Acknowledgments

I dedicate this handbook to the students and faculty at Lady Doak College in Madurai, India. They inspired me to create this handbook while teaching there on a 2012 Fulbright grant. Former principal Dr. Mercy Pushpalatha enthusiastically supported my proposal to offer specialized "student centered learning" (SCL) training to LDC faculty, and both students and faculty participated with enthusiasm. While I was stationed at LDC other colleges in Tamilnadu expressed interest, and I was able to offer a limited number of these trainings in Chennai and other small cities as well.

I thank the United States/India Educational Foundation for awarding me a second Fulbright grant for this current project: to build on my 2012 experience and expand SCL trainings at a wider range of Tamilnadu colleges and universities. I hope to train " trainers" as well so that I can leave a cohort of Tamilnadu-based facilitators who will continue to promote student centered learning in the years to come. I specially thank the USIEF staff in Chennai who helped me in 2012 to set up training opportunities outside of Madurai, and who will be helping me again in 2017-2018.

I also acknowledge and thank my students, many of whom have come from disadvantaged backgrounds. I thank them for their resilience, enthusiasm and responsiveness. They have shown me how transformative student centered learning can be. Even in the context of poverty, racism, casteism, sexism, homophobia and family violence, students respond eagerly to student-centered learning. They have accepted the challenges of homework, group work, public speaking, and complex activities that stretch their critical thinking skills. My deepest gratitude goes to all the students, Indian and American, whose lives and attentiveness have touched my life. You have taught me that teachers are students too. Thank you for educating me!

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HANDBOOK OVERVIEW

This practical handbook is intended to assist those who want to shift their teaching methods to a more student-centered approach. It contains two major sections, one analytical and one practical. The primary focus of this handbook is to offer practical, detailed instructions and tips for faculty who want to experiment and embed new strategies into their classroom setting. The handbook also contains a series of appendices with helpful resource materials, including tips on engaging student helpers and the creation of classroom behavior guidelines.

SOURCES

The materials and activities in this handbook are adapted from a variety of sources:

- Faculty Focus: Higher Ed Teaching Strategies (www.facultyfocus.com)
- Weimer, M. (2013) Learned Centered Teaching: Five Key Changes to Practice. San Francisco, Ca: John Wiley and Sons
- Nilson, L.B. (2010). Teaching at its best; a research-based resource for college instructors. Wiley.com
- Student Engagement Techniques: A Handbook for College Faculty by Elizabeth Barkley (2010)
- Active Learning: 101 Strategies to Teach Any Subject by Mel Silberman (1996)
- Activities for Learner-Centered Teaching, 2009, Baker College
- popular education concepts and methodologies developed by Paolo Friere
- 15 years of my own classroom experience and experimentation, including my 2012 trainings conducted in Tamilnadu

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Chapter I. Student Centered Learning and Its Challenges

The key goals of student centered learning are to develop critical thinking skills, to master and remember complex information, and to develop professional communication and collaboration skills. Student centered learning includes the following key elements:

- The teacher is a facilitator. Students construct, rather than memorize, knowledge and understanding. Lecture is limited and is frequently interspersed with discussion and other participatory activities, including the use of audio-visual and digital media.
- The student is seen as intelligent, capable and already equipped with a fund of knowledge, discernment and wisdom upon which further learning can be built. Independent thinking is encouraged.
- Learning tends to be non-competitive and collaborative so that students can build knowledge together, develop teamwork and communication skills, and develop collaborative values as well.
- Students actively participate in projects and discussions that build higher-order, critical thinking skills. Students learn how to analyze, compare and contrast, synthesize and produce new understanding.
- Homework is regularly required, and students demonstrate their knowledge and skills through a variety of applied projects and presentations. Exams are only one portion of a student's grade, and include written answers that require higher order thinking. Grades are heavily based on projects and homework. These items are graded using standardized rubrics to avoid subjectivity.
- Students are taught experientially to develop academic and professional skills, including speaking, presenting, using multiple media, planning, organizing, leading, working in teams, and conducting research. Students may take on leadership or peer mentoring roles to help others and to further develop their own leadership skills.
- Topics and activities are relevant to modern life and to the local community, so that students maintain interest, learn application of theory, and build interest in their own communities and future professions.

Student Centered Learning is important, yet implementation can be challenging. Education experts in India as well as the central government have long called for a shift in Indian classroom pedagogy from memorization to learning and the development of critical thinking skills. The primary pedagogy and testing systems of lecture and exams impede India's progress in a global economy that requires students and professionals to be independent, innovative, creative, and good at communicating and working in teams.

The need for this shift is clear. India's " higher educational institutions suffer from large quality variation in so much so that a recent Nasscom-Mackinsey Report (2005) has said that not more than 15% of graduates of general education and 25-30% of Technical Education are fit for employment." (World Bank, 2005) A 2009 survey of 150 companies in India revealed that 64% of the surveyed employers are "somewhat", "not very", or "not at all" satisfied with the quality of engineering graduates' skills. Employers complained that the top skills gaps included reliability, self motivation and willingness to learn, as well job skills, including problem solving, ability to design and conduct analyses, and reading. (FICCI-World Bank employer satisfaction survey, 2009)

Within a standardized system of knowledge acquisition, both students and teachers have little room for creativity. The teacher is the fount of knowledge, imparted through lecture. Independent thinking is not sought or encouraged. When students, especially students from disadvantaged backgrounds and female students, are challenged by teachers to express opinions in the classroom or to complete team projects of their own choosing, they struggle to respond. Women are particularly hampered by gender expectations that train them to be quiet, submissive, and dependent. It can feel like "pulling teeth" to get Indian college students to speak up and express their ideas and thoughts.

Another barrier to student-centered learning is the use of English as the primary language of instruction and learning. Also, the quality of English training at the primary and secondary levels is poor and uneven. Many college students arrive with only rudimentary ability to read, write and speak in English. Indian students, particularly undergraduates, may lack sufficient goal orientation and maturity. Many young people in India are not encouraged to explore and select their own career path. Many students, usually boys, are pushed into engineering. The young student arrives at college without much exploration, plunges immediately into their "chosen" major and begins courses in the subject with little or no understanding of the subject. Many young women get married and do not work outside the home after marriage. Where is the incentive and interest for students to truly learn in the college environment?

India's educational system reflects both ancient and colonial culture. In India, gurus or teachers have always been highly revered and oral teaching is traditional. India is also a status-driven society where children and young adults are taught to follow rules and not to question authority. Being a highly communal culture, Indians tend to favor community (family, caste, religion) over the individual. On top of this ancient culture lies the legacy of several hundred years of British rule. Under the British, education became more available to the masses and British-style education was embedded into the Indian society, polity and economy. However, an essentially Victorian method of teaching and learning still survives in India today.

Faculty who do want to teach in a more student focused way face a number of significant institutional and historical barriers to change. Higher education in India is centrally controlled with a rather rigid examination system. Teachers are not afforded flexibility in how they teach and grade, and because exams are heavily weighted towards memorization, the teacher is forced to cram information into students' heads. Students in turn are accustomed to the exam system. They are not accustomed to take responsibility for their own learning through homework and other projects and may resist changes that require them to essentially work harder and try out new skills.

Given these challenges, it is heartening that many instructors are motivated to learn and practice student-centered teaching techniques. This handbook is designed to help with that mission, no matter what the cultural or institutional barriers may be. In the last chapter of this handbook, there is some discussion about practical steps that faculty and administrators can take to begin implementing a culture shift within their own departments and institutions. Change takes time! However, most faculty who embrace student centered learning find their teaching life to be more exciting, stimulating and satisfying. May this handbook contribute to that higher level of joy in a sometimes frustrating career!

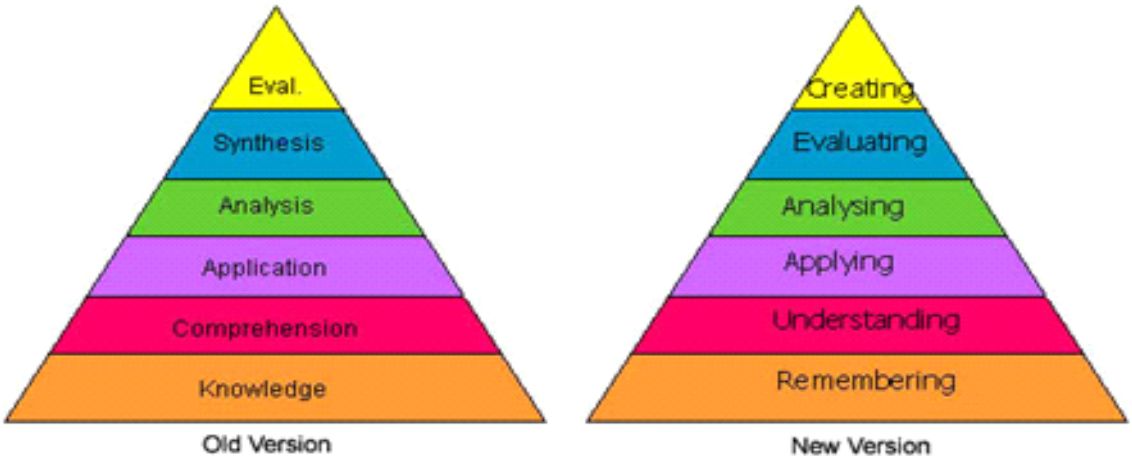
Chapter II Student Centered Learning Theory

Student centered learning theory and practice can be boiled down to four major themes:

> **CRITICAL THINKING**: Strategies must help students develop higher order thinking and analysis skills. These strategies should include **ACTIVE LEARNING.** Teaching should help students actively engage with their material using multiple activity styles, including visual, kinesthetic, aural method, as well as digital methods and resources. SCL strategies should include **RELEVANCE.** Instructors should use materials, topics and methods that are relevant to students' lives, to modern India and to the local community. And classroom activities should be designed to focus on **SKILLS DEVELOPMENT**. These skills may include both academic and professional skills, such as skills in research, writing, public speaking, planning, leadership and teamwork. All of these approaches help to build overall confidence in students, which bolsters both motivation and performance.

CRITICAL THINKING: Critical thinking is a cluster of thinking behaviors and skills that allow students to fully embrace the complexity of a topic and to make use of a full range of analytical skills. (John Holt, l967) Critical thinking is higher order thinking which goes beyond memorization to understanding, application, and other more complex types of analysis and skill. Learning is enhanced when students can state information in their own words, give examples, recognize facts in various circumstances, see connections between information and other ideas or facts, use the information, foresee consequences, state opposites, and compare different sets of facts to draw conclusions. Learning is further enhanced if students can make arguments or solve problems and justify their conclusions with data or processes, demonstrate their learning to others, or teach what they know.

Bloom's taxonomy, including the older and newer versions below, describes the basic process of a student's development towards higher order critical thinking skills. First, students need to remember facts. Then they move to understanding facts. Finally, they learn to apply those facts.



There are a variety of methods for encouraging the development of critical thinking skills in higher education. The following table of generic questions, for example, can help faculty create instructions and activities that help students practice a wide range of tasks that will help develop critical thinking skills.

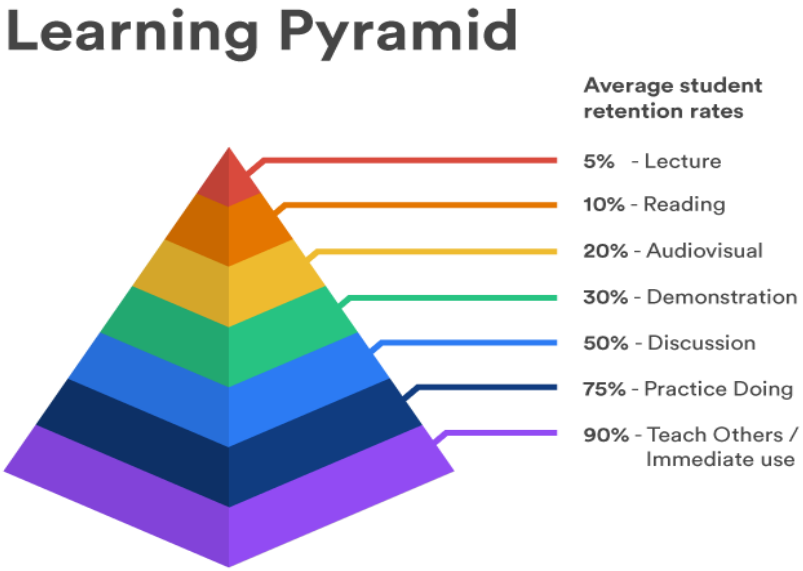
Generic Questions to Stimulate Critical Thinking And Presentation Skills

- Compare … and … with regard to…
- Describe … in your own words.
- Do you agree or disagree with this statement…? What evidence is there to support your answer?
- Explain how...
- Explain why....
- How are … and … similar?
- How could …be used to …?
- How does ... affect...?
- How does … apply to everyday life?
- How does … tie in with what we learned before?
- How does...apply to everyday life?
- Summarize … in your own words.
- What are the implications of...?
- What are the strengths and weaknesses of …?
- What do we already know about...?
- What do you think causes …? Why?
- What does … mean?
- What is … analogous to?
- What is a counter-argument for …?
- What is a new example of …?
- What is another way to look at …?
- What is the best … and why?
- What is the counter argument for...?
- What is the difference between … and …?
- What is the meaning of...?
- What is the nature of …?
- What is the solution to the problem of …?
- What is...analogous to?
- What would happen if …?
- Why is … happening?
- Why is … important?

ACTIVE LEARNING: Active Learning is a close relative of critical thinking. The brain doesn't just collect information, it processes information. Brain researchers have shown that learning includes three significant areas of the body: the cognitive portions of the brain, the older and more primitive parts of the brain that control emotion, and physical movement of the body itself. (Student Engagement Techniques, Elizabeth Barkley, 2010). The brain processes, stores and makes connections among ideas and experiences most effectively through a variety of activities that engage all the senses, emotions and the body, including vision, hearing, touch and movement, reading and writing, emotional engagement, excitement and pleasure, humor, along with the traditional modes of listening and speaking in the classroom.

Active learning appeals to young people today who are accustomed to an increasingly high-speed, stimulating digital world. They respond to variety, action, movement, color, and sound. Students need similar experiences in the classroom. This is not to say that teachers must provide a continuously entertaining atmosphere. Instead, teachers must be knowledgeable about the use of digital media and understand that young people cannot sit for long periods of time without a variety of experiences that engage their senses, their bodies and their brains.

The following "Learning Pyramid" presents the results of an American study testing student knowledge retention following the use of a wide variety of pedagogical techniques. The study included lecture, reading, audio-visual, demonstration, discussion, hands-on doing, and students teaching other students. The results were significant: students retained very little following lectures, and retained significantly more information when they participated in hands-on learning and teaching others.



According to this model, the current Indian system relies too heavily on lecture. Students may be retaining only 5% of material from lecture and 10% from reading. Perhaps some audiovisual methods are used, increasing retention to 20%. However, the student-centered educator must also include

DEMONSTRATION, DISCUSSION AND DOING, which can increase retention to 75%. And when students are able to TEACH OTHERS what they have learned, retention can increase to 100%.

This model is consistent with research on learning styles as well. Typically, students learn in a variety of styles that engage the brain in different ways. These styles include reading and writing, audio and visual methods, and kinesthetic or hands-on methods. For student-centered learning, a multi-modal approach is most useful so that students experience a variety of learning opportunities. American evidence indicates that students PREFER multiple modes of learning: Only 16% of American students prefer reading/writing, compared to 21% of teachers. Only 37% of students prefer one mode, while 43% of teachers prefer one mode. Students are heavily multi-modal (63%) compared to teachers (57%). American educators have been encouraged to modify their teaching methods to meet the needs of their multi-modal students by using a variety of methods, including auditory, visual, and kinesthetic activities.

Indian educators may want to complete a learning styles and a teaching styles inventory for themselves, such as the VARK. These free assessments provide a quick look into one's own learning and teaching styles. Both types of inventories should be completed to review one's own preferences, both as a student and as a teacher. http://vark-learn.com/the-vark-questionnaire/teaching-questionnaire/

Personality styles also affect learning. Students who are natural extroverts tend to speak out in class, dominate group activities, and gain more teacher attention. Extroverts are not more intelligent, but they tend to capture attention. Students who are introverts tend to stay quiet, follow leaders, and can get lost in the classroom. Student centered learning requires that these styles be balanced in a group so that extroverts learn to listen more, and introverts to speak more.

RELEVANCE: The third critical element of student centered learning is relevance, a close cousin to ACTIVE LEARNING. Most people prefer to learn about and discuss questions, problems, and information that are relevant to their lives. This is particularly important for young people, who are still learning about their place in the world. Providing relevance enhances curiosity, motivation and inspiration to learn. Relevance can be added in a variety of ways. These can include field trips on and off campus, guest speakers, campus and community research projects, and frequent reference to relevant topics, events and applications. Using digital media adds relevance.

SKILLS DEVELOPMENT: Another key component of student-centered learning is the development of transferable skills. College is preparation for the real world, including employment. College students need to become confident and articulate, and they need to develop initiation, teamwork and leadership skills in order to be gainfully employed and move up in their careers. Students need the same skills for family, for life, for citizenship.

These skills may seem like a tall order for young people have little to no experience with employment, leadership, or personal autonomy. Young Indian students are very capable, however, of developing these skills quickly using student-centered strategies. They will hesitate at first. Some will giggle and withdraw. Others will be afraid of making mistakes. Some will become more competitive. But even with limited practice, and with lots of encouragement and positive feedback as well as repetition, students quickly flower in both confidence and professional skills.

Chapter III. Basic Strategies for Student Centered Learning

Before launching into specific student-centered learning activities, Indian faculty should first become familiar with some basic overall principles and strategies. The following tips are a good place to start:

- Assist students to access tutoring to improve English language speaking and writing skills
- Teach the basics of group process
- Require that students work in teams, assign roles, observe group process, and self evaluate for projects and assignments
- Require students to speak regularly in front of the class
- Give both individual and team assignments
- Teach the steps of developing, implementing, presenting and evaluating projects
- Require students to write and present project reports in writing, orally and/or in digital format
- Encourage use of a wide variety of presentation skills, including graphical, digital, models, etc.
- Ask confident students to help less confident students develop these skills; Engage talented students as leaders and helpers in the classroom

Engaging Students as Leaders and Helpers in the Classroom

It is common in the West for faculty to use graduate assistants in large courses, who can help with instruction, grading and student appointments. Peer helpers can play a variety of roles, including helping in the classroom, offering informal tutoring or coaching to students, and helping students to plan and present homework projects. This technique is not only helpful for large classes, but supports student centered learning in several ways:

- Peer leaders act as role models for students- their professional behavior can provide positive models for student behavior, and their talent can inspire others. Peers who are known to come from minority or poor backgrounds can be particularly effective.
- Well-trained peer leaders can quickly establish credibility and intimacy with students. With this relationship, they can offer helpful support and guidance with basic skills, such as public speaking or writing, presentation, use of digital media, etc. Faculty can develop their own training program to help these students become effective leaders and role models.
- In large classrooms, peer leaders can take responsibility for facilitation of small group discussions and projects.
- Student helpers may hear information that is helpful to share with instructors about the class process or individual students. They may be able to refer troubled students for help or counseling.
- Peer leaders themselves improve their own professional skills by acting in a para-professional role, thus preparing them for further academic or employment challenges.

MORE STUDENT CENTERED LEARNING STRATEGIES

Classroom set up	Reasoning	Tips for Success
Seat your class in a circle or several circles	Students are more likely to pay attention; set up also encourages participation and removes the teacher from the "expert" position.	Other approaches: use conference tables or move benches to walls so students must face each other
Split large classes into smaller groups and engage student leaders to facilitate small group activities	Large classes inhibit student participation and smaller groups foster discussion and collaboration	Instructor can lecture Briefly and then float among small groups
If possible, offer longer classes	Student centered activities can take more time than traditional lecture classes.	Work with your institution to offer fewer class times with more hours per class
Provide a solid orientation to your teaching strategies and develop class guidelines. (See the orientation activities later in this Handbook)	Students may react negatively at first because SCL requires more of them. It's a big change! You will have to convince them that SCL will be more fun, interesting, and satisfying.	Lead regular discussion in class about how students are responding to these methods
Plan community-building Activities. (See later Activities in this Handbook)	Students who know each other are more likely to learn how to work together without conflict or discrimination.	Interrupt any cliques or factions that form
Lead periodic "fun" activities Especially during long classes	Just like children, adults learn better when they are relaxed and happy. quick activities can boost energy and restore student engagement.	Suggested activities follow in this Handbook
Modify syllabus to award maximum marks for out-of classroom homework; provide clear direction on homework and how points will be counted.	Students need out of class activities to apply theory to practice.	Work with your administrators to emphasize homework more and exams less. Work with your department to sponsor homework competitions.
Allow and encourage use of first languages along with English. Explain difficult concepts in both languages.	Use of first language can be very helpful in grasping higher order concepts.	Work with your institution to provide more tutoring and support for English skills.
Use technology.	Most students have technology skills and interest. Technology can help students to become more engaged in their own presentations.	Work with your institution to help students get access to computer labs

Create and maintain relationships with outside experts in your field who are willing to assist	Students are eager for relevant guest speakers; they want to hear about real world applications. This will increase interest and enthusiasm.	Plan panel discussions so that your guest speakers can interact with each other and you don't have to arrange so many guest sessions!
Locate companies and/or organizations in your community for relevant field trips	Students learn a lot from off-campus tours and presentations. They will be very engaged and remember more of what they have learned due to the variety and stimulation	Have clear guidelines for field trip behavior and expectations. Require that students submit post-trip reports.
Ask students to provide regular feedback about their learning process. Are these activities effective? What is working best and what is least effective?	Students appreciate respect from their instructors. They will provide honest answers that will guide you in planning future activities.	Be prepared to receive both positive and negative feedback. Adjust your strategies as needed.

Brainstorming- a very helpful technique

Brainstorming is frequently used in student centered learning because it puts students at the center, encourages free and creative thinking, and builds student confidence and community. Follow these general guidelines:

- No idea is bad or wrong; no laughing or sarcasm is permitted.
- Students can lead the brainstorming session, including writing on the board
- As the group starts running out of comments, the facilitator should encourage more comments by reading out loud all the ideas literally, then asking "is there anything else?" several times. Often the best ideas come at the end or from the quiet people who have not said anything.
- Notes should be kept in typed form so the results can be used later in future sessions.

Current Events

To ensure relevance of your teaching, you should be well aware of local, national and international news, including news in your field. Make sure you are reading a daily paper and at least one journal in your field. Incorporate current events into classroom discussions, student centered learning activities, and assignments. This information can be used both for instruction, classroom discussion, and assignments. Students can be required, for example, to:

- Read the daily paper and report each week on articles relevant to the course
- Select an article and apply theories learned in the classroom
- Have a debate taking different positions on a news event
- Attend a local cultural event or interview a local business person and present their findings

Using Media

Our students are already quite familiar with modern digital technology. Are we faculty as comfortable with using technology for teaching as students are for learning? It's time to engage students in electronic and digital activities which are relevant, engaging and useful in developing higher order thinking and professional skills. There are innumerable ways to use technology, such as the following:

- Regularly show internet material, including engaging educational films and presentations, in the classroom. This will appeal to visual learning styles and to young people who are already entranced with visual and audio media. These materials may be educational and instructive in themselves, or may become subjects for critical analysis by students. For example, a nature show with a clear message on shrinking wetlands in India and the effect on animals may be instructive in a biology, botany, or environmental awareness class.
- Give students assignments that require using digital media for research. Accompanying these assignments, you will also need to instruct students on intelligent use of Internet resources. Teach them how to evaluate the credibility and currency of sources; how to look for bias; and encourage them to review multiple sources before drawing conclusions on reliability.
- Teach students how to make presentations using digital media. Students love photography, making videos, creating websites, blogging, and creating other online presentations. Give these assignments either to individuals or to groups, with different learning goals. They will develop digital media skills, and if working in groups, develop team work skills. Most importantly, they will improve their ability to analyze and present information in creative ways.
- Have students teach others how to use digital media in your subject area. For example, give them an assignment to teach school children how to create a digital presentation on the environment, or running a business, or another relevant topic to your course.
- Have students create a print newspaper or journal with articles and photos relevant to your topic or course. Small groups or the whole class can create such a product
- Require that students write letters to the editor for both newspapers and journals.

Saving Time

Student Centered Learning does take time! The following general tips can help save time:

- You will learn through experience how long activities take. Carefully plan your class with estimated times. Learn as you go and be flexible.
- For a longer class, prepare an outline with time limits and have a student be your time keeper.
- Always have a simple, easy way to have the class form dyads or groups. Don't let students pick their own partners or groups. You can form groups quickly and with energy by having the students stand in line according to birthdate, first name in alpha order, height, or color of clothing. Pick the quickest method!
- Always put a time limit on discussion, use your watch, give a one minute warning, and then stop the discussion. Stop discussions with an easy method, such as raising your hand and training students to raise their hand and become silent, or a loud bell.

Chapter V: Preparing Students for Student Centered Learning

Indian students need to be prepared for student centered learning. Most students will enjoy these activities, especially the humorous ones! However, student centered learning requires everyone to work harder. Students may complain or be confused by these new expectations. Students will have to learn how to adapt to the following new behaviors:

- More use of discussion, probably in English, in the classroom
- More responsibility and less opportunity to hide or cheat or waste time in the classroom
- More mandatory quiet in the classroom as others speak
- Letting others find their own answers instead of giving them the answers
- Written guidelines to guide classroom behavior
- Less participation by extroverts and more participation by introverts
- Frequent group work and expectations around group work
- More homework and more complex homework
- Having to think harder at a more complex level
- The use of student helpers

Student-centered teaching should be introduced slowly and methodically to new groups of students. Here are some good introductory techniques:

	Have your best students put on a skit related to student centered learning and have the class discuss.
	Talk about the theory and practice of these methods.
	Have the class brainstorm written behavioral guidelines for student-centered learning that are posted in the classroom, and use your own list too. (see Appendix B)
	Show a video on student centered learning (see Appendix A)
	Give a brief lesson on group work as follows: Brainstorm the pros and cons of group work. Have students come up with solutions to the common problems in group work, such as domination, lack of participation, conflict, or scheduling problems. (See appendix for suggested group guidelines.)

STUDENT-TO-STUDENT RELATIONSHIPS

Student centered learning encourages students to get to know each other and to act cooperatively. At the beginning of a class, it's useful to plan activities so students do learn about each other and create a sense of community. Consider conducting "student interviews" to help students get to know each other. Have students interview each other in pairs and introduce each other to the class with simple or more complex questions. If you have a large class, have students introduce each other to smaller groups within the class.

Questions might include the following:

• Easy identity questions (age, home place, no of siblings, religion etc.)
• favorites (favorite color, favorite star, favorite religious song, favorite food etc.)
• special talents as a child; nicknames from family
• how many children they want to have
• the type of work their grandfathers and fathers did; whether their mother worked outside the home, and if so, what was her work

More intimate, relationship-building questions might involve opinions about issues in the community:

- What three strategies would be most effective for reducing poverty in India?
- In what ways is your life better or worse compared to your mother and father's lives?
- What is the most critical human rights issue affecting Tamilnadu today?
- In what ways do Indian films contribute to or cause harm to social welfare?
- What is the most important scientific discovery in the last decade?
- Have cell phones contributed to or damaged the lives of Indian youth?
- If you were the President, what would you do to reduce pollution?
- What are the pros and cons of arranged marriage?

Prepare Students for Teamwork

Students are often unprepared for effective teamwork. Confident students may dominate and passive students remain quiet. Some participants will not pull their weight, and others will be upset. Disagreements can arise about project topics and strategies, but students typically lack the skills to mediate conflict. When students work in groups outside the classroom, scheduling and planning problems can occur.

Instructors should review the basics of teamwork before getting started. It's best to have students brainstorm problems that may arise and share ideas on how to solve them. See Appendix F for a simple handout on group work. The following basic elements are often helpful:

- Require that students select a team leader, secretary, timekeeper, and participation monitor.
- The leader makes sure that the project is completed.
- The secretary records the group's decisions and tasks.
- The timekeeper helps to make meetings and deadlines work.
- The participation monitor watches the group process and makes suggestions for improving participation or resolving conflict.

Name Games and other humorous activities can help to "break the ice" and create connections. These "fun" activities are also helpful to give students a break and increase the sense of energy in the room; these can be used throughout your semester or year. The following table presents a few examples of sometimes-silly games that can help students relax, get to know each other, and develop connections.

ACTIVITIES TO BUILD COMMUNITY OR TAKE BREAKS

Name Game	Stand in a circle; have each student give themselves a double alliterative name (e.g. Jolly Jasmine; Lovely Lalitha; Compassionate Krishna).	Student #1 starts, then Student #2 has to repeat her name and give her own name; Student #3 repeats #1 and #2 and then gives her name; etc. The teacher should place themselves last in the circle so he/she must repeat all the students' names.	Builds community; Students learn names; Laughter and fun.
Name Game	Stand in a circle; have people speak their names in a circle, each following the others by repeating the names given and then their own.	Then ask students to throw a ball back and forth, calling out the name of the person to whom they have thrown the ball.	Builds community; Students learn names; Laughter and fun.
Class Break	Sit in a circle with one chair short. The person who is 'it' calls out characteristics (e.g., everyone wearing purple, everyone who has three brothers, everyone who is wearing a sari, everyone who voted in the election, etc.) If the characteristic applies, students must move to another chair quickly while the "caller" tries to steal a chair.	Students cannot move to the chair right next to them. At Any time, the caller can say "upset the basket" and everyone has to move to a new chair. The action should happen rapidly to create confusion and laughter.	Raises energy; good for long classes or hot classrooms
Class Break	Have students practice creating three animals: elephant, kangaroo and giraffe) using the central figure (trunk, giraffe ears, kangaroo arms and hopping) and the two side figure (flapping ears, long legs sticking down, kangaroo pouch).	Use a unfamiliar language for the three animal words (e.g., elephante, giraffa, kanguro). The person who is it points to a student and calls out the animal name quickly. The person and their two side neighbors must quickly take the appropriate stance or movement for the animal. Anyone who stumbles becomes 'it' The action should happen rapidly to create confusion and laughter.	Raises energy; good for long or hot or cold classrooms!

Chapter V: Student-Centered Learning Activities

Peer Teaching	
Preparation:	A brief written lesson or handout with five basic or simple concepts, each on a separate piece of paper
Activity	Students gather into learning groups of 5-6 people. Teacher assigns each group one concept and makes suggestions on how concepts can be taught. Suggestions should include a variety of appropriate methods, such as lecture, visuals, skits, applications, case studies, etc. The groups then study their concept and plan how to teach it. When ready, the groups teach the whole class, which has been instructed to take notes and ask questions. Teacher corrects and supplements the information as needed. Teacher also follows up with her own presentation, summarizing the same information, preferably in a different way.
Outcome:	Students have just learned five new concepts, taught by other students and reinforced by teacher. All students have learned one of the concepts particularly well. Students have also developed group planning skills.
Variation	Teacher lectures briefly to summarize the information. Then students break into learning and teaching groups and reinforce the teacher's lecture. **Jigsaw Variation for Peer Teaching**: Instead of teams teaching the whole class, one member of each team teaches one member of each of the other teams. After learning the concepts, each student joins a new small group (like a jigsaw puzzle) composed of members of the other four groups. Each member then teaches the theory to the rest of the small group.

Learning How to Listen	
Preparation:	Preparation Prepare a brief lesson with several key points.
Activity	In class, assign the following roles to four teams. Explain that they must listen to the lecture with their roles and duties in mind. Explain duties clearly with examples. • Question Askers ask at least two good questions that summarize • Happy Listeners must explain what was useful and why • Probers describe points that were not clear or still need to be explored • Appliers must come up with at least two examples of applications • Give the lesson. Then have each team discuss their tasks and present their perspectives.
Outcome:	Students develop better listening and teamwork skills while they practice critical listening skills.

Different Ways of Learning	
Preparation:	Preparation: A brief lecture with a handout summarizing important points.
Activity	Divide the class in half, and install one half of the class in another room or location. Give your lecture and have students take notes, while the other part of the class studies the handout and discusses in small groups. Then switch the groups and repeat.
Outcome:	Outcome: The whole class has learned the lesson twice and has learned using various modes.
Variation	If there is time, pair up students, one from each group, and have them summarize to each other what they have learned. Also, have the whole class discuss with you the differences in their learning from the lecture versus the handout and discussion.

Fishbowl	
Preparation:	Preparation: Select three important topics for review or exam
Activity	• Place a small group of up to 5 in the middle of the classroom; direct the rest of the class to sit or stand around the smaller group. • Have one student facilitate and ask one of the questions. Have the group discuss while the larger group listens. • Take a few volunteers from the large group who want to add to the discussion. • Next, move five new students into the central chairs. • Repeat the entire process with the second question. Continue as needed.
Outcome:	The entire class has reviewed three important questions. 15-20 students have had the opportunity discuss the material, and the rest of the class has learned from listening to their peers.

Ask the Panel	
Preparation:	Prepare a new lesson or select previous material to review. Use a video or multi-media presentation if possible.
Activity	1. Select or ask for volunteers to form a 4-6 person panel (if panelists lack confidence or the class will not be sufficiently respectful, ask for volunteers.) 2. Give your lecture or have the class review earlier material. Ask everyone to write down their name and one good question on the material on small slips of paper. A good question cannot be answered with one word or yes/no. 3. Gather all the questions and select at least six good questions, preferably with some variety of approach. Return those six questions to the authors. 4. Seat the panel in front of the class. Explain to the class that this is not an exam or test and that the class is to listen respectfully to all questions and answers. Have the authors ask their questions, one to each panelist. 5. After each panelist answers, lead a class discussion on what was good about the question and about the answer. Discuss with the class why you had them prepare questions.
Outcome:	Material has been reviewed by having to ask questions, which encourages the student to enquire further into the material and to think about application.
Variation	This can be repeated with different material in the same class with a new panel.

Diverse Views	
Preparation:	Prepare a lesson which forces students to choose among alternative answers and then explain their choice. Designate three areas of the room representing those who "agree", those who "disagree", and those who are "not sure" with a sign; alternatively, designate three areas with different content-based answers. (For (e.g., three different numerical answers to the same mathematical problem.)
Activity	6. Discuss with students the pros and cons of always sitting in the same place and with the same students. Then explain this activity. 7. Read a series of statements or solutions for students to examine. If it will take time to locate a solution, only use one or two problems. For each item, students must move to the appropriate area. (It may take time for them to choose their answer and location.) 8. There they must stand and discuss their choice with another student. 9. Ask one student from each of the three areas why they chose their answer. If there is a "correct" answer, call on that group last.
Outcome:	Students get a little movement and variety in physical position. They have to think and make choices, experience diversity in dyad conversations, and learn how to explain their choices.

Mind Map	
Preparation:	Flexible activity for individuals, dyads and small groups; Prepare a brief lecture or presentation; Bring paper and colored pencils or markers; (see the Appendix in this Handbook for sample mind maps)
Activity	• Discuss mind maps with students. Project a video or examples for review. • Give the lecture and ask students to take notes. • Direct students to prepare mind maps summarizing the same information. • Have students share their mind maps in dyads or small groups or have a few volunteers exhibit their mind maps for the whole class.
Outcome:	Students use visual and tactile senses to understand their material, learn how to categorize and order information in ways that will reinforce knowledge or create new understanding; students also learn how to create and explain connections to others.

Interview a Guest	
Preparation:	Schedule a guest speaker on a relevant topic to your course. Ask them to give a very brief presentation and tell them the bulk of the talk will be in question and answer format.
Activity	• Share information with the class about the upcoming speaker and their expertise. • Have students write questions for the speaker on pieces of paper and hand them in. • Select the best 10 questions. When the speaker comes, ask five students to ask the questions, two each. • If there is time, allow other students to ask questions. • Ask the speaker at the end to list any questions that he/she was surprised were not asked or what they wish had been asked. • And then ask the speakers to answer those questions too.
Outcome:	Students have learned from an outside expert and have learned to link questions and answers.

Simple Field Trip	
Preparation:	Plan the field, trip, the teaching plan, and field trip details (logistics, permissions etc.)
Activity	1. Plan a very local field trip, on campus or in the immediate community within walking distance or easy bus ride. The trip should preferably allow for at least 2-3 hours of activity, depending on time and location. 2. Before the trip, tell the class the nature and purpose of the trip. Have the class plan some activities to supplement your activity, as though they were teaching a group of children. Limit the number of activities. 3. Each planned activity must have an introduction with statement of purpose, a coordinator to run the activity, and a discussion leader to lead a post-activity discussion to summarize learning. 4. Give them a list of suggested relevant activities, such as a teaching game, a data collection activity, or competition. 5. After the trip, or in a subsequent class, discuss the learning process.
Outcome:	Students learned content and application during the activities, and learned how to plan, coordinate, work in teams and evaluate projects.
Variation	If you prefer to plan the activities yourself, still involve students in discussion and a summary of learning during or after the field trip.

Stations	
Preparation:	This is a good activity for small and large classes, but requires space for movement. It also takes time and should be used for a longer class period. It may be ideal for science or other classes that require the study of objects, models, or specimens, newspaper articles, etc. See below and prepare exhibits and directions, place at stations, plan the timing of movement and discussion.
Activity	• Divide the class into small groups (preferably no more than 5) and have them move through the stations. Time the movement and have everyone move at the same time. • At each station, provide written directions on what to do. For e.g., the students might have a question that they need to answer in writing on a poster. • Each group should discuss and agree on their contribution before writing it. • After students have seen all the stations, have them move through again and read all the contributions. • Have them place a mark next to the best comment or answer (not their own). • Lead a discussion about the whole activity. Give applause for the group that won the most check marks at each station.
Outcome:	Students learn while moving; work in teams; and digest information in different ways.

Classify	
Preparation:	This activity is good for review of a large section of a course or an entire course in which classification is important; can be done in classroom or as an assignment. Pprepare a large list or set of objects, ideas, facts, or items to be given students (can be projected, given in handouts, etc.); decide on a classification format (a handout to be filled in; or students create their own system on paper etc.)
Activity	Instruct students (individual, dyad or groups) to: a) create their own classification system b) list the items according to classification and c) be prepared to explain or justify their classification system and listings. **Example**: In an art history class, the teacher provided mixed stacks of sample paintings from three different major art eras; students had to place them in stacks based on their similarity; then she had them explain how they classified them; then she followed with a lecture on the three eras. **Example**: zoology professor helped students prepare for a test by giving them a handout with a grid of three mammalian subclasses and another handout with a grid of seven major sub-orders of one subclass. Then she projected numbered slides of animals and had them write the numbers in the appropriate grid box. For the more complex list, she had students in pairs before she gave the correct answers.
Outcome:	Students develop critical thinking and classification skills.

Window Frame	
Preparation:	Prepare a topic for which students will write a very short essay which requires the use of critical thinking skills. Create a Handout following the examples below, which will require students to use your FRAME to create their own content. They will copy your words and then add their own. Specify length of essay to guide their responses.
Activity	Two Examples of Window Frame Handouts: ***Theory X proposes that _____ and is very useful because it offers insights into _____. On the other hand, Theory Y, which proposes _____, does a better job of explaining _____.*** ***The author's main point in this essay is _____. The evidence she provides to support her view is _____. On the other hand, others argue that _____. To support their views, they point out that _____. The issue, then, seems to be whether _____ or _____. My My view is _____. Although I concede that_____, I maintain _____because _____.***

White, Black and Grey	
Preparation:	Prepare a lecture or a reading which contains differing expert opinions and represents a controversy in your discipline. Select text or an article that contains one strong viewpoint, called the White View.
Activity	1. Ask students in pairs or groups to read the text with empathy and agreement in mind. They should look for the best points and list the reasons why the argument is a good one. 2. Have the whole class report and list on the board all these reasons. 3. Next, have them read the text again, this time as the Black View, as one who totally disagrees with the opinion. Have them look for all the holes, weaknesses, and reasons why the view may be wrong, unsubstantiated, or unjustified. Again, have them discuss, list and then report to the whole class. 4. Then have a discussion about the middle area between Black and White: the Grey View, and how to incorporate differing views, create one's own views, and be able to justify them.
Outcome:	Students learn how to analyze an issue from a wide variety of perspectives and develop their own analysis.

Whole Class Debate	
Preparation:	Select a topic that has two or three clear and differing views or positions. Write a one sentence statement that clearly states one of those views. (E.g. scientists are justified in performing animal experiments to develop products that help human beings.")
Activity	• Read the statement and have students move to two or three sides of the room based on whether they agree or disagree. • Have a student who agrees begin the debate. They can only make one point, then they select someone from the opposite side. • The debate continues with brief statements from the opposing sides, each calling on the other. • Variation: have a location for students who are "not sure". Have those students • participate in equal measure, called on by the agree or disagree group. • Another variation: allow students to leave their location and move to another position if their view has changed at the end of the debate.

Two Heads are Better than One	
Preparation:	Prepare a series of problems for students to solve in pairs. If possible, match students who are struggling with students who are doing well- natural peer tutoring occurs.
Activity	Instruct students that they must take turns as "problem solver" and "listener". The problem solver reads the problem and talks out loud as they attempt to solve the problem. The listener's job is to encourage the other student to keep going, to ask questions, but not to offer solutions. The purpose of the activity is not to find the right answer, but to pay attention to problem solving skills. Each person must stay within their role and not give each other the answer.
Outcome	Students have learned to help each other and have acted as a teacher and coach. In the process, they have strengthened analytical and problem solving skills.

Mrs. Mayor's Call to Action	
Preparation:	Bring a stack of newspapers and magazines that contain articles relevant to your course and select a specific of general topic for discussion (e.g. environmental issues; women's issues; economic recession; mental health; recent science discoveries)
Activity	• Divide students into teams and tell them they are advising the first Woman Mayor of your city on serious local issues and concerns. The mayor could be a very progressive, secular, left-leaning leader who cares deeply about the people, or perhaps a conservative Hindu nationalist who has won because of major corporate contributions. They must select an article from the stack and then work as a group to prepare a speech for the Mayor announcing a major new initiative to solve a local problem. • The speech should include a problem statement, background research, causes, data, persuasive language about the need for solutions, and a description of the initiative. • For a more complex activity or an assignment, require that the students also conduct internet research and/or interview a local expert or official on the matter and refer to this additional research in the speech.
Outcome	Students learn about perspective and bias; work in teams; understand the need for data to justify policies; and develop planning and advocacy skills.

Smart Web Research	
Preparation:	Prepare a research topic and select a variety of internet sites. The sites should include reputable, scholarly sites as well as Wikipedia, blogs, and unreliable or biased sites. Also prepare a format for a brief student paper, which includes a listing of the internet sites that were a) reliable and used b) unreliable or biased with explanation of why and c) sites that were not clearly reliable or unreliable.
Activity	• Give a lecture and demonstration on using the internet, covering topics such as reliability, reputation, research validity, and bias. Also discuss plagiarism and citation. • Have students conduct their research and write a brief paper summarizing the results and how they used the internet sites. • This can be made simpler for an in-class group activity by providing a very small research question and a limited number of sites, followed by an oral report by the groups.
Outcome	Students develop better judgment in relying on internet research.

Skits and Demonstrations	
Preparation:	Divide class into groups and give each group a lesson to create or a problem to solve. Keep the issue simple and tell the students to keep it simple.
Activity	Instruct students to have fun, improvise, and plan the activity democratically. Explain that they will have to help lead a discussion after the skit is performed. Provide a time limit and require that each member play a role. Give them 10 minutes to prepare. After each skit, lead or ask students to lead a class discussion asking the following questions: What did you observe? What was the problem or lesson presented? What solutions or answers were presented? Are there other alternatives available? What did you find most effective in this presentation?
Outcome	Students have used a variety of learning styles and skills to analyze and solve problems. They have played the role of teacher. And they have had fun which helps with learning!
Variation	Advanced Skit: A more advanced step is to re-enact the skit, allowing members of the audience to intervene. A member can raise their hand, call out a character's name and then take that student's place on stage. There, they should handle the situation differently. The rest of the actors should respond accordingly, still maintaining their previous mindset, and then another audience member can intervene. The idea is to generate new strategies to cope with difficult situations. Following the end of the re-enacted skit, the facilitator should lead the audience through another debriefing session, asking how this was different and what impact the changed reactions had on the situation.

Journaling	
Preparation:	Ask students to have writing materials available; prepare a handout on journaling
Activity	Ask students to write brief reflections either in class or as an assignment, touching on course topics. Reflections may include how they might apply a theory to "real life" situations; what they have heard or read in media on this topic and their own observations; how they think differently on a topic than when they first started the course; etc. These one-page writings can be read quickly and impressionistically without attention to form, or they can be a regular classroom practice and submitted as a portfolio at the end of the course.
Outcome	Students develop skills in writing, reflection, independence and communication skills.

Pass a Problem	
Preparation	Prepare a problem for students to solve.
Activity	• Divide students into small groups. • Have each group spend up to 10 minutes to brainstorm and write down their solutions to the problem. • Have the groups pass their problem / solution to another group for review and then the second group can add to the original solutions. • Continue until all groups have had a chance to see/solve each problem. • Have the group that generated the problem initially review all solutions and either pick the best one or create a new one that synthesizes two or more of the solutions.
Outcome	Students have worked in groups, used brainstorming skills, shared ideas, and learned how to choose among alternative theories and solutions.

Quiz Show (aka Jeopardy)	
Preparation	Decide what material you want to review and check for student understanding.
Activity	• Assign topics or chapters for several groups to review. Ask them to develop good questions related to this material. Require that they use some of the Generic Questions provided in this Handbook. • Group the questions into categories and assign point values. • Set up the classroom as a quiz show. Divide students into new quiz teams. • Serve as the emcee for a quiz show using the questions provided by students. Award points to the teams that answer the questions correctly.
Outcome	Students have reviewed material using critical thinking skills, increased memory of the material, and worked in teams; the instructor has a good sense of how well the students understand the material before going on to new material.

Rotating Trio	
Preparation	Prepare written questions to cover old or new material.
Implementation:	• Form groups of three or more students. Direct the students to assign numbers to each group member (1, 2, 3, etc.) • Distribute a set of questions for the group to discuss and set a time limit (e.g. 10 minutes) for the discussion • Call time after the discussion dies down or the time limit has been reached. • Direct the #1s to stay put and raise their hands • Direct the #2s to move to the group on their left • Direct the #3s to move to the group on their right • Distribute another (more complex) set of discussion questions building upon the first set for the new group to discuss. • Rotate trios in this manner as many time as desired
Outcome	Students have used discussion and teamwork to analyze and better understand increasingly complex material.

Creating Questions	
Preparation	Select a portion of the course to review.
Activity	• Have students brainstorm possible questions related to that content. • Have students in groups select the 2-3 best questions and explain why each is a good question. Answers must address critical thinking skills.
Outcome	Students develop critical thinking skills by developing good questions. The questions also prepare them for tests and other activities.

Chapter VI Student Centered Evaluation

Two major evaluation questions confront the Indian educator:

- How to objectively evaluate and grade homework outside the exam system, and
- How to obtain a more flexible grading system that allows for more points awarded for projects and homework.

The latter question cannot be addressed in this handbook, but instead but be taken up with college, university and state administrators. For example, Lady Doak College awards "formative" points awarded for the two currently required mid-semester tests; those points could be replaced with "homework" points. Currently, the LDC system only allows for 15% of the final grade to be awarded for assignments, which may not represent a sufficient percentage to give students a real incentive to perform outside of exams.

Exams do allow for analytical answers to questions. However, they only allow for one demonstration of knowledge and skill: the ability to analyze and write. Evaluations of assignments allow faculty to grade for a much broader range of skills, including speaking, planning, organizing, leading, and media and non-traditional types of presentations. Also, these activities will help to improve their written analytical skills on exams!

In the meantime, the following tips can guide the educator in evaluating projects and homework:

1. Tell students orally and in writing how they will be graded
2. Demonstrate how these points will affect their final mark
3. Describe any "extra credit" points that might be awarded for the best projects, or competitions they might enter
4. Describe any other incentives you can offer to get them to do homework and projects (for example, offer written job references for PG students)
5. Always use formal, written rubrics for grading to reduce subjectivity and increase credibility of your grading system; present these clearly in writing to students
6. Consider using peer assessment for projects that will not affect student grades.
7. Look for other ideas using this LINK!

RUBRICS

Student centered learning requires that teachers conduct more complex student evaluation. Students are frequently asked questions that have no right or wrong answer. Instead, the teacher must assess the student's performance and demonstration of a variety of skills, including communication, analysis and other skills. Subjectivity may be involved. A rubric, which is a written standard for grading student work, guides the teacher in her evaluation, informs students how they will be graded, and ensures fairness and consistency in grading.

Rubrics for grading should be:

- Objective and clear to avoid accusations of subjectivity or bias; fair and meaningful
- Contain descriptive standards for failing, passing, good and excellent marks
- Consistently applied
- Sufficiently detailed to guide the student in reaching for excellence

Chapter VII CREATING A STUDENT CENTERED LEARNING CULTURE

Student-Centered Learning helps to address many of challenges and limitations within the classroom. The methodology essentially forces students to speak, to think, to participate, to communicate professionally, and to fully engage in their own learning. It helps students to think independently, work effectively in teams, express their learning in a variety of ways, develop leadership skills, and comprehend and recall the content of their classes with increased agility. SCL methods can help male and female students learn how to interact professionally, can lift self-esteem, inculcate egalitarian values, and perhaps help to produce students who are better prepared to find and maintain a job and do well in a career.

Indian colleges, however, face institutional challenges. Most faculty have been brought up in the traditional system and may not understand the benefits of student centered learning, nor feel motivated to radically change their methods. Colleges themselves may lack the infrastructure or funding to provide faculty with regular professional development opportunities. Student Centered Learning requires a lot of effort, especially when fully implemented. And faculty are already busy! How can they develop new approaches without training, guidance, and free time to develop new curriculum?

In spite of all these challenges, India has burst onto the global stage in the last few decades with a booming economy and mass production of highly skilled engineers and successful corporate leaders. India does have first class universities who do use SCL strategies and encourage creativity, initiative, and critical thinking, and that do motivate students with high standards, good equipment, and opportunity. But India's success in the global economy masks the reality faced by most Indian college students, particularly those from poor and disadvantaged groups: many will not get high paying jobs or fully use their potential. Women students in particular still face powerful gender expectations to not pursue higher levels of academic success nor to work outside the home.

Indian higher education is certainly evolving and changing. Whether these basic infrastructural issues can be resolved is a question! Individual faculty, departments and college leaders must be commended who are taking steps to institute and encourage pedagogical changes within their own classrooms.

Step One: Bring student centered learning to your own classrooms.

Being a Student Centered Educator is a lifelong process! The following tips can help:

• **Take your time and experiment. Pick and choose which activities you use! Make decisions based on preference, suitability, relevance and practicalities.**
• **Evaluate student skills and knowledge before and after the activities.**
• **If your classrooms are too big for many of these activities, seek out smaller classes. If you are unable to move seats in your classrooms to accommodate group work or physical movement, go outside or to a auditorium-style venue.**

• **Try something, and discard it if it seems ineffective or extremely time consuming.**
• **Get student feedback regularly. They will tell you what works and what does not.**
• **ENJOY YOURSELF! You should be just as inspired and excited as your students.**

Step Two: Bring student centered learning methods to colleagues in your own department.

Student Centered Learning is an exciting approach that can help to develop enthusiasm in your department:

• Share your successes and challenges with your colleagues and encourage department heads to offer continual training and support.
• Meet regularly with other Student Centered Instructors to share ideas and strategies.
• Consider a cross-discipline collaborative project to select, train and supervise student peer mentors who can help lead and monitor student-centered activities in various classrooms.

Step Three: Work with your college principal and administrators to bring student centered learning methods to the entire faculty.

Considering the institutional barriers at the college, state and federal levels, a culture shift may seem very difficult. However, college administrators can allow and encourage their own faculty to be more flexible and to encourage a more student-centered pedagogy.

There is a strong foundation upon which to build! Indian students and younger faculty are thirsty for new ways of thinking and learning. They are often enthusiastic, cooperative and willing to be engaged. They are ready for student centered learning, even if they kick and scream at first! Faculty are extremely bright, dedicated people. Many chafe against the old system. Some are pioneers within their own institutions, calling for small practical changes and experimenting with new and unconventional classroom and teaching methods. Faculty should be encouraged to work with their administrators and across colleges to develop a culture of student centered learning, balancing the need for memorization and exam preparation with the call to help students develop creative and critical thinking and professional skills.

Administrators can choose to fund professional development time and training to help their faculty learn SCL skills. Faculty can become trainers themselves, helping to transmit and support a more student-centered campus learning culture. Professional and technical courses already include extensive practical, hands on training, including internships. College and University departments should be encouraged to talk and learn from each other across the humanities, the sciences and technology. There is plenty of existing expertise in India in how to practice student centered teaching.

Appendix A
Student Centered Learning Resources

(General note: for an online search, use key words such as: "student centered learning", "active learning", "critical thinking")

BOOKS

Active Learning: 101 Strategies to Teach Any Subject
Mel Silberman
1996, Allyn and Bacon

Student Engagement Techniques: A Handbook for College Faculty
Elizabeth Barkley
Jossey-Bass, 2010

VIDEOS (note: these are YouTube videos which may become outdated or unavailable)

Participatory Online Learning: http://www.youtube.com/watch?v=yRyPayyUYPE
Active Learning http://www.youtube.com/watch?v=UsDI6hDx5uI
Mel Silberman http://www.youtube.com/watch?v=GQAnIyYLtZk
Agastya Foundation http://www.youtube.com/watch?v=N5p87Y9N6WA&feature=youtu.be
Music to Inspire You and your Students
http://www.youtube.com/watch?v=yfpa9uTWdJE&feature=fvwrel

Student Centered Learning in the Sciences

Undergraduate biology course https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2736024/

SCL in Science and Engineering: http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Student-Centered.html

Teaching in the Sciences: Learner-Centered Approaches, by Acram Taji, CRC Press, 2/14/05.

ISBN 9781560222637 - CAT# HW14548

Learner-Centered Teaching in Engineering and Science

Active Learning Video with Dr Richard Felder

APPENDIX B
Sample Classroom Guidelines

We respect each other by:

- Coming to class & returning from breaks on time; stopping discussion when time is up
- Coming to class prepared & open to learn
- Raising our hand to speak in turn
- Accepting & honoring differences in culture, beliefs, opinions & experiences
- Turning off and not using cell phones or laptop computers in class

We listen with respect by:

- Not interrupting or talking over others
- Not correcting what others say
- Only giving advice when asked
- Not holding side conversations or shuffling
- papers while others are speaking
- Letting others speak for themselves

We speak with respect by:

- Encouraging each other and avoiding judgments
- Speaking for ourselves, not for others
- Keeping comments & ideas focused on the topic
- Talking less if we are really talkative, talking more if we are really quiet
- Not talking about others who are not present

We support each other by:

- Giving positive feedback
- Sharing responsibilities as a team
- Being a good homework buddy
- Asking for staff assistance if we are concerned for another's safety

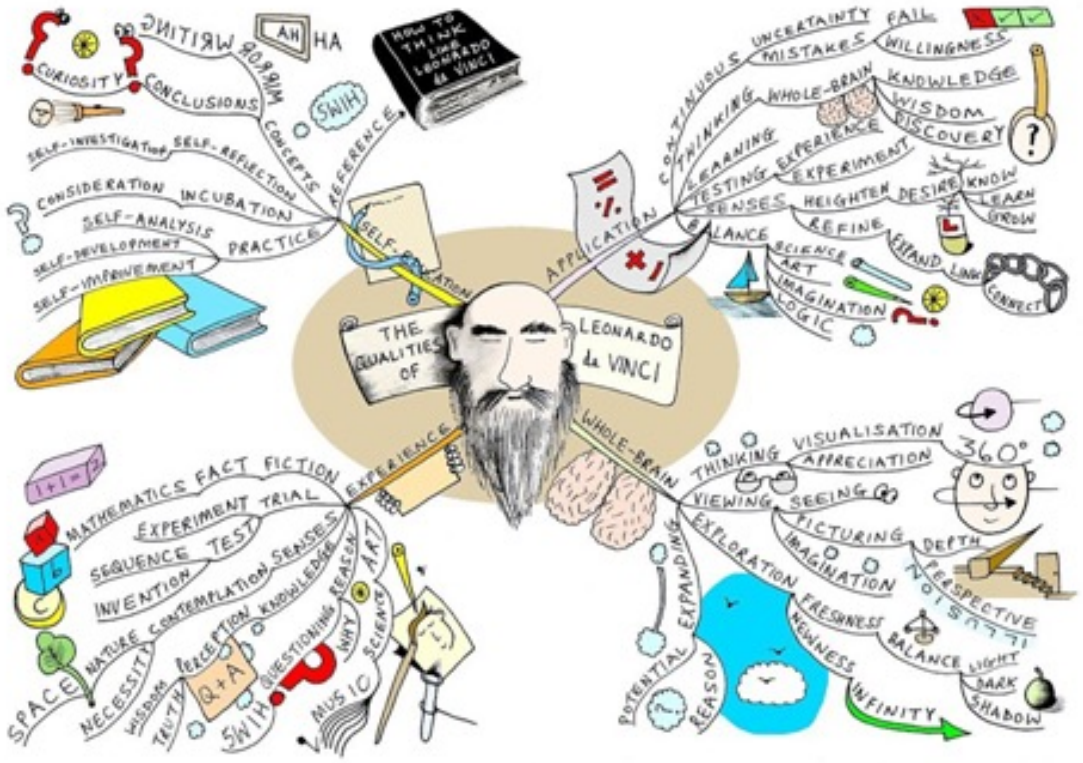
We take responsibility for ourselves by:

- Asking for what we need or want when a problem occurs
- Talking with a helper outside of class when we need extra help
- Speaking directly to anyone with whom we have a concern or conflict

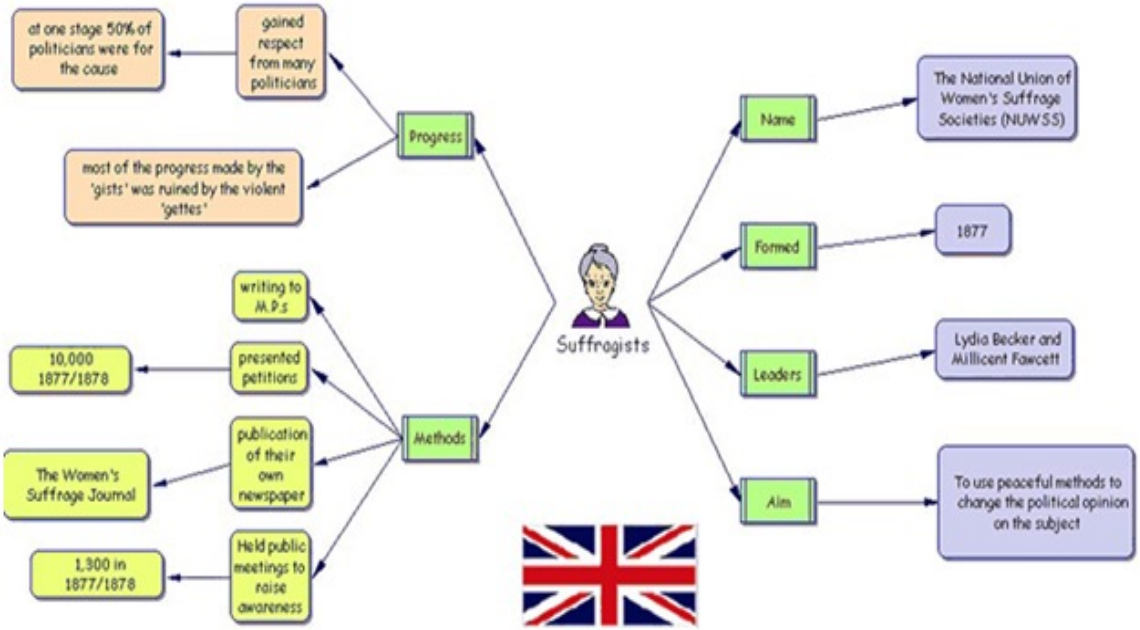
APPENDIX C

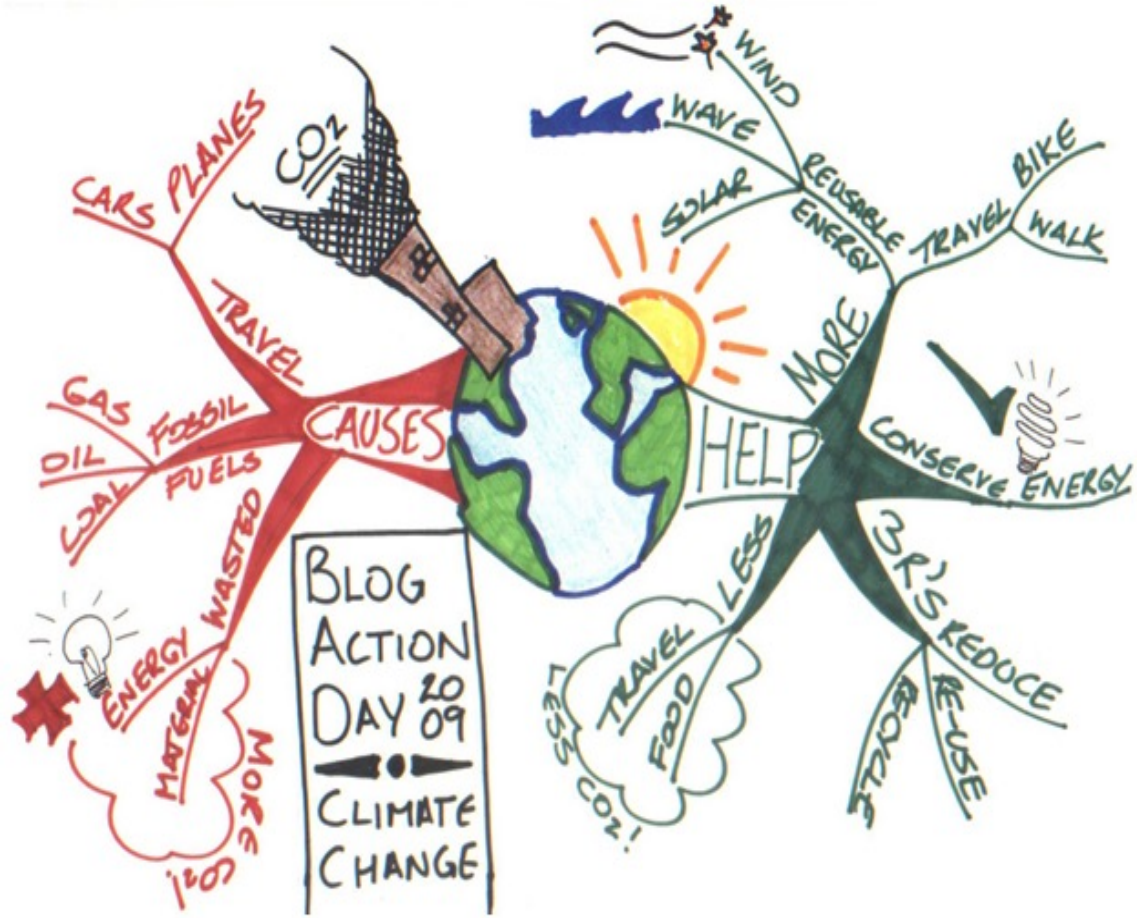
SAMPLE MIND MAPS

Mind maps are a creative tool that students can use to generate ideas, summarize and organize material, and prepare for tests. Mind maps may also be used by instructors to explain and organize material. These maps appeal particularly to students and teachers who have visual learning styles.



© Paul Foreman http://www.mindmapinspiration.com


Suffragists
Progress
gained respect from many politicians
at one stage 50% of politicians were for the cause
most of the progress made by the 'gists' was ruined by the violent 'gettes'
Methods
writing to M.P.s
presented petitions
10,000 1877/1878
publication of their own newspaper
The Women's Suffrage Journal
Held public meetings to raise awareness
1,300 in 1877/1878
Name
The National Union of Women's Suffrage Societies (NUWSS)
Formed
1877
Leaders
Lydia Becker and Millicent Fawcett
Aim
To use peaceful methods to change the political opinion on the subject


CO2
CARS PLANES
TRAVEL
GAS
OIL
COAL
FOSSIL FUELS
CAUSES
ENERGY WASTED
MATERIAL
MORE CO2!
BLOG ACTION DAY 2009
CLIMATE CHANGE
WIND
WAVE
SOLAR
REUSABLE ENERGY
TRAVEL
BIKE
WALK
MORE
HELP
CONSERVE ENERGY
3R'S
REDUCE
RE-USE
RECYCLE
LESS
TRAVEL
FOOD
LESS CO2!

Appendix D

Engaging Student Helpers and Student Leaders

Student helpers should be:

a. Carefully selected; look for talented, outgoing students AND students with diverse backgrounds who can relate to diverse student groups.
b. Provided with a clear job description
c. Given boundaries to ensure that helpers play an appropriate role with students.

Student helpers can provide help in the classroom without significant training if they are assigned simple duties, such as handing out materials, helping organize groups, and working with students one-to-one to help them with assignments.

If helpers are given more responsible or complex tasks, such as English language tutoring, leading group discussions, identifying struggling students, or helping with extra-curricular projects, faculty should:

a. Provide appropriate training which includes training on listening, confidentiality, language tutoring, appropriate boundaries, and other critical skill building
b. Pay helpers if possible
c. Meet with helpers regularly to review classroom and student progress or problems

Indian faculty might consider the following activities to engage students:

a. Engage both UG and PG students as mentors or helpers in both UG and PG courses.
b. Select students with strong English speaking and writing skills as well as critical thinking skills.
c. Select and train a group to help the entire department, using them as consultants on student needs and issues.
d. Meet with helpers regularly to plan, implement and evaluate student centered learning activities.
e. Train a group of helpers to staff a college-wide English tutoring center which provides help with reading, writing and spoken English assignments and test preparation.

Appendix E

Plagiarism

Plagiarism is a common problem when students are not properly advised about prohibitions against plagiarism, and when they lack proper research, writing, paraphrasing and citation skills. Students frequently use the Internet for research and cut and paste materials without evaluating reliability and without citations, presenting the material as if it were their own.

If your college lacks a plagiarism rule or standard, consider the following suggested standard:

1. Students may not copy materials from books, the Internet or other sources without proper citation. Citations should include Source, Author, Date/Issue, Publisher, and pages.
2. Students must use a specific citation style, such as the Modern Language Association citation style http://www.library.cornell.edu/resrch/citmanage/mla
3. Even paraphrased information from other sources requires a citation.
4. Do not present other sources as your own writing without citation. If you do, you are guilty of plagiarism.
5. In this class, students found to be guilty of plagiarism will receive no points for the product or assignment, and will be required to write an essay on plagiarism. The college principal will be notified of the first offense.
6. For a second offense in the same class, the student will be referred to the college principal for appropriate action.

After reviewing your plagiarism policy, train students on how to:

a. use the Internet intelligently (how to evaluate sites for reliability, bias, etc.)
b. always put direct quotes in quotes with proper citation
c. paraphrase effectively, still using citations where attribution is necessary
d. present proper citations
e. locate tutors or mentors who can help them review and correct their research and writing as needed

Appendix F
Working in Groups
A Handout for Students

Don't just work with your friends! College is not the place for factions or rivalries or "cliques". Make sure that everyone's opinions and ideas are respected, and help each other contribute. Pay attention to your group "dynamics", not just the end product. For example, give quiet people a leadership role so they can become more confident. If your group is having problems, discuss them openly.

First Meeting: Introductions, Role Assignments, Communication and Action Plan

Make sure everyone knows each other's names and a little bit abut each other. Agree on a communication method: phone/text/email, then create and share a written (preferably typed) contact list with everyone's phone numbers and / or email.

- Assign roles; this is critical! When members have specific jobs the process works more smoothly. The minimum roles should include:
  2. A group leader or coordinator (job: may include facilitation of all meetings; must include oversight of tasks and final project completion)
  3. A group secretary or recorder (takes notes; preferably sends meeting notes and other important announcements by email or text to all members)
  4. Other optional roles can include timekeeper (keeps track of time during meetings to make sure everything gets done and time is not wasted); or participation monitor (observes group dynamics and points out if there are problems such as lack of participation and suggests solutions)

- Create a written action plan that includes what you are going to do, who is going to do what (delegate clear assignments), and deadlines. Try to assign jobs equally so no one person is carrying a large load.

- Agree on all future meetings (time/date/location) so you don't have to decide later. The secretary should type all the results of this meeting and send to everyone so everyone is clear about the plan.

Future Meetings

1. Take attendance; Create a meeting agenda. Have one person (perhaps the coordinator) facilitate the meeting to ensure that all topics are covered.
2. Have each person report what they done. Agree on your future actions and meetings.
3. Have one member call any missing members to check on their progress, report, ask them to participate and tell them about future plans.

Handling Problems

Make sure you have a leader for all meetings. If members do not attend meetings or perform their tasks, have one member contact them and discuss. If they continue non-participation, proceed with the project. If members disagree about the type of project or activities to be performed, try to reach a compromise. During this discussion, members should respect all ideas and majority should rule. If some members dominate the discussions, or some members are quiet and fail to participate, switch your discussion to dyad and then brainstorm.