Inside...

Develop Soft Skills among Students through Collaborative Learning Techniques

A number of studies have examined the changing nature of work and change in demands placed on workers as a result of the knowledge economy and technological changes. Harvey and Green, 1994 (as cited in Hambur et al, 2002) concluded that both employers and academicians valued the generic skills like: willingness to learn, team work, problem solving and a range of personal attributes including commitment, self-motivation, self-management, adaptability, analytical ability, logical argument etc.

The ever changing impact of technology has given a short shelf life to workers with only hard skills. According to results from The Smyth County Industry Council Workforce Profile (Prescott, 2004), the more valuable employee is one who can grow and learn as the business changes. New skills and combination of skills that integrate technical competence are now required for effective work performance. The Workforce Profile found "soft skills are as important, if not more important, than traditional hard skills to an employer looking to hire – regardless of industry or job type. This could offer a major breakthrough as educators and training providers seek to develop and cluster training courses to fit business and industry needs." Technical education system has to respond to this challenge by producing work force with higher order cognitive skills and learning to learn skills.

The shift that has to take place in the content of teaching is from transmission of specific items of knowledge, which may soon become obsolete, to the emphasis on higher order generic skills and soft skills that are applicable to a broad and largely unforeseen repertoire of task situations at the workplace. The need for developing soft skills among students of technical institutions, as is being emphasized in other countries world over, has been recognized in India also. In a number of technical institutions, efforts like introducing a subject in the course of teaching and/or arranging training programmes for students to develop soft skills are being initiated.
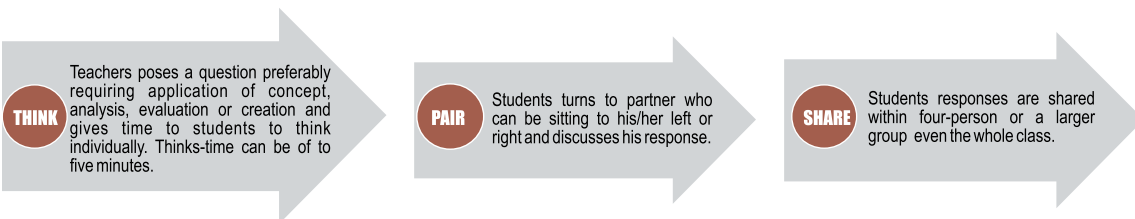
Individual teachers teaching technical subjects can also play a significant role in developing soft skills among students. For that, teachers have to incorporate new methods and techniques for creating conditions conducive for learning for the learners and develop soft skills among students and thus improve the quality of instruction in technical institutions and in turn the quality of product from these institutions.

Collaborative learning (CL) among others is one such method that if incorporated in teaching learning can help in developing soft skills among students of technical institutions. Collaborative learning often involves challenging students with analytical problems which they must solve in teams by obtaining information or utilizing information given to them. Collaborative learning is a type of active learning that takes place in student teams. So, in this method student is not merely the passive learner and so is the teacher not just transmitter of knowledge but is an organizer, facilitator and mediator.

Techniques of Collaborative Learning (CL)

Collaborative learning techniques can take many forms like : Think-Pair–Share, Jigsaw, Numbered heads together, Send a Problem, Stump your partner, Catch-up, Fishbowl debate etc.(Cornell University). Only first two of the above techniques of collaborative learning are briefly discussed here.

I. Think-Pair–Share: In use of this technique following steps are followed

THINK — Teachers poses a question preferably requiring application of concept, analysis, evaluation or creation and gives time to students to think individually. Thinks-time can be of to five minutes.

PAIR — Students turns to partner who can be sitting to his/her left or right and discusses his response.

SHARE — Students responses are shared within four-person or a larger group even the whole class.

Awards received by the Institute Faculty

BHARATMATA AWARD

Indian Institute of Oriental Heritage (An International Institute of Oriental Studies and Research) on 16th August, 2014 during 37th National Seminar and Convocation Ceremony, Kolkata conferred Bharatmata Award on Dr. M.P. Poonia, Director, NITTTR Chandigarh

Dr. BS Pabla, Professor and Head, Information Management and Coordination Department was awarded "Eminent Engineering Personality Award - 2014" by Institution of Engineers(India) , Haryana State Centre at Geeta Institute of Management & Technology Kurukshetra-136 131 (Haryana) on 15th September 2014.

Dr. C Ramakrishna, Professor, Computer Science Department has presented a paper on CC Torus: A New Torus Topology for Interconnection Networks during International Conference on Advanced Computational Technologies and Creative Media (ICACTCM 2014) from 14-15 August, 2014 at Pattaya, Thailand. This paper has won Best Session Paper Award in the above said International Conference.

Admissions in ME /M.Tech Programmes

Sr. No.	Disciplines	No. of Admissions	
		Regular	Modular
1	Engineering Education	-	04
2	Mechanical Engineering (Manufacturing Technology)	24	18
3	Civil Engineering (Construction Technology and Management)	23	12
4	Computer Science and Engineering	27	34
5	Electrical Engineering (Instrumentation and Control)	24	24
6	Electronics and Communication Engineering	16	35

वार्षिक राजभाषा पुरस्कार वितरण समारोह

संस्थान में दिनांक 01 सितम्बर, 2014 से 30 सितम्बर 2014 तक हिन्दी माह मनाने के उपरान्त दिनांक 01.10.2014 को वार्षिक राजभाषा पुरस्कार वितरण समारोह का आयोजन किया गया। हिन्दी माह के दौरान हिन्दी की 10 प्रतियोगिताएं आयोजित की गई और समारोह के दौरान प्रश्न– मंच का आयोजन भी किया गया। निदेशक महोदय ने पुरस्कार विजेताओं को पुरस्कृत किया एवं अपने अध्यक्षीय भाषण में हिन्दी की दिनों दिन बढ़ रही प्रगति की प्रशंसा की।

67th Independence Day, 2014 Celebration at the institute

Flag Hoisting by Dr. M P Poonia, Director

'WORLD DIDAC' INDIA AND ASIAN SUMMIT ON EDUCATION AND SKILLS

To promote and enhance the quality of technical teacher training in India, the institute displayed its programmes and activities in the event dedicated to the Education and Training Sector and the largest event of its kind in the Asia Pacific Region organised by India Didactics Association from 10-12 September, 2014 at New Delhi. The institute also conducted the following workshops during the International Exhibition and Conference:

1. Quality of Instruction
2. Curriculum Development-A Scientific Approach
3. Content Generation and Dissemination in Techno- social Environment.

Visitors from industry and academic institutions of India and Abroad visited the exhibition and took keen interest in the programmes and activities of the institute.

Dr. M.P. Poonia, Director conducting a session during the conference

A view of the stall of the institute

SOLAR PV POWER PLANT

A grid interactive Solar PV Power Plant of 50 kWp capacity has been installed at the institute. This Solar PV Power plant has been installed alongwith its operation and maintenance work for ten years' through Chandigarh Renewal Energy, Science and Technology Promotion Society under the aegis of Department of Science and Technology, Chandigarh. The average energy generation of this Solar PV Plant is about 6300 kwh per month.

Training programmes conducted during July-Sep, 2014

Particulars	Number of Programmes	Number of Participants
Poly technics	44	621
Engineering Colleges	29	231
Induction Training Programmes through ICT	18	1493

POLYTECHNICS

1. Fiber Optic Tests and Measurements,13-17 Oct
2. Software Applications in Civil Engineering,13-17 Oct
3. Social Networking Security,13-17 Oct at Ambedkar Polytechnic, Delhi
4. GSM, 13-17 Oct
5. Repair and Maintenance of Power Supplies and SMPS, 13-17 Oct
6. CNC Machines: Operation and Programming,13-17 Oct
7. Advances in Modern Management Practices, 13-17 Oct at GPW Srinagar
8. Construction and Maintenance of Roads, 27-31 Oct
9. Image Processing using SciLab, 27-31 Oct
10. Computer Aided Circuit Simulation, 27-31 Oct
11. Research Methodology, 27-31 Oct
12. Artificial Neural Networks, 27-31 Oct
13. CAD using Pro-Engineer, 27-31 Oct
14. Electronic Components, PCB Layout, Fabrication and Testing, 27-31 Oct at GGPC Chandigarh
15. Latest Design Techniques in Design of Steel Structures, 27-31 Oct
16. Developing Healthy Work Culture in Technical Institutions, 29-31 Oct
17. Mapping by Total Station, 29-31 Oct
18. Design of RCC Structure, 10-14 Nov
19. 2G to 3G Communication, 10-14 Nov
20. Strategic Planning and Management of Technical Institutions, 10-14 Nov at TTC Jodhpur
21. Personality Development, 10-14 Nov
22. Integrating Generic Skills amongst Students,11-13 Nov at IRDT, Kanpur
23. Modern Construction Materials and Practices, 17-21 Nov
24. New Materials and Techniques in Highway Construction 17-21 Nov at Delhi
25. ASPNet, 17-21 Nov
26. TCP/IP Network, 17-21 Nov
27. Computer Aided Design and Drafting,17-21 Nov
28. Internal Resource Generation – Strategies for Enhancement, 17-21 Nov
29. Capacity Building and Empowerment of Marginalized and Rural Women,17-21 Nov
30. Communication Skills, 24-28 Nov
31. Engineering Materials and NDT, 24-28 Nov
32. Establishment and Management of ED Cells and IIP Cells in Technical Institutions, 08-12 Dec at GPW Dehradun
33. Climate Change, Disaster Management and Sustainable Development,10-14 Dec at TTC Jodhpur / NITTTR CHD
34. Auto CAD, 29 Dec -02 Jan at TTC Jodhpur

ENGINEERING COLLEGES

1. Image Processing using SciLab, 27-31 Oct
2. Research Methodology, 27-31 Oct
3. CAD using Pro-engineer, 27-31 Oct
4. Network Security and Firewalls,10-14 Nov
5. Nanomaterials: Characterization and Applications,10-14 Nov
6. MATLAB/SIMULINK with D Space Interface,10-14 Nov

7. ASP . NET,17-21 Nov
8. Internal Resource Generation – Strategies for Enhancement, 17-21 Nov
9. Modern Construction Materials and Practices, 17-21 Nov
10. Computer Aided Design and Drafting, 17-21 Nov
11. ANN and Optimization Techniques and their Applications, 17-21 Nov
12. Engineering Materials and NDT, 24-28 Nov
13. Laser Science and Technology, 24-28 Nov

TRAINING PROGRAMMES THROUGH ICT FOR POLYTECHNICS AND ENGINEERING COLLEGES

1. Instructional Planning and Delivery (Module II: Instructional Delivery),13-17 Oct
2. Open Source Multimedia Tools, 27-31 Oct
3. Strategic Management and SWOT Analysis for Institution Excellence, 27-31 Oct
4. Instructional Planning and Delivery (Module III: Student Evaluation), 27-31 Oct
5. VLSI System Design, 10-14 Nov
6. Instructional Planning and Delivery (Induction Training Programme),10-14 Nov
7. Wireless Networking,17-21 Nov
8. Microprocessors, Microcontrollers and their Applications, 17-21 Nov
9. Instructional Planning and Delivery (Module III: Student Evaluation), 17-21 Nov
10. Climate Change, Disaster Management and Sustainable Development, 17-21 Nov
11. Auto CAD, 24-28 Nov
12. Cyber Crime and Forensic Tools, 01-05 Dec
13. Instructional Planning and Delivery (Module IV: Communication Skills), 01-05 Dec
14. Instructional Planning and Delivery (Module I: Instructional Planning), 15-19 Dec

1. **National Abilympics for Differently Abled Persons, 03-05 November.**
2. **National Conference on Global Trends in Entrepreneurship, 27-28 November.**
3. **International Conference on Emerging Technologies in Electrical Power Systems 23-24 December.**

Note : The above programmes will be conducted at NITTTR, Chandigarh unless otherwise stated.

For details please visit our institute website : www. nitttrchd.ac.in

ii. Jigsaw

- Teacher divides assignment or problem or topic into sub components
- Class is divided into teams
- Each sub-component is assigned to each team.

Learning Teams:

Expert Teams:
- Student from each learning team volunteer to be become 'experts' on one of the sub-components
- Members of exert teams work together to master the materials assigned to them and also find ways to make other students understand that sub-components

- All experts go back to their parents Learning Teams, where each one of them teach other group members to learn the sub-components learnt by them in the Expert Team.

Learning Teams:

Benefits of Collaborative Learning (CL)

Some of the benefits that will accrue through incorporating collaborative learning techniques are listed below (Panitz and Panitz):
- Develops higher level thinking skills
- Develops interpersonal relationships
- Provides environment for active learning
- Provides environment of real life employment situations
- Develops oral communication skills
- Fosters team building
- Enhances self management skills

All above skills are part of soft skills, required of students of technical institutions to be successful in their workplace.

Challenges for Teachers in incorporating Collaborative Learning (CL) Techniques

In spite of distinct benefits of CL techniques, it will face difficulties in its early stage of implementation. As teachers themselves are not taught by this type of different technique, they may not feel very confident in incorporating CL technique in teaching. There may be some more challenges for teachers to incorporate CL techniques like:
- Fear of loss of classroom control
- Fear of loss of content coverage
- Lack of exposure and formal training in use of such technique
- Lack of awareness with different ways of assessment techniques appropriate for such learning

Collaborating learning techniques if incorporated in teaching can be instrumental in developing employability skills among prospective technocrats. Its successful implementation will require training of teachers through workshops and courses wherein exposure is given by demonstrating specific techniques, warm up techniques etc.

References
Cornell University http://www.cte.cornell.edu/teaching-ideas/engaging-students/collaborative-learning.html Hambur, Sam ; Rowe, Ken; Luc, Le Tu 2002 Graduate Skills Assessment Stage One Validity Study Australian Council for Educational Researchhttp://ww.acer.edu.au/documents/GSA_ValidityStudy.pdf

https://www.uhd.edu/.../Collaborative_Learning_Power_Point_Model.
Prescott Lee Ann et al (2004) Wanted: soft skills in Smyth County News Retrieved April 21, 2008 from www.smythnews.com

Dr. S. P. Bedi,
Professor
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Free Autodesk Software for Educational Institutes/Universities

Free Autodesk Software is available at **Autodesk® AutoCAD®** for the students, educators and schools/educational institutions around the world to help individuals imagine, design, and create a better world.

Welcome

Mrs. Amandeep Kaur
has joined as **Assistant Professor** in Education and Educational Management Department
on 09.07.2014

Articles and news items regarding innovative projects in technical education are invited from teachers, administrators and others.