

A STUDY ON “QTM” (QUALITY IN TEACHING METHODOLOGY) WITH SPECIAL REFERENCE TO ENGINEERING COLLEGES

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Abstract: The teaching staff members of various departments were interviewed for getting the correct perceptions of best and effective teaching methods. The faculty members came out with lot of suggestions for effective teaching methods such as Interactive and friendly method, Making them sustain interest and attentiveness, Recap of the previously taught done by the slow learners, Explaining difficult concepts through narrative techniques, Facilitating peer discussion, Emphasizing the important answers for slow learners, Some experiments and demonstrations, Encouraging and Motivating, Instilling curiosity, Teaching through regional language or mother tongue is helpful to some extent in understanding the concept, Easy and quick tips through handouts facilitate quick learning. Apart from the academic side motivation is also imperative and congenial for learning. Besides classroom activities the students should be engaged in writing assignments, seminars, taking the students to industrial visit to get practical exposure, which are parallel to the syllabus and extensive reading is also essential. Instilling curiosity and sustaining their attentiveness is conducive for better learning. This study would help the teachers to understand the best teaching methodology to be adopted in their teaching field.

Key Words: Quality, Teaching Methodology, Practical Exposure.

I. INTRODUCTION

Teaching and learning are the two sides of a coin. The most accepted criterion for measuring good teaching is the amount of student learning that occurs. There are consistently high correlations between students' ratings of the “amount learned” in the course and their overall ratings of the teacher and the course. Students often have little expertise in knowing if the method selected by an individual instructor was the best teaching method or just “a method” or simply the method with which the teacher was most comfortable.

Research on student evaluation of teaching generally concludes that student ratings tend to be reliable, valid, relatively unbiased and useful. Most universities

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embrace a process by which students provide anonymous feedback at the end of each course they complete.

Over the years student evaluation of instructors has changed significantly, especially in the areas of the purpose and methodology. They have transformed from being primarily used to assist students in the selection of courses, to helping faculty members further develop and improve their teaching skills, to assisting administrators with respect to personnel decisions.

The primary purpose of teaching at any level of education is to bring a fundamental change in the learner. To facilitate the process of knowledge transmission, teachers should apply appropriate teaching methods that best suit specific objectives and level exit outcomes.

II. OBJECTIVES

1. To study the methodology adopted for learning skills..
2. To identify the strategy to become dedicated Teacher.
3. To suggest the recommendation for the development of student community.

III. RESEARCH METHODOLOGY

Research Design: Descriptive research

Sampling Design:

Population - Faculty members from various departments

Population Frame: 33

Population size: 29

Sampling method: Simple random sampling

Data analysis tool: Cluster analysis

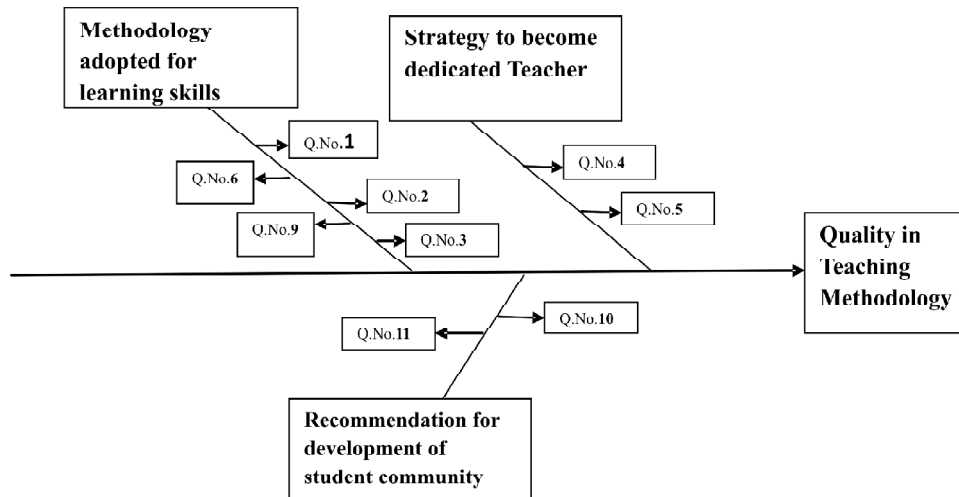
Fish Bone Diagram

Data collection design:

Primary Data collection method

Data collection instrument Questionnaire: Open ended questionnaire

FISH BONE DIAGRAM



1. Teaching methodology matching with students perception
2. Teaching methodology
3. Areas are you most effective as a teacher
4. Strategies for slow learners
5. Methodology for active participation of students
6. Educational challenges faced by the faculty
9. Attribute to become successful teacher
10. Contributions other than academics towards the development of student community
11. Suggestion to improve student's community

IV. DATA ANALYSIS AND INTERPRETATION

4.1. Teaching methodology matching with students perception

Bio-Technology Department

Explaining the concept with PPT.

Explaining the concepts matching with students.

He is expecting students to prepare notes.

CIVIL Department

Starting with example to make them to visualized

Coding examples for problematic and theory papers

CSE Department

Making the students to write the program on their own

They are lacking in programming skills

By giving real time example, it will match the student's perception

ECE Department

Clarifying the doubts, students must treat them equally without any partiality, creating confidence among the students.

Conducting of special classes for slow learners

Students are interested to learn other than subjects.

Students are studying for examination point of view, not for improving basic knowledge.

Question answer sessions, seminar, GD

EEE Department

Analysing the concepts in the practical manner is matching with student

IT Department

Theory and practical

Taking used id and software project management

MECH. Department

Spoon feeding is matching

Conceptual teaching is difficult in below average.

Solving problems explaining mathematical concept

Technical aspects, real time applications is matching

Practical knowledge varying from students to students

Understanding basic concepts

Practical applications equipment, instruments, components teaching is not matching

MBA Department

Training is matching

Fast in delivering lecture

Applying management concepts in the organization

Applications of practical knowledge

S&H Department

Problematic sums can easily understand

Descriptive sums analyzing method they are not able to think and do

Technical explanation, activity based illustration and research level is matching

Interpretation

From the above data it is found that various strategies adopted by the teaching faculty match with the expectations of the students. Deriving the definitions from the case histories and examples is one such easy method to facilitate learning. Since programming skills is a pre requisite in campus placements, this has to be enhanced to increase employability skills. Programming skills is mandatory for student empowerment. Inculcating confidence in slow learners and problem solving ability in quick learners is required.

4.2. Teaching methodology

Bio-Tech Department

Black board chalk

Asking questions in pervious class portions

LCD

Animated movies

Assignments discussion

Group interaction

PPT Videos

Model of micro scope

Using Tamil for understanding particular concept

CIVIL Department

Chalk and board explanations

PPT

Giving assignments

CSE Department

Interactions with students

Story telling

LCD projector

Black board, PPT, OHP, Brain storming, demonstration

Giving assignment in general topics

Conducting class test on particular topic

PPT, giving more real time examples etc.

ECE Department

By showing videos, PPT, conducting special test

Giving study material to students

EEE Department

Peer group coaching

Displaying videos (afternoon) like NPTEL videos

PPT

By conducting technical quiz,

By making demo, (using of an machine)

By showing practical results for the concepts explained

IT Department

Tutorial, real time examples and case studies

MECH. Department

Black board and teaching the students for the difficulties faced during drawing and technical aspects.

Blackboard, PowerPoint, videos, demonstrations

Solving more problems in class hours

Giving more problems to solve

Asking general question (practical) or real life related to subject.

MBA Department

Interaction, company case studies

OHP, LCD

Relating concepts with stories

Conducting management games

Journal reviews

Seminars

S&H Department

Blackboard presentation and guidelines for the problems beyond the syllabus

More concentration on slow learners

Seminar

Encouraging students

Interacting in the class between students and teacher

Interpretation: Educational documentaries inculcate curiosity in pupils with different learning skills. Teaching through regional language or mother tongue is helpful to some extent in understanding the concept. More than covering the syllabus, uncovering them and discussing them is essential. Explaining simple concepts through story telling is an interesting teaching methodology. Modern version of old fables will be of great use. Peer learning will be of great use. Easy and quick tips through handouts facilitate quick learning.

4.3. Areas are you most effective as a teacher

Bio-Tech. Department

Microbiology, molecular biology, immunology bio log, biochemistry (BT)

CIVIL Department

Mechanics of fluids

As a demonstrator

Both theory and practical

Problematic subjects

CSE Department

Make easy to understand to the students

Giving more examples

Simple by giving real time example

Making the students to attend the class regularly

ECE Department

Guiding the top scorer by the university rank

Publishing the papers from the project work

Encouraging the average and below average to get all clear

Completing the syllabus on time

Providing notes for the students

Analytical and derivative papers

Motivation

Clarification of doubts

Treating all the students equally

Having good control over the students by the way of disciplinary action is maintained.

Counsel the students

Mentor and advisor

EEE Department

Concept oriented teaching

Electrical machines

Counsel the slow learners

Make the students attentive in the class

IT Department

Make the student understand the concept clearly

Software engineering and software testing and design object oriented. Software quality total quality and then ERP

MECH. Department

Tutorial

Thermal science: Area related to problematic subjects Eg. Thermal Engg. Gas dynamics, Heat and mass transfer

Concept presentation,

Make all students participate actively during class hour

MBA Department

Management concepts

Applied Operations Research

Business Application software

Human resource management

Communication, Presentation

S&H Department

Students care,

Equal concentrations to all the students,

No angry,

Punctuality,

Humbleness

Graph theory, logic are the areas

Lattice theory and graph theory

Graphs, Algebraic structure, combinatorics (Maths)

Separately giving different notes and improve slow learners, taking special class.

Interpretation

This question can be perceived in two ways. One is subject wise and the other is counseling or mentoring wise. Every teacher finds him /him effective in various ways. Some teachers hit the nail on the head and make the concepts clear. Some explain using examples and case histories. Some experiments and demonstrates. Some discuss the end result should be the dissemination of knowledge. Some teachers teach, train, coach and give many exercises on the same pattern to practice. Some instill curiosity and many teachers encourage and motivate. Every learner has to be dealt with separately.

4.4. Strategies for slow learners

Bio-Tech. Department

Frequent revisions

Explaining concepts in Tamil

One to one interaction during coaching classes encouragement and motivation

Taking special classes,

Special personal counseling

CIVIL Department

Make them sit in the front bench

Coaching classes,

Daily slip test for one hour

Explaining the both Tamil and English

CSE Department

Special coaching classes

During class hours

Asking questions

Making them to have clear concepts

Conducting coaching classes

Giving assignments related about recent technologies on the particular subject

ECE Department

Periodically test will be conducted

Close monitoring and motivating

Study material will be provided for preparations

Taking care of particularly slow learners

Make the students to thorough of 3 units focusing on important repeated questions asked in the university paper

Brain storming

Study material will be given to the slow learners

NPTEL videos to understand the basic concepts thoroughly

EEE Department

Individual approach

Interest skilled learn motivation

Ultimately slow learners encouraged

Give materials like repeated questions and important questions

Explaining about the carrier

Bringing the positive attitude in them

IT Department

Solving important university questions

Focusing on important topic

University discussed in special class and students

MECH. Department

Solving more number of problems

Issuing condensed notes

Giving problems to solve in the class hours

Explaining the problems step wise

Individual concentration

Lesson notes simplified

MBA Department

Peer group coaching

Giving four important 16 marks questions by unit wise to write as an assignment or conducting test

Conducting re test after the cycle test gets over

S&H Department

Bilingual (using of both English & Tamil),

Tutorial classes (writing & correcting on the sport)

Separating the slow learners during normal class hours)

Important Part A and Part B questions with answers were sent to their mail ids. For slow learners Individual attention is extended in the form of counseling.

General counseling

Special class for slow learners,

Interpretation

There are many standard strategies normally used by many teachers to handle slow learners and make them score good grades or mere passing grades. Repeated tests on small portions and explaining the concept individually are of great help. Facilitating peer discussion is of some use. Emphasizing the important answers and training the slow learners on frequently asked questions will definitely lead the students towards success. Simplified notes help the students even in the last minute.

4.5. Methodology for active participation of students

Bio-Tech. Department

Quiz programmes

Discussing by the student on the new invention in biotechnology

How to write the journal publications

List of opportunities available for caring out research in India or abroad

Group discussion

CIVIL Department

Conduct the classes in Interactive manner (Raising questions).

Starting with questions regarding previously taught topics, quiz session

CSE Department

Encourage the students to present the paper

Making students to interact during class hours.

Group discussion,
Seminar,
Conducting quiz

ECE Department

Recap of previous lecture
Explaining concepts relating to the current scenario
Review and revision for previous class
Question answer section.

EEE Department

Tells stories regarding subject related and non subject also
Checking notes of classes periodically
Explaining the concept and repeatedly asking questions
Conducting technical quiz related to subjects.

IT Department

Explaining the topics subjective clearly with relative employability and real time examples.

MECH. Department

Interaction, Quiz,
Question asking real life examples related to problems

MBA Department

Asking questions
Acknowledging their participation through appreciation.
Telling stories to relate with the concepts.
Showing images using PPTs.
Group discussions,
Playing videos,
Conducting quiz programmes on the related topic.
summarizing the concepts at the end of the hour

S&H Department

Asking many questions during the class hours.

Interpretation

Group discussion, presenting seminars using interactive methods, conducting quiz programmes, explaining difficult concepts through narrative techniques are some of the methodologies to ensure active participation of all students. Educating the students on cutting edge technology updates the student's knowledge. Encouraging the students to publish journals and giving them ideas on further research prompts them to learn extensively. Revision enhances the memory of the learners on learned topics. Recap of the previously taught done by the slow learners will enhance their knowledge of the subject and improve their presentation skills.

4.6. Educational challenges faced by the faculty

Bio-Tech. Department

Language problem (poor in English), poor in memory (applicable to 16 marks questions)

CSE Department

Communication skills are very less so they need to improve in that

CIVIL Department

Being up to date

Few students have to face more competitive exam

ECE Department

Weakness in basic concept

Less knowledge in fundamental mathematical knowledge.

EEE Department

Lack of interest, absenteeism of students

Lack of interest to learning

IT Department

Since technology plays the major impact among the students community as a teacher should also upgrade the latest technology

Making the student to sit in the class is very difficult challenge due to the technological advancement like Smartphone,

Internet

MECH. Department

Due to lack in fundamental which they have to learn in schools are the real challenges we face in providing conceptual teaching learning

Lack of attendance, lack of attentiveness

Students are well and good in theoretical subjects and lacking in practical subjects. Like programming papers.

MBA Department

Now a day's students are always in the Internet. They are searching many things and learning a lot. To cope up with the students, faculty members have to update themselves, Have a peer group discussion before taking a new topic to the students. So that we can give more inputs to the student community

Creating attention,

S&H Department

Slow learners will achieve goals for pass,

Create a co-ordinations

Up to date with the current level

Non linear thinking of the students (student is not thinking out of box),

Hesitation to ask / clarify the doubts, lack of behavior / attitude

Mathematical fundamental are very weak

They are not regular in reading / practicing lessons on a day to day basis

Habit of looking at the notes only on the previous night to the examination

No co operation in the students, especially slow learners.

Interpretation

Ignorance of the fundamental concepts, understanding of the subject if it is taught in English, grasping of the new concepts, memory retention, hesitation in communicating, lack of confidence in coming forward, lack of practice in writing competitive exams, lethargic attitude in the beginning and rushing up in the last minute, cramming too many facts in the nick of the moment, inculcating interest and making them sustain interest and attentiveness, inculcating sense of responsibility, lack of self control in preventing them from electronic distractions and overconfidence are some of the educational challenges faced with the students.

4.7. Attribute to become successful teacher

Bio-Tech. Department

Maintaining punctuality giving importance to discipline

Giving equal importance to all students.
Sincere, Hardworking,
Time managing,
Easy approachable to the students.
Making the washout students to clear all the papers on university rank.

CIVIL Department

Motivator, To make one successful in his field
Making the students to understand the subjects and concepts for both theory and analytical subjects is the motto teaching
Think about the student future,(career), job ethics.

CSE Department

Hard work & sincerity to make successful and dedicated.
Commitment, communication, organized, Innovation
Always keep on updating the current trends

ECE Department

Patience and motivating students,
Confidence created among the students, so that the students may come out of fear, by asking doubts.
Easy approachable, kind nature
Counseling the students,
Patience in dealing the students,
To make the students to be comfortable in learning environment

EEE Department

Neglecting negative thought about students.
Finding out good things in each student and bringing out for improvement of his career
Caring, loving.
Dedicated
By interacting positively with students and being a good counselor and good teacher to make the student a good citizen for the society.

IT Department

Hard work makes me a successful and dedicated teacher.

Time management,

Perfect lecture planning and presentation this criteria is sufficient.

MECH. Department

Involve more in research activities with the students, to improve the academic records by achieving 100% results

To attract essay individual's attention / concentration

Modern teaching aids required

S&H Department

Patience.

To be more considerate towards the students with different learning skills

Use of technology which includes software's interact materials. If it provided by the management, he will be the successful teacher.

Regular to class, give tips to students

As a dedicated teacher I should continue trying to reach each of my students and the patience needed to ensure that a disinterested student still learns.

Motivating students by get university rank

MBA Department

Keeping engaged for learning the new technologies,

Updating our knowledge now and then.

Counseling the students after each test.

Parental care shown towards the students,

finishing the delegated work immediately.

Speak to their parents regarding their wards performance in the test.

Sincere, passionate about my profession and punctuality.

Interpretation

Example is better than perception, so being a role model educates the students. Having no discrimination in treating the quick and slow ones removes hesitation in the minds of the slow ones and boosts their morale. Interactive method and friendly approach makes the students volunteer for academic activities. Enthusiasm, magnetic ability to retain attentiveness in students, wide and intensive knowledge of the subject combined with patience facilitates better learning. These are the some of the main attributes of an ideal and successful teacher.

4.8. Contributions other than academics towards the development of student community

Bio-Tech. Department

Encourage in student to take participation in sports and NSS activities.

Discussion on job opportunities,

Creating awareness on new types of drugs and discusses selection of research institutes. Industrial visit to know the basic principles of the subjects.

CIVIL Department

Guide and counsel the students for higher studies

Counsel slow learners to builds their confidence to clear the degree.

Conference, symposium, internship program.

CSE Department

Conducting technology related events,

Students want to attend some event and competitions to learn new concepts.

Conducting guest lectures,

Giving guidelines to develop project works

Encourage the students to attend the conferences and more competitions.

Regular monitoring students,

Developing skills and knowledge of students,

To make students prepare themselves participate paper presentation and other extracurricular activities.

ECE Department

Focusing on competitions like design contest.

Planned to start the mini projects with groups of students, who they are really interested to do.

Motivating the students to participate extracurricular activities,

Technical events,

Paper presentation,

Group discussion,

Motivating students for self employment, placement.

EEE Department

Library activities,

Exam cell activities.

Professional based awareness,

GATE, TOFEL GRE, higher studies, direct recruitment,

IT Department

Counseling the students,

Acting as a class in-charge,

Guiding the students in project

Motivate the student to participate in social related activities, social service.

S&H Department

Counseling

Identification of their requirement to be successful in future.

Giving guidance about what and when of some specific events, workshops, book fairs.

Problematic students to develop and to weak students by counseling them can know how to improve the performance.

MECH. Department

Provide information on the day to day global activities,

Motivating and encouraging students to write competitive exams,

In-plant training arrangement,

Guiding students to take part in competition like conference paper publishing

Motivate project work in own itself, using some other nano materials.

Counseling, making them to participation in the events.

MBA Department

Sending students to attend inter collegiate competitions

Conducting workshops

Guest lectures and industrial visits,

Making them to organize management meet for UG students. Encouraging them to take up the seminars

Advising and helping them to publish papers in the proceedings and journals, etc.

One to one interaction,

Make them indulge in research.

Interpretation

Career planning, Career guidance, Educating them on possible job opportunities in governmental and non-governmental organizations, Educating practical knowledge through first hand sources like industrial visits, Exposing them on higher studies in India and abroad, creating awareness on other possible allied subjects for further higher education, guiding and encouraging the students to participate in symposium and conferences, starting mini projects and motivating them to do research on specific fields. Enhancing their entrepreneurial skills and training them for competing in national and international level examinations such as TOFEL, IELTS, GRE and all these academic pursuits the betterment of student community.

4.9. Suggestion to improve students community

Bio-Tech. Department

Organising awareness programmes on social responsibilities.

Study the lessons taken on the same day,

get involve are travel with the staff members to be a good student and score good marks.

CIVIL Department

Creating in a group to guide slow learners,

Conducting awareness programme,

Seminar and emerging technologies

Regular counseling and also monetary.

Arrange same motivational programme,

Dedicated trained student counseling,

Creating report between college and students,

Frequent alumni interaction.

To respect every one,

Punctuality, sincerity.

CSE Department

Apart from their studies, conducting sports hour(PT) weekly twice,

Giving lectures from some speakers and encourage their students extracurricular activities.

Work collaborative,

Creative thinking

Need more interactions in class hours,
Improve communications skills development.
Changes in attitude, discipline etc.

ECE Department

Discipline is core for studying well.
Voluntary active participation,
Faculty members cum students participate together to study.
Discipline among the students is less. Regular counseling are to be given.
Teach the moral value and ethics of the life interest of teaching how to earn money

EEE Department

Motivation, Personality development.
To create awareness about discipline, global view, about engineering(basics),
Tolerance.
Student need to improve time management and vocabulary skills with respect to
Employability skills, it is one of the skills which is required to re-engineered.

IT Department

Discipline
Apart from academics we should make them to realize the values of life, humanity
and society.
Students should aim for the following areas on, improving attendance, reducing
gossiping in the class hours, aiming for 90 and above marks and not just 50 marks
for passing.

MECH. Department

Students should fill the gap between the academic career and the industrial
requirement students must gain more technical knowledge in the area of interest.
Guest lectures,
Value added training programme,
One to one interaction, industrial visit,
In-plant training,
To give information about self employment,
Exposure the students.
To maintain the discipline in the form of proper dress code.
They should have develop the concept of learn, unlearn and relearn.

MBA Department

We should change them from college to corporate,
Make them to pass employability skills by attending training programmes and soft skill programmes,
Conducting mock interviews for the final year students,
Make them to organize the events / functions by themselves.
Making students to do paper presentation,
Workshop & symposiums and arranging industrial visit

S&H Department

Should cultivate regular reading habit of all subjects in a phased manner,
Learn the time management skills,
Should learn to respect elders, teachers and co friends.
Student's regular attendance,
Assignments, Avoid evening class,
Instead of evening class implement every Saturday as coaching class for slow learners.
Make the students to realize where they are in the competition by giving counseling and guidance,
Learn to relearn,
Inquisitiveness,
Students should take up more practical / internship training seriously.

Intpretation

Enacting the role of a teacher in the form of a presenter of seminar on specific topic will improve the student's abilities. Encouraging frequent interaction with alumni will bridge the gap between the campus and the corporate. The expectations of the companies should be educated. Guest lectures by the practically successful entrepreneurs and higher officials in corporate will empower students. Value added programmes should be made compulsory. The students should be trained on students should be trained on event management, time management, stress management and emotional intelligence. The success of the students and faculty members depends on the fulfillment of the above requisites.

IV. CONCLUSION AND RECOMMENDATIONS

With the years of experience in teaching, the instructors find out various ways to make the students learn and progress. The instructors use different strategies to

facilitate learning among students with mixed abilities. Following same methodology will be monotonous, stereotyped and boring. Depending upon the syllabus, course and subjects, various teaching strategies should be adopted for quick learning. Intensive coaching, individual attention and extra practice should be given for sportive learners. Extensive learning should be encouraged for quick learners. Team spirit among the serious learners and casual learners should be encouraged for the easy dissemination of knowledge. Updating one's knowledge is necessary on the part of the teacher and insatiable curiosity is necessary on the part of the students and both should go hand in hand for better learning.

I. Methodology adopted for learning skills

It is found that various Perception towards the teaching attitude by the teaching faculty match with the expectations of the students. Educational documentaries inculcate curiosity in pupils with different learning skills. Teaching through regional language or mother tongue is helpful to some extent in understanding the concept so the students have to take initiative to improve their language skills. More than covering the syllabus, uncovering them and discussing them are essential. Explaining simple concepts through story telling is an interesting teaching methodology and Modern version of old fables will be of great use. Easy and quick tips through handouts facilitate quick learning every teacher finds him /her effective in various ways. Ignorance of the fundamental concepts, lack of confidence in coming forward, lack of practice in writing, lethargic attitude in the beginning and rushing up in the last minute, cramming too many facts in the nick of the moment, inculcating interest and making them sustain interest and attentiveness, inculcating sense of responsibility, lack of self control in preventing them from electronic distractions and overconfidence are some of the educational challenges faced with the students.

II. Strategy to become dedicated Teacher

There are many standard strategies normally used by many teachers to handle slow learners and make them score good grades or mere passing grades. Repeated tests on small portions and explaining the concept individually are of great help. Facilitating peer discussion is of some use. Emphasizing the important answers and training the slow learners on frequently asked questions will definitely lead the students towards success. Simplified notes help the students even in the last minute. Group discussion, presenting seminars using interactive methods, conducting quiz programmes, explaining difficult concepts through narrative techniques are some of the methodologies to ensure active participation of all students. Recap of the previously taught done by the slow learners will enhance their knowledge of the subject and improve their presentation skills.

III. Recommendations for the development of student community:

It is found that majority of the teachers given Career planning, Career guidance, Educating them on possible job opportunities in governmental and non-governmental organizations, Educating practical knowledge through first hand sources like industrial visits, Exposing them on higher studies in India and abroad, creating awareness on other possible allied subjects for further higher education, are necessary to the students to get successful future in their career.

Guiding and encouraging the students to participate in symposium and conferences, starting mini projects and motivating them to do research on specific fields. Enhancing their entrepreneurial skills and training them for competing in national and international level examinations such as TOFEL, IELTS, GRE and all these academic pursuits the betterment of student community. Encouraging frequent interaction with alumni will bridge the gap between the campus and the corporate. The success of the students and faculty members depends on the fulfilment of the above requisites.