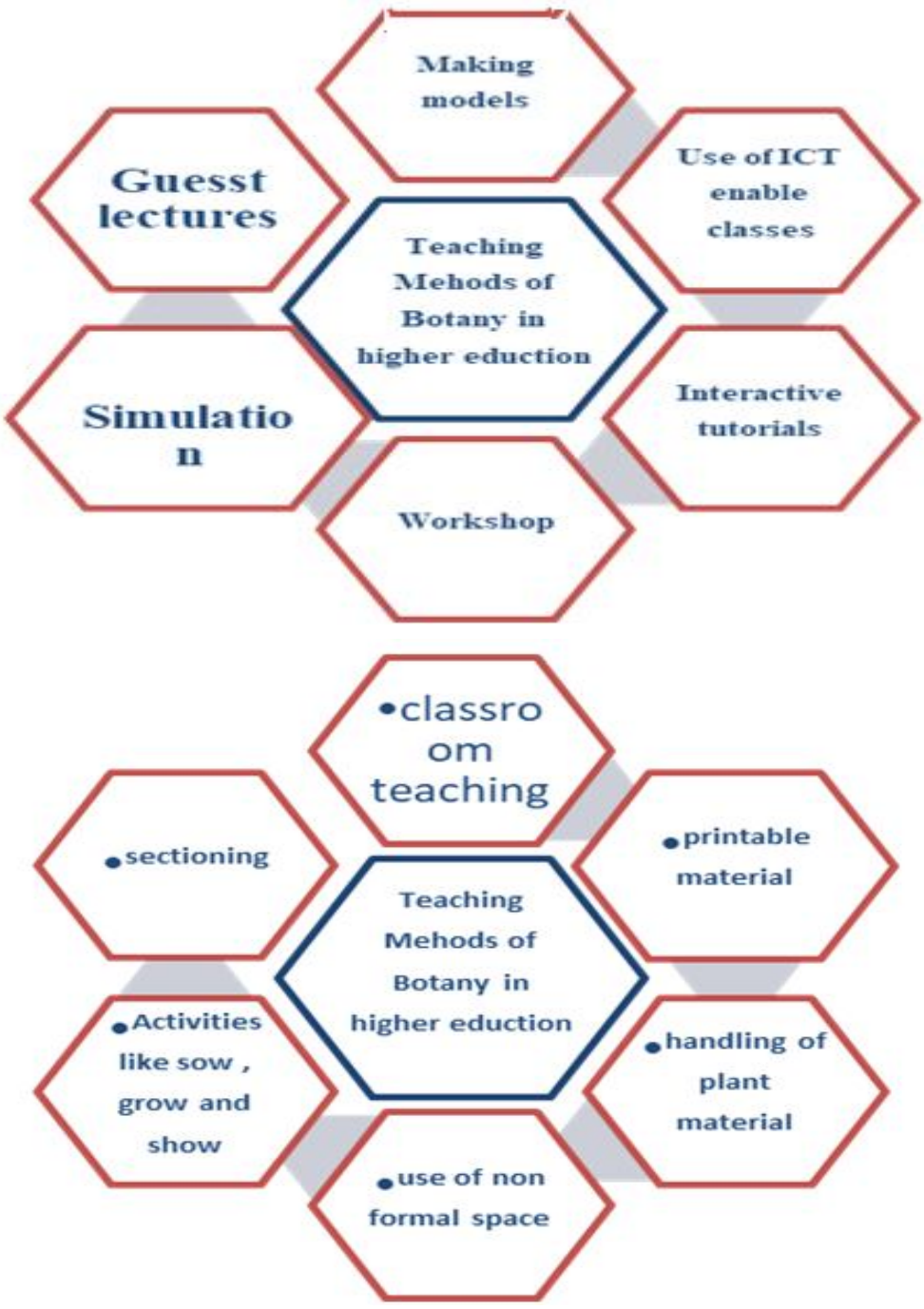
In medicinal botany through knowledge of plant identification, life stages of plant part, drug type, its effect, how to extract the drug from plant part, making different medicinal preparations is required. For that purpose teaching process should be shaped in a way that gives experiential learning to students. More practical classes, activities or demonstrative lesions, guest lecture, visits to industries which extract, formulate and market herbal drug conducted for teaching and learning.

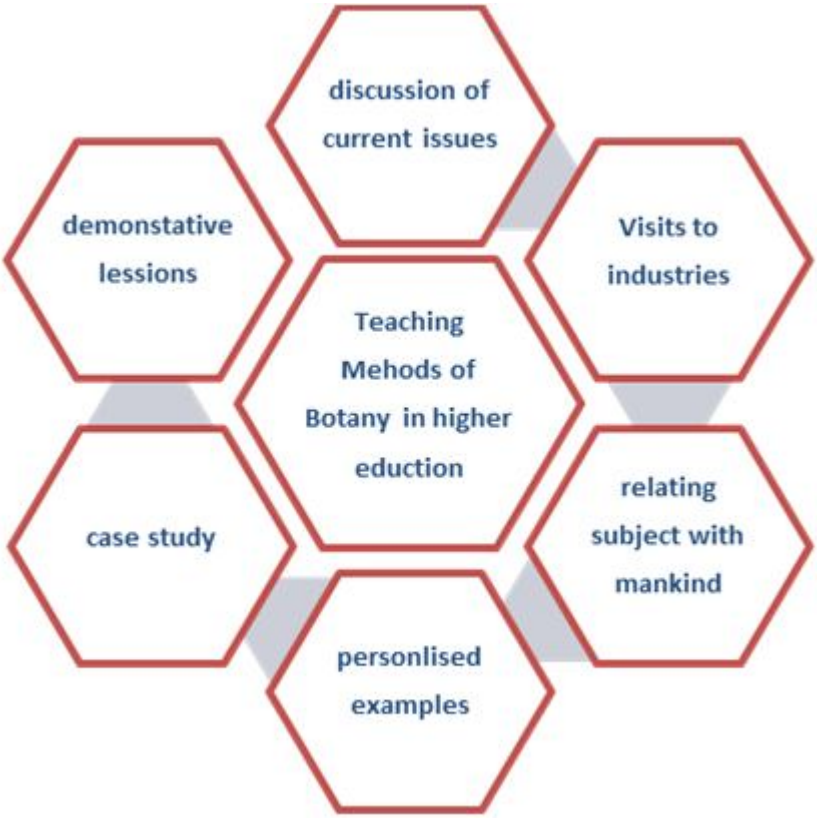
More over teaching botany becomes easier if it is based on learning through activities. Here are some of the activities which make teaching botany more interesting and easy Presenting diagram through rangoli , making models , poster making , organizing seminars , using PowerPoint presentations, use of smart board , visits to nurseries, biotechnological institutes and laboratories, arranging workshops, providing bridge courses and add-on course of botany, case

studies , interactive tutorials, teaching through educational videos, use of Information and Communication Technology (ICT) enable classes and more field and practical exercise

Use of educational models, educational videos, smart board and ICT enable classes are new aids enable teacher to teach in formal space and execute the same practice in different way by provide any sort of information, visuals and audio. This enhances teaching skill and fosters leaning also.

Teaching Methods of Botany in Higher Education





CONCLUSION

The above discussion suggest that teachers need to assess the way of teaching in classroom and in non-formal space. Nevertheless, they should adopt innovative and unusual ways of teaching including classroom technology and higher order andragogic teaching. The teaching should be characterized by curiosity, creative, connective, changeable and collaborative. From above discussion it is concluded that the teaching of botany requires to restructure presentation of subject to fulfill objective of teaching and to promote learning through active participation which fosters skill development such as reflective thinking, critical thinking and problem solving. Innovative methods of teaching should be acquired to serve to interests of students and teachers also.

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INNOVATIVE TEACHING METHODS IN COMPUTER SCIENCE

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ABSTRACT
Some of our most inspiring and unforgettable movies are of teachers and professors who use innovative methods of teaching to achieve resolute the minds of the scholars and win the hearts of the audience while doing so.

***Keywords**: Smart Boards, Flipping Classrooms, Cloud Computing, GINI*

INTRODUCTION
While some years ago, one would only see such innovative and effective teaching on the screen, today technology has given teachers across the globe variety of tools to reinforce teaching methods. Here are some innovative teaching strategies which each and every teacher can embrace and make their teaching far more interesting:

1. Cross over Teaching Although this teaching approach does not include computers, because of the faculty, it is still an enriching opportunity for the coed. Here, in a relaxed environment like after-school study groups, or museum and gallery tours, the education takes place. The instructor should relate the material of the lesson with the interactions that the scholars have. This teaching is further developed and deepened with the addition of
2. Teaching through Smart Boards Thanks to bringing the classroom to life and helping students experience a greater degree of dedication and awareness, smart boards are a successful resource. This is often achieved by rendering the material of the course engaging and visual. The smart boards transform the teaching process into an immersive and collaborative experience as teachers use innovative digital content to help communicate the topic .
3. Teaching through Flipping Classrooms Flipping the classroom is becoming a productive approach that is increasingly popular. Throughout this approach, by handing on the burden of learning on them, the scholars are made active participants of the training process, it allows the teachers to relegate to the position of knowledge providers and also the students take on the task of collecting knowledge about concepts. Sch sch uses different technology methods to. Although many may doubt whether teachers around the world should owe students the responsibility for learning, teachers around the world have shown that when they are guilty of their own teaching, they immerse themselves more in the subject, taking more interest and learning better. This teaching approach is one of the easiest ways to build the basis of independent learning.
4. Teaching through collaboration Another innovative approach to instruction involves the facilitation of student collaboration for multiple ventures. Today, in a globalized world, we sleep and teamwork is an important skill in life that is important for all professions and companies. Within the classroom, teachers can help promote this ability by encouraging students to figure out, research and add groups. By assigning community homework or motivation Today, teamwork as a teaching style is gaining recognition as a comprehensive teaching method where the burden is once again on the community of academics where teachers play the role of guides, advisors, academic supervisors. It also teaches students empathy, negotiating capacity, collaboration, and problem solving.

5. Teaching through video game The technology of Virtual Reality includes helping students learn through experiences with a 3D environment. for example, rather than taking the scholars through a monotonous history class, the teachers can use 3D technology to explore ancient civilizations, jaunt distant countries for a category in geography or maybe take a visit to space during a category on science. Virtual Reality technology offers students a valuable opportunity to find out in an immersive manner that makes an enduring impression on their minds. It makes learning fun and helps the scholars retain the fabric for a extended time – all the essential points when considering effective teaching methods in an exceedingly classroom

6. Teaching through 3D printing technology Teachers trying to find innovative methods of teaching can even observe 3D printing as a way of teaching. This method is fast gaining global acceptance, especially in higher educational institutes where 3D printers are wont to create prototypes and make complex concepts easy to grasp. within the lower level classrooms, teachers can use the 3D printers to show content that was previously taught via textbooks, thus helping students gain a much better understanding of the concept- especially STEM subjects.

7. Teaching through Cloud Computing Bringing technology into the classroom makes it possible for educators to experiment with new teaching methods. the employment of cloud computing is one such method where teachers can save vital classroom resources like lesson plans, notes, audio lessons, videos, and assignments details on the classroom cloud. this may then be accessed by the scholars from the comfort of their homes, whenever needed bringing the classroom back to the scholars with the press on a mouse. It also ensures that students who have missed class either for illness or the other reason stay updated in the least times. It eliminates the necessity for lugging around heavy textbooks and allows students to be told at a time, place and pace that they're comfortable with

8. Technology and innovative methods of teaching The use of technology within the classroom helps to interact the scholars with different sorts of stimuli and creates an environment of activity-based learning. It makes the classroom material more interesting and makes it enjoyable to learn. For teachers, technology offers an endless set of resources that they will tap into reckoning on the necessity of the scholars. While this blog lists some such resources, for a lecturer trying to find effective teaching methods during a classroom, turning towards the most recent technology will offer an enormous number of updated solutions. One of the largest challenges for teachers across the ages has been to stay the scholars within the classroom engaged and awake to the content that's being taught. Over the years, innovative and enterprising teachers have come up with unique ideas to assist the scholars connect with the topic. From introducing games to the scholars to including video to form the topics more relatable to the scholars and to spice up engagement rate between student and teacher In recent times, the introduction of technology within the classroom has helped enrich and enhance the pedagogical process. Tools like Interactive Whiteboards, computer game, Augmented Reality, Video and Game based learning among many others have transformed the new-age classroom and made learning more interesting than ever before. Learning within the Age of COVID-19 Today, the globe is changing another time as work-from-home and learn-from house is the new mandate in almost every a part of the planet. during this scenario, schools have adopted virtual classrooms because the new norm and educators are making every valiant effort to stay educating kids as best as they will. While these online classes, make sure that the education of the scholars in not interrupted, teachers don't have any prior training programs for virtual or remote teaching. As a result,

many teachers still replicate what they are doing in an exceedingly classroom, but they're not always successful as they struggle with disengaged and demotivated students. To engage with students in a very virtual classroom, it's important to shift the way of thinking and learn to adapt to newer methods.

LET'S SEE WHAT ARE THE NEW WAYS TO STAY STUDENT ENGAGED IN VIRTUAL CLASSROOM:

1. Prepare before Just like a conventional classroom, a virtual classroom also needs the teachers and also the students to be prepared beforehand. A useful tip are for the teachers to form an inventory of all the items the scholars need then to channelize the list to all or any the oldsters in order that they will prep the learners with all the resources. These can include books, texts, stationary etc. For teachers too, they'll test out their slides with the font sizes, colors, template designs and screen ratios to make sure on- screen readability. This preparation can even include an audio clarity test.
2. Set the principles at the start Just like the teachers, the scholars too aren't at home with the concept of a virtual classroom and hence teachers can start every morning with familiarizing the scholars with the principles of a virtual classroom. These rules can include guidelines on mike, camera, chat etiquette for the scholars to follow.
3. Create a souvenir system for the scholars One simple thanks to engage the learners within the virtual classroom is to introduce short-term and long-term goals and rewards into your online classroom. Rewards like feedback, virtual points, and badges can go an extended way in reinforcing the learning and motivating the scholar to have interaction better within the classroom
4. Questions, questions and more questions In an endeavor to stay the scholars more engaged, it's important that the teacher ask as many inquiries to the scholars as possible. rather than just reading or explaining the lesson to the scholars, questions allow the lesson to be more interactive and hence keeps the scholars engaged. Teachers can ask the five W and H questions associated with the lesson – What, Who, Why, Where, When and the way. The teacher must also encourage more questions from the scholars to reinforce the engagement levels within the virtual classroom. Many experts also suggest that teachers can keep a count of the amount of questions each student asks, to make sure that everyone the scholars are engaged and attentive.
5. Keep the category short and lessons crisp learning online may be a huge task, especially for younger students who may find it intimidating sit before the screen for long hours. By splitting content into smaller more manageable bite-sized chunks, educators can help to stay students to remain engaged and feel addicted to the virtual learning experience. This is often also a decent thanks to abate online learning fatigue.
6. Continuous progress check-ins one of the simplest ways to remind students of the previous lessons and help them feel connected to the category is thru short-term progress checks. These may include revisions, tasks or short quizzes on previous topics to jog the memory of the student and help them connect the dots between the courses.
7. Building a college student bond Just as some students don't connect during a traditional, physical classroom because they feel invisible and believe that they need no valuable inputs, similarly many students may additionally feel that they're going to not be missed within the virtual one. Additionally, some students don't find their teachers very engaging or are unable to relate with them. For such students, teachers can try building a

relationship, about to know them though a video or voice call outside of the classroom to assist them feel motivated. Other small tips can include asking the scholar for his or her opinion within the classroom, giving positive and inspiring feedback etc.

8. Use the flipped classroom model to interact the scholars Using the flipped classroom model, teachers can send students resources like texts, videos, podcasts, etc., to supply background to the subject being learnt. The actual learning time within the virtual classroom can then be used for subsequent learning activities like group or one-on-one discussions. this may make sure that the valuable time within the classroom is employed to strengthen the understanding of the concepts, while the scholars stay interested and motivated. For many students in addition as for teachers this adaptation from a standard classroom to a virtual meeting space for learning isn't easy. Today, teachers must remember that the necessity of the hour is for unlearning their processes and pedagogy and appearance for brand new ways during which they'll harness technology to show better and made a stronger impact on their students, who are struggling in isolation without their peers. One of the most important challenges for teachers across the ages has been to stay the scholars within the classroom engaged and tuned in to the content that's being taught. Over the years, innovative and enterprising teachers have come up with unique ideas to assist the scholars connect with the topic. From introducing games to the scholars to including video to form the topics more relatable to the scholars and to spice up engagement rate between student and teacher In recent times, the introduction of technology within the classroom has helped enrich and enhance the pedagogical process. Tools like Interactive Whiteboards, video game, Augmented Reality, Video and Game based learning among many others have transformed the new-age classroom and made learning more interesting than ever before. Learning within the Age of COVID-19 Today, the globe is changing yet again as work-from-home and learn-from house is the new mandate in almost every a part of the planet. during this scenario, schools have adopted virtual classrooms because the new norm and educators are making every valiant effort to stay educating kids as best as they'll. While these online classes, make sure that the education of the scholars in not interrupted, teachers don't have any prior training programs for virtual or remote teaching. As a result, many teachers still replicate what they are doing in a very classroom, but they're not always successful as they struggle with disengaged and demotivated students. To engage with students in an exceedingly virtual classroom, it's important to shift the way of thinking and learn to adapt to newer methods.

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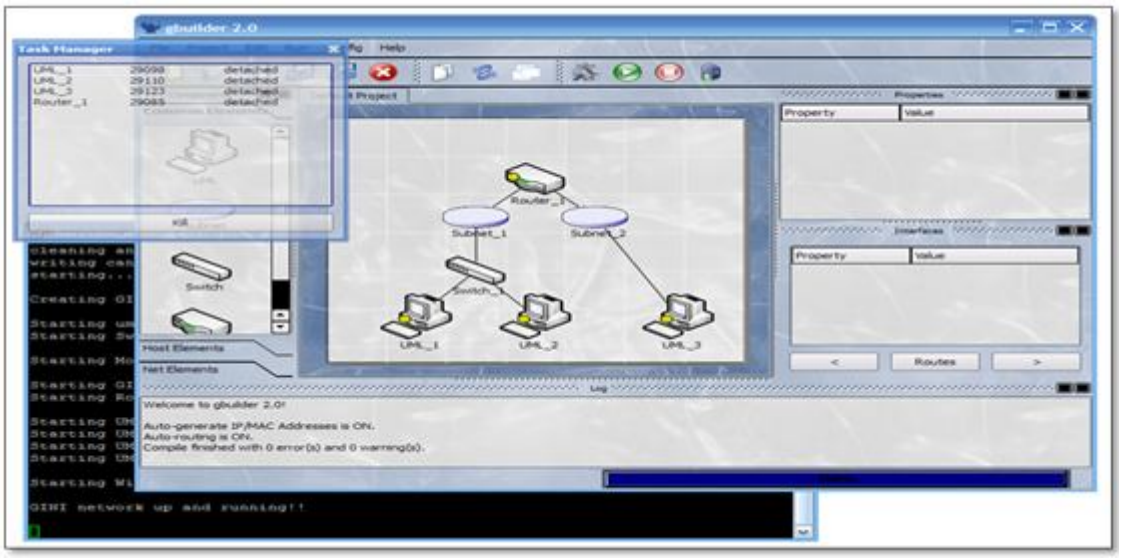
most effectively?" "What platform offers the most effective features that simplify the teaching process for my teachers?" "Which virtual classroom software has the simplest features will meet the varied needs of all my students, without being too intimidating for teaching and learning?" These are essential questions that each school management team ponders over when picking the most effective virtual classroom solution. We have compiled an inventory of a number of the simplest features that are essential for each online classroom to be effective and help the scholars learn within the very best manner:

- Compatible across devices students and teachers functioning from home will access an array of devices. While some students are able to use the newest smart phones and tablets, others will use older laptops and computers. Therefore, on all computers and on all architectures, including Android, iOS and Windows, the interactive classroom solution must be compliant.
- HD and live video streaming capability learning online or within the virtual classroom isn't merely offering the scholars recorded videos and prerecorded lectures. the most effective thanks to stimulate a conventional classroom is to permit the teachers to live-stream their lectures in a very way that the scholars can see the teacher and contrariwise in real-time. Real-time video and audio streaming provides a real look and feel to virtual classrooms. Here students can use the net camera and therefore the microphone to interact with the teacher and clear their doubts. Live-streaming of the classroom lecture will help the teachers understand how the scholars will are understanding the concepts being taught.
- Grid View The grid view feature of a virtual classroom solution allows the scholars and teachers to look at one another on one centralized screen. this allows the teachers to look at the scholars all without delay and evaluate their response to the teachings, as they might in a very traditional classroom, with no extra visual distraction.
- Security Another important feature for the virtual classroom is that the security and therefore the ability to confirm that no outsiders can join the session. it's therefore essential that every one users be authenticated before joining a virtual classroom. this will be done through passwords and personal meeting links. Additionally, students and teachers should have access to the category content like subjects, assignments, exams etc. consistent with their authorization privileges. Also, any communication that reveals personal information of the teachers or the scholars should be encrypted.
- Screen Sharing and Live Presentations Screen sharing and live presentations allow the teachers to share their on-screen activity in real-time with all participants within the virtual classroom. With the assistance of the share screen feature, the teachers can physically demonstrate activities and ideas to the scholars. This facilitates problem-solving capabilities and enhances the educational of the scholars.
- Controls for Meeting Hosts Irrespective of whether it's a conventional classroom or a replacement virtual classroom, it's essential for the teacher to manage the category effectively as a poorly managed class can break the educational experience. in an exceedingly virtual classroom, a vital feature is that the ability to limit access to functionality when needed. this can prevent the scholars from talking over each other and facilitate engagement and learning. Some functions that may help manage the category are muting participants, hand-raising, and therefore the ability to show functions and features on and off for either one student or for the whole class.

- Interactive Digital Whiteboard and Other collaborative tools A digital white are often compared to a conventional marker board or chalkboard within the classroom. The teachers can use to show using equations or diagrams. But within the virtual classroom, the interactive digital whiteboard incorporates a broader scope. It is a virtual collaboration tool where participants can draw, sketch, and write together to share thoughts, ideas and conclusion. The digital whiteboard is offered to any or all participants within the classroom, and that they are a good thanks to keep the learners engaged and help them collaborate.
- Communication tools like group chats and get away rooms To help learners remain interested and fascinated by the classroom, teamwork is important. Tools such as group chats, group messaging and breakout rooms help scholars stay connected with their peers and help create the feeling of collaboration in the classroom. These resources allow the instructor to split the class into groups and delegate person and group duties.
- Recorded and archived lessons Online sessions are often recorded and archived for college students to revisit the teachings PRN. These also help the scholars who were absent to catch informed class.
- Cloud Storage and Backup Cloud storage Solutions are a superb aid for teachers who want to store their classroom data and access it from any location. It also helps teachers to store and distribute the study among many students. Students can also access their class data, assessments from any location of their choice.

GINI: A User-Level Toolkit for Creating Micro Internets for Teaching & Learning Computer Networking

GINI (GINI isn't Internet) could be a toolkit for creating virtual micro Internets for teaching and learning computer networks. It provides a straightforward to use graphical program (GUI) called gBuilder for creating network instances. The consumer will create small to moderate sized networks using gBuilder. Once the network is constructed, parameters like subnet addresses are assigned by the user to different components of the network. By automatically calculating routing tables and assigning IP and MAC addresses automatically, gBuilder provides support. The user can open the network using the gBuilder interface the user can start the network. The starting process creates virtual instances of every network element and connects them as laid out in the network. as an example, User-Mode Linux instances are started for machines and custom user-level routing programs are started for routers By contrast, all network components run on the computer on which gBuilder was introduced.



GINI FEATURES

- For undergraduate or first-year graduate students, GINI was created for teaching and studying computer networks.
- this implies we wish to stay the toolkit simple specified students can get conversant in the toolkit within weeks and begin doing their assignments before the semester is over! Simple to use with graphical computer program driven network design.
- Fully open-source system. Normal compatible router (although simplified) that works with unmodified Linux TCP/IP stack.
- Opportunity for college kids to implement additional protocols (UDP, TCP, etc), new network elements (layer 5 switches, firewalls), etc...

CONCLUSION

Digital classrooms are a boom for schools as they encourage teachers and pupils, much like the regular classroom, to communicate and interact digitally in a way. With no disturbance or delay in their training, students will resume their learning process. With the features mentioned above, schools will choose the right interactive classroom option for their learning needs.

REFERENCES:

http://www.krchowdhary.com/innovat-teach/cse.pdf

INNOVATIVE TEACHING TECHNIQUES IN SUPPLY CHAIN AND LOGISTICS MANAGEMENT

Vishakha Rasal
Assistant Professor, Sarhad College of Arts, Commerce and Science Katraj Pune

ABSTRACT

New things come into existence when there is innovation. Innovation has lots of importance in each field. If we look around, we can understand the importance of innovation. Teacher is the source of Knowledge. When students find teaching is interesting, they automatically get involved in learning and try to learn that subject with interest. To make teaching more interesting different types of teaching methods can be applied. In this Paper researcher throws light on different innovative techniques used while teaching subject Supply Chain and Logistics Management.

Subject Supply Chain and Logistics Management needs to teach with different methods as this subject need more conceptual understanding.

This research is conducted regarding different innovative methods used in teaching of Supply Chain and Logistics Management subject. To make teaching more effective different techniques were used. This research paper throws light on Effectiveness of different teaching methods used in teaching of subject Supply Chain and Logistics Management. Researcher has used innovative methods like Active Learning, Case Study Solving, Quiz and PPT to make understand subject easily to students. To study the effectiveness of different teaching methods researcher used Questionnaire to collect data. Collected Primary data analyzed by researcher to reach to findings. Suggestions are given on the basis of findings.

Research paper ending with conclusion which is drawn on the basis of research conducted.

***Keywords**: Innovative, Quiz, PPT, Case Study, Teaching methods*

INTRODUCTION:

There are different methods which can be used to make teaching effective. In this research paper impact of different teaching methods is studied.

1. PPT:

PPT stands for Power Point Presentation. In this method main points are presented on screen and explanation of that point is given by presenter. PPT is one of the best methods as we can make use of different charts, graphs as well as images in PPT to clear the point. Moving of slides can help students to concentrate on screen. Points explained with the help of PPTs are understood by students more easily.

2. Quiz:

Teacher needs to understand status of mind of students in subject gaining. Quiz method helps in understanding where students stand. When question is asked students, mind starts thinking on it which help them to recite the concepts they learned before.

3. Video Presentation:

Students can understand concepts within short span of time by watching concept related videos. Such educational videos are shown in classroom to create interest about education among students.

4. Case Study Session:

Case study is very interesting method of learning. Solving case study needs understanding of different concepts clearly. To crack problem given in case study students need to think in different way and because of these innovative solutions come into existence.

OBJECTIVES:

1. To study effectiveness of different teaching methods.
2. To give suggestions to make teaching more effective in future.

RESEARCH METHODOLOGY:

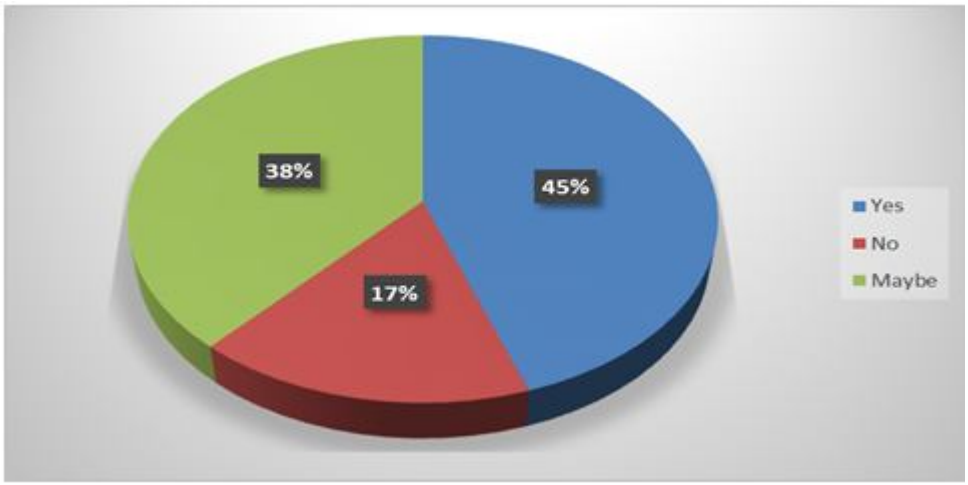
Researcher has collected Primary Data to study the effectiveness of different Innovative teaching methods. Research carried out on SYBBA and TYBBA students from Sarhad College of Arts, Commerce and Science Katraj Pune. Questionnaire was sent through online and data was collected from SYBBA and TYBBA students regarding effectiveness of innovative teaching methods

DATA ANALYSIS AND INTERPRETATION:

Survey was conducted of 47 students from SYBBA and TYBBA. Collected data analyzed with the help of different Charts.

Q. 1. Do you think video presentation is effective method in concept understanding?

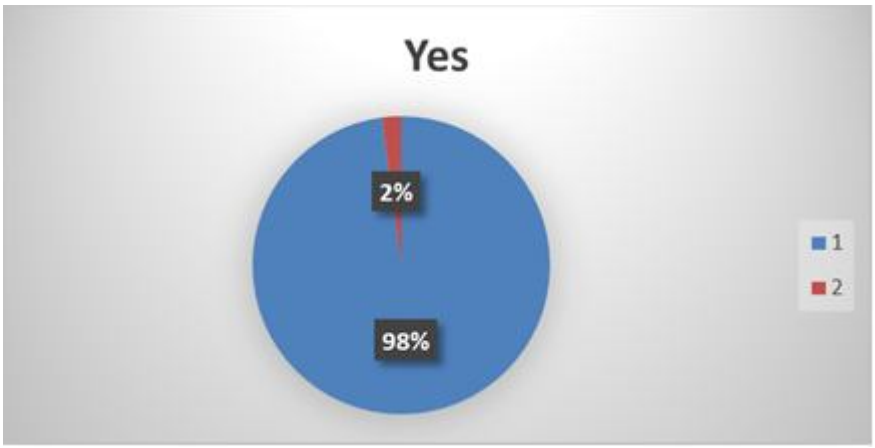
Yes	21	44.7%
No	8	17%
Maybe	18	38.3%
Total	47	100%



Above chart shows that in response of effectiveness of video presentation 45% respondents saying Video presentation method is effective, 38 % respondents saying video presentation may be the effective method and according to 17% respondents video presentation is not the effective method in teaching.

Q.2 Do you aware about quiz?

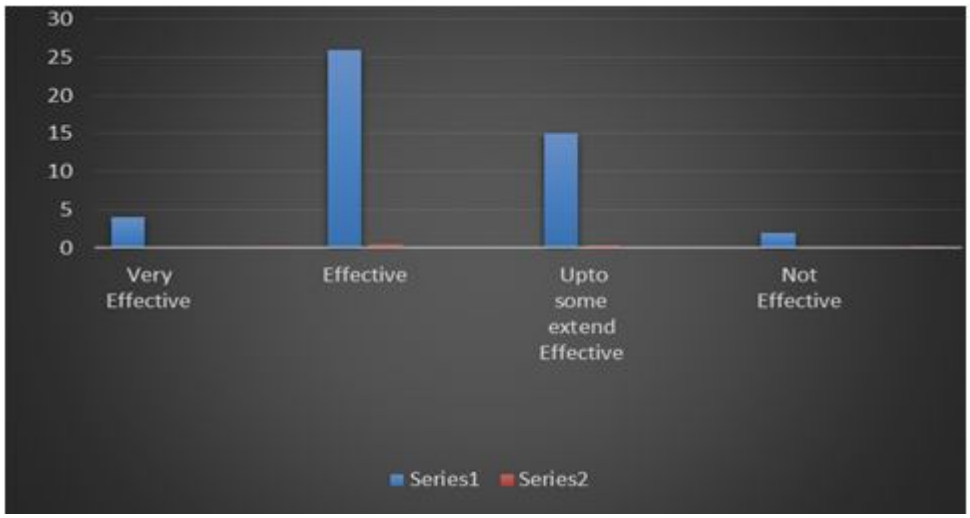
Yes	37	78.7%
No	10	21.3%
Total	47	100%



In response of awareness of Quiz out of total 47 respondents 98 % respondents saying they are aware about Quiz while 2 % respondents are not aware about Quiz conducted in classroom while teaching.

Q. 3 How do you rate Quiz conducted in classroom?

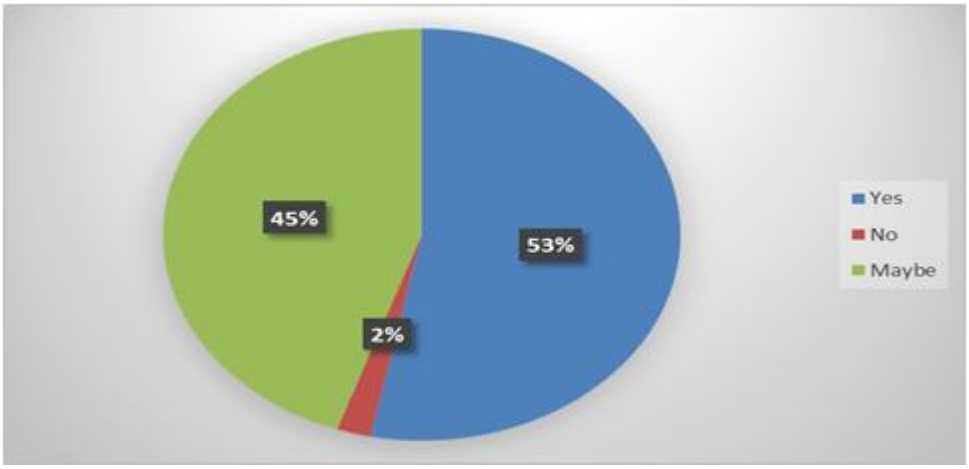
Very Effective	4	8.7%
Effective	26	56.5%
Up to some extend Effective	15	32.6%
Not Effective	2	4.25%
Total	47	100%



Out of 47 respondents Quiz is Very effective according to 8.7 % students, Quiz is Effective according to 56. % students, Upton some extend effective according to 32.6 % students and Quiz is not effective according to 4.25 % students.

Q. 4. Do you think Quiz is interesting method of learning?

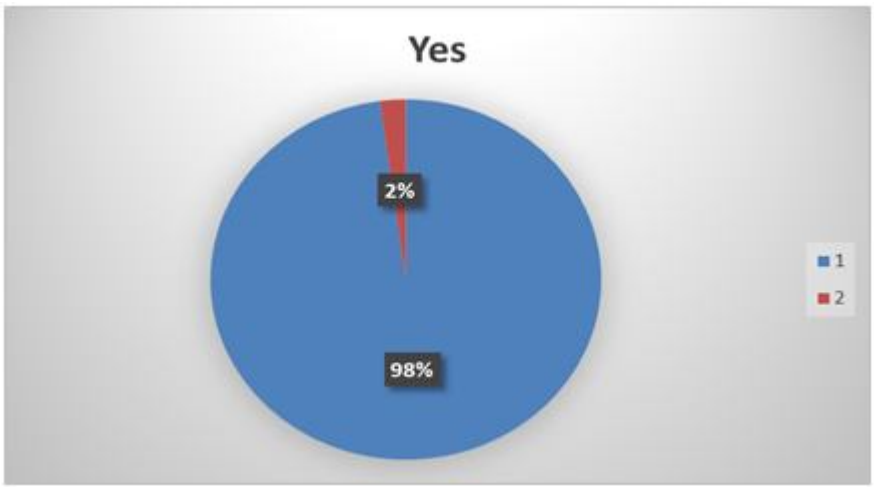
Yes	25	53.2%
No	1	2.12%
Maybe	21	44.7%
Total	47	100%



In response of question Quiz is interesting method or not 53% students saying Quiz is interesting method of learning, 45% students are in opinion Quiz may be the interesting method of learning while according to 2% students Quiz is not interesting method of learning.

Q. 5. Did you attend Case study Session?

Yes	37	80.4%
No	13	19.6%
Total	47	100%



Above chart shows that out of total 47 respondents 98% students attended case study session conducted in classroom while 2 % students not attended Case study session conducted in classroom.

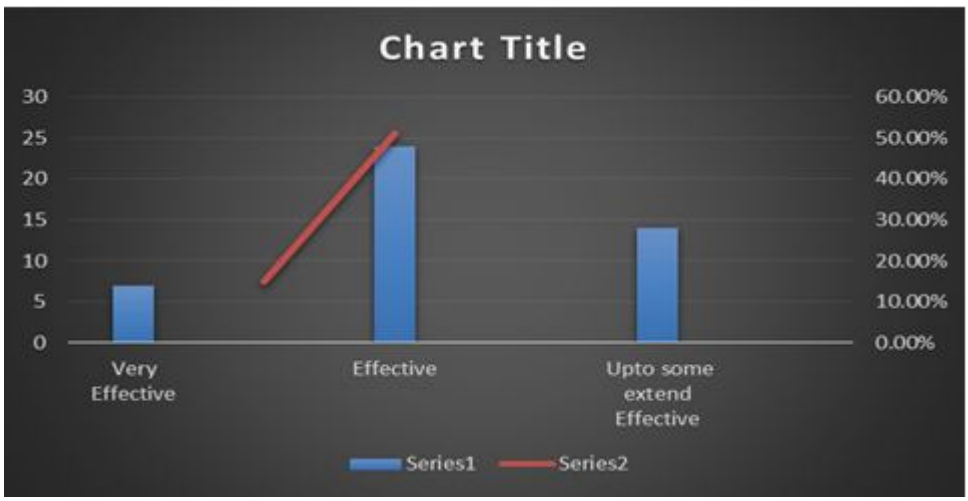
Q. 6. Do you think case study solving is effective?

Very Effective	5	10.6%
Effective	25	53.2%
up to some extend Effective	15	31.9%
Not Effective	2	4.25%
Total	47	100%

In response of Effectiveness of Case study, according to 10.6% students Case study solving is very effective method in learning, according to 53.2 % students Case study solving is an Effective method, according to 31.9% students Case study solving is Effective up to some extend only while according to 4.25% students Case Study Solving is not an Effective method of learning.

Q. 7. Do you think learning with PPTs is effective?

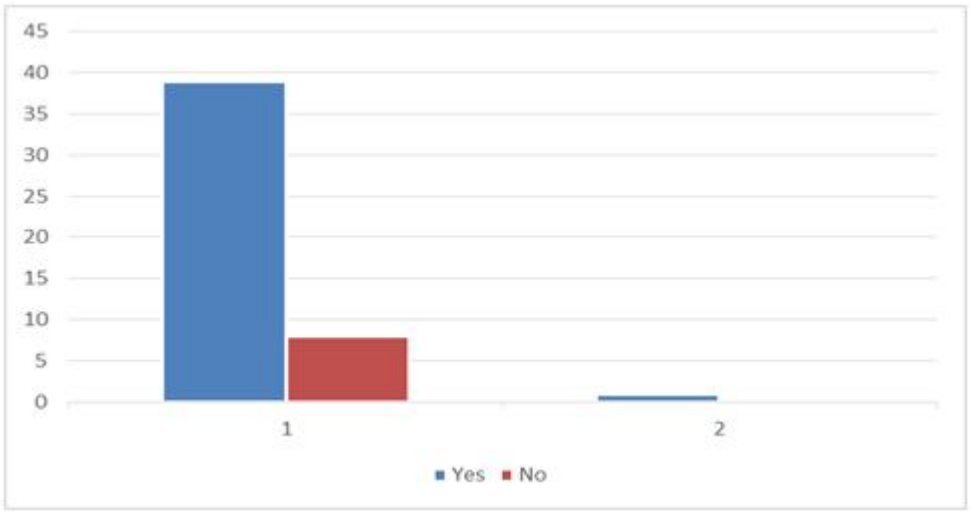
Very Effective	7	14.9%
Effective	24	51.1%
up to some extend Effective	14	29.8%
Not Effective	2	4.25%
Total	47	100%



In response of Effectiveness of PPTs, out of total respondents, according to 14.9 % respondents PPT presentation is Very Effective in learning process, according to 51.1 % students it is Effective, according to 29.8% students it is Effective up to extend only and according to 4.25% students it PPTs are Not effective in learning process.

Q. 8. Making use of images while teaching will help you to understand concept more easily?

Yes	39	83%
No	8	17%
Total	47	100%



In response of Effectiveness of Images in Concept understanding, according to 83% respondents making use of images helps students in understanding concept more easily while according to 17% students use of images does not help in concept understanding.

FINDINGS AND SUGGESTIONS:

1. According to data collected to find awareness of innovative teaching methods applied by researcher it is found that most of the students are aware about different teaching methods used by researcher while teaching subject Supply Chain and Logistics Management. But still some students are not aware about these techniques so researcher should to try to give benefit of these innovative techniques to those students also.
2. According to survey More than 50% students judged these innovative teaching methods are Effective, researcher should put more effort to make these techniques more effective so that it will create more interest of learning among students
3. According to Survey researcher is applying only Video presentation, Quiz, PPTs and Case Study solving methods, researcher should innovate more methods in teaching to make teaching more effective.

CONCLUSION:

It is truly said that change is the only permanent thing. Same is applicable to Teaching field also. Different innovations must be carried out in teaching learning process to enhance the interest for learning among students.

ABOUT THE EDITOR

Dr. Sangeeta Shashikant Shinde has a vast teaching experience of 21 illustrious years to her name. she is a well-qualified faculty with MA, BEd, SET, M. Phil, PhD in Economics. Currently working as the Vice Principal at Sarhad College of Arts, Commerce and Science. She has published and presented several research papers in national and international conferences, international and UGC Care listed Journals.

Her vast credentials also include being the co-author for M.A. Economics – Growth and Development, T.Y. B.com – Banking and Finance Paper III,(Banking Law and Practice in India) of Pune University and Edited book "Impact of Lockdown. She is Recognised as an approved PG teacher, M.Phil and Phd Guide of Savitribai Phule Pune University. She has also worked as IQAC Co-ordinator for NAAC cycle 2020 of Sarhad College of Arts, Commerce and Science and worked as Co-ordinator for National and State Level Seminars as well. Her rigorous hard work has been appreciated by Best teacher Award by Vishwa Jagruti Mission in 2006 and Aadarsh Shishak Samman by Himakshara in 2019. Vishesh Sanman for the contribution in education sector by Satya and Janeev foundation in Feb 2021.

ABOUT THE BOOK

Teachers must be able to use innovative instructional techniques. Innovative teaching techniques and approaches have been shown in scientific studies to greatly improve student performance. It's not easy to come up with new teaching methods. It can be frightening because, like our students, it takes us out of our comfort zone and puts us in a position where we might struggle. Experimenting with new approaches and techniques, on the other hand, is a must

In this book of "Innovative teaching methods in Higher Education" writers have mentioned various innovative teaching methods used while teaching different subjects. I am sure this will be great help for all the teaching community

Innovative methods of teaching is a crucial skill for teachers. Scientific research has shown that innovative teaching methods and approaches can significantly enhance the student learning process innovating our teaching strategies is no easy feat. It can be scary because just like our students it places us out of comfort zone in a position where we can fail. However experimenting new methods and strategies we can improve students engagement, motivation and attainment and is a win win for both student and teacher.

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