

**REPORT OF THE
WORKSHOP
ON
*“SHARING EXPERIENCES AND GOOD PRACTICES
ON IMPROVING TRANSITION RATE OF TEQIP- II
INSTITUTIONS”***

**ORGANISED BY
COLLEGE OF ENGINEERING & TECHNOLOGY, BHUBANESWAR**

IN COLLABORATION WITH

SPFU, ODISHA

VENUE :- THE HOTEL, NEW MARRION, BHUBANESWAR

DATE: - THE 27th AUGUST, 2014,

REPORT

A one day workshop on “ sharing experiences and good practices on improving transition rate of students in TEQIP-II institutions” was held in Bhubaneswar on 27th August, 2014 organised by College of Engineering & technology, Bhubaneswar in collaboration with SPFU, Odisha. The workshop was attended by Mr. Toby Linden, the World Bank Member, Prof. A. U. Digraskar, Chief Project Advisor, NPIU, New Delhi, Chairmen and officers of SPFUs of the eastern states, Mentors of the TEQIP programme, viz. Prof. Shiv Prakash, Prof. M. U. Deshpande and Prof. P. K. Das, the TEQIP Co-ordinators and senior faculty members from the TEQIP institutions of these states.

The inaugural session was graced by Mr. P. K .Panda, Director, Technical Education and Training, Odisha, Prof. B. K. Nanda, Vice Chancellor, VSSUT, as Guests of Honour besides Mr. Toby Linden, as Chief Guest, Prof. A. U. Digraskar as Chief Speaker and Prof. S. P. Mohanty, Principal, CET, Bhubanswar. Prof. Mohanty welcomed the guests to the temple city of Bhubaneswar on the occasion and outlined about the scope and structure of the workshop.

Mr. P. K. Panda, Director, Technical Education and Training, Odisha, in his address explained the significance of Transition Rate in Technical Education and mentioned its linkage with teaching as an art and learning (by the students) as a science. The whole process involves intricate psychology with demand on creating motivational environment, which is a challenging task. This can be facilitated by suitably designed Aspiration Tests and Motivation Tests. The faculty has the responsibility of creating a level playing field in the class room, so that the average student can excel, which can improve the transition rate.

Prof. B. K. Nanda, Vice Chancellor, VSSUT, detailed about the broad domain of technical education. He mentioned about the importance of improving Gross Enrolment Ratio to positively influence the transition rate. He emphasized on the need to provide more TEQIP fund and to include more institutions under TEQIP. The quality of imparting education is vital and the generally considered vulnerable subjects like Mechanics, Engineering Physics and Mathematics in the first year need special attention. Also, the +2 education needs qualitative and quantitative improvement to improve the transition rate in first year B. Tech. In addition, steps like periodic updating of syllabus, adequate laboratory facility and autonomy to institutions can help the cause.

Mr. Toby Linden, said that the transition rate is directly linked to students, who should be the focus for better learning to make them successful. Autonomy plays a vital role in this. Open exchange of ideas. Improvement in transition rate is vital since its average is relatively low in India (about 40%). He advised to approach the topics from engineering

point of view with logic/evidence, continuous diagnosis, learning from others and productive deliberations.

Prof. A. U. Digraskar stressed upon the objective of the workshop as improvement in first year transition rate and the workshop is to be conducted in all the zones. Only selected institutions are involved in the workshops to have focused discussion to formulate strategies for improvement and to avoid dilution in large congregations. These workshops are designed in interactive modes with the speakers presenting on topics and others interacting to facilitating learning. Additional series of workshops for other institutions are being planned. Autonomy should be the objective of all performing institutions. The importance of the theme of the workshop is associated with improving learning outcomes and in turn the employability of the graduates. The combination of technical knowledge and skills can help the transition rates. The transition rates in the TEQIP colleges have improved over the years due to the positive impact of the TEQIP programme, as evident from the yearly increase in TR from about 40% average at the beginning of the TEQIP programme in 2010.

Prof. Jibitesh Mishra, Coordinator, SPFU, Odisha proposed a vote of thanks to the speakers and delegates in the inaugural session.

The inaugural session was followed by a key note presentation on “Equity Action Plan” by Prof. A. U. Digraskar, CPA, NPIU, New Delhi. In his talk, he spoke about the key activities under the Finishing School which must include:

- Conduct of Diagnostic test
- Conducting remedial teaching throughout academic sessions for improving transition rate and pass rate of students,
- Conducting specialized soft skills and professional skills development training during semester-breaks and vacations for increasing employability,
- Conducting high intensity training (of at least 4-weeks duration) for development of soft and professional skills in the students that graduate but fail to secure any employment, and
- Organizing campus interviews and making other efforts to secure employment for graduate engineers that complete the training

Then, TEQIP representatives from the 16 TEQIP institutes of eastern India presented their case studies in power point presentation mode on the theme strictly as per the questionnaire format given by the NPIU, New Delhi. Their presentations were critically analyzed by the mentors along with fruitful interactions with other delegates present. Summary of some of their exemplenary presentations institute wise are as follows:

BIT, Mesra

- Soft and technical skills development by finishing school & different societies and clubs of student activity center.
- Improvement of communication skill, Presentation skill, Group Discussion, Confidence building, facing Interview etc.
- Student Counseling / Role of Faculty Advisors
- Teacher's Assessment (Continuous performance evaluation)
- Frequency of existing activities to be increased
- Technical skill development related to industry needs shall be emphasized.
- Poor turn-up of students in remedial classes. Students' feedback regarding remedial classes will be taken to identify the reasons of poor attendance in the remedial classes.
- On the basis of students feedback fresh guidelines will be issued to the faculty members regarding the content other aspects of the class.
- Detailed analysis of students' performance will be made to measure the effect of remedial classes.
- Informal counseling of students by individual teachers
- Students are encouraged to discuss their subject related problems with the teachers & the teachers are asked to ensure and display their availability for students every day (2-3) hours other than class hours.
- Institute offers special summer semester for the students having backlogs. Regular classes are conducted in the special semester during summer vacation.
- Eligible Students are provided with opportunity to appear in campus placement

NIT, Jamshedpur:

- Emphasis on teaching time – Students spend more time with teachers and get more chance to clear their doubts.
- Method of Continuous Evaluation - Students get fair chance to prove themselves. A sudden mishap does not hamper the career of a consistent student.
- Supplementary examination and summer courses as second chance - Students get second chance.

- A new grading system to be introduced: EXPOSED (EXP) grade: for securing 20% - 34% score.
- Supportive lectures beyond work-hours: *Finishing school*: This programme looks into week knowledge areas and arranges lecture on those domains.
- Student Wellness Centre: This programme counsels a student in his/her academic and non-academic issues maintaining confidentiality.

NIT, Raipur:

- Subject teachers interact with the weak students.
- Evaluated answer sheets are shown to the students by the subject teachers before declaration of the results.
- DAC – Departmental Advisory Committee constituted from this semester with a responsibility to evaluate results of every exam and suggest the subject teacher and students accordingly.
- Students are advised through the Student member of DAC.
- Special classes initiated for weak students in weekends with TEQIP support.
- Critical subjects are identified.

Future Plans

- Results of various efforts will be assessed and accordingly steps will be taken.
- More emphasis will be given to critical subjects.
- Efforts will be made to improve the % attendance of students in classes.
- Motivate the disadvantage students through regular interaction and monitoring.

NIT, Durgapur:

- Continuous counselling
- Remedial Classes
- If required, additional laboratory sessions are provided
- Motivation towards study
- Remedial classes improve the subject knowledge. Students perform better in classes and in semester examinations.
- Different programmes on communication skill, soft skill, personality development benefit the students.
- To increase number of remedial classes on subject domain Lecture programmes for communication skill, soft skill and personality development will be organized more in number.
- Frequent counselling and motivating the students
- Emphasizing on regular assignments

- Lecture programmes inviting experts from industry /academia will be organized more in number
- Emphasizing on visit to industry

NIT, Agartala:

- Well Equipped Digital Library and Computer Aided Classrooms
- Regular visits of Expert
- Participation in Short Term Courses
- Participation in Virtual Lectures delivered from other Institutes
- Regular Monitoring of Weaker Students through Continuous Evaluation Programmes(CES)
- Communication and Personality Development Classes
- Extra Curricular Activities
- Special Supplementary Examinations
- Faculty Advisors per three students
- Field Tours
- Psychological Counselling of Each Students
- Regular Yoga classes are conducted in the Campus

Lessons Learned

- Special Classes and Make Up Examinations help in increasing the transition rate
- Regular Evaluation Schemes yield better marks and also reduces exam related stress
- Field Tours helps in better visualization and understanding of concepts
- Regular Health Checkups and Psychological Counselling of students ensures increase in performance efficiency of the student.

VSSUT, Burla:

- Basic constraint is lack of adaptation to changing environment & lack of home amenities
- Communication Skill in English
- Poor Financial Background

INTERVENTIONS

- Remedial class for weaker students in a small group
- Concurrent examinations

- Personal care by tutorial class
- For better result in examination extra doubt discussion is provided
- Physical support by the physician
- Motivational & Inspirational talks by experts from various fields

FUTURE PLANS

- Identified Weaker Students are motivated in forthcoming semesters
- Teachers' quality improvement: participation in international conferences & workshops, etc.
- Online course material ,online test , teaching pedagogy
- Participation of students in learning process through difficult teaching methodology

CET, Bhubaneswar

How weaker students are identified?

- Students , who score in Class tests less than 12 out of 30 marks (Two class tests of 15 marks each) in a subject are identified as weak students in that subjects.
- Students who have failed in one or more subjects in the semester examinations are also identified as weak student in the respective subjects.
- We also identify through various diagnostic tests conducted at different dept. level. (objective/multiple choice type on line test in our central computer laboratory)
- Generally it is observed that academic performance of reserved categories is poor (below pass mark) and are considered to be weaker student.

How is the transition rate calculated?

- Ratio of students passed in one attempt in all the subjects in a particular semester(1st year to final/4th year) to total no. of students appeared. As per the academic rules of BPUT , students scoring less than 4.5 CGPA are not allowed to get admitted in next year.
- Showed a detailed tabular analysis of transition rate for all the 8 Engg. Branches (Civil, Mechanical, Electrical, Instrumentation & Electronics, CSE, IT, Biotechnology, Textile Engg.) from 2009-10 admission batch to 2013-14 admission batch having over all 92%.

How the progress of student is tracked?

- On the basis of their performances in repeat class test and from the results of University semester examination available at examination section of college.
- Through various faculty advisors of the concerned year (Branch wise) who all keep track of development of failed students in Class test and University Exam. / Semester Exam. and do counseling.

Key constraints faced by weaker students/those that drop out or do not pass exams.

- Lack of subject understanding
- Poor communication skill.
- Lagging in fundamental concepts
- Poor attendance in the classes.
- Lack of motivation/interest in subject.

% increase in transition rate

- The % increase in transition rate has increased from an average 30% to 35 %.

Improvements in skills and knowledge

- We conduct regular seminars, invited speakers from IITs/NIT/Industries, soft skill program, in-house training programmes in some selected advanced areas, remedial coaching classes, finishing schools, campus connect programme, QEEE live classes, etc. and found to have some impact on students specially failed students. These are conducted beyond the college hour.

Types of interventions conducted

- Finishing Schools, remedial classes for weaker students have been conducted in all Departments.
- CET has already installed NPTEL study material of 3TB obtained from IISc., Bangalore (Video and Text files) at Central Computer Laboratory. Students are using this facility through Wi-Fi Campus.
- GATE/IES coaching classes, EDP classes are being conducted regularly.
- Faculty advisors (one for 15 students of a Semester) & HODs play key role towards development of weaker students.

- Each teacher mentions his/her free period in a day for interaction with the students.
- One academic day in a week is kept in time table for HR classes, field visit, survey and interaction.
- Suggestion box in each Department exists.
- Group mails of students is used for assignment and doubt clearing.
- Regular seminar presentation for soft skill and technical knowledge improvement.

Lessons learned, future plans and areas for improvement

Lessons learned

- Observed more no. of students having back papers in certain subjects in 1st year like Basic Electronics, Basic Electrical, Programme in 'C', Engineering mechanics.
- Observed more % of failure amongst students of reserved categories, poor educational background and having poor communication skill.
- Observed students spending more times in preparation for placement in software line through campus selection instead of concentrating on studies on core branch subjects .

Future Plans

- Faculty vacancy to be filled up with top priority.
- Some relaxation in academic credits in terms of research project / Industry based project to explore innovation among students.
- Fully residential campus environment.
- Central computer lab. and library should have more access time.
- Incentive to faculty members and students for innovative work.
- Students are to be encouraged towards research publications.
- More remedial classes in some critical subjects.

Any other best practices can be shared

- Students' Feedback system has improved the quality.
- Language Lab. has improved the communication and presentation skill amongst the students.
- Promotion of student activity groups like technology clubs, robotic society, energy clubs, etc.
- Extra co-curricular activities/programmes like; debate, poster printing competition, etc. were arranged for the students.

- Teachers performance is being regularly appraised by the students and the shortcomings/weaknesses pointed out by the students are taken care of through guidance and counselling by the Head of Departments/Head of Institution.
- Emphasising on exposures of the students to industrial practices and solution of industrial problems for creating their interests as well as improving their skill in core field through Industry – Interaction cell established at the Institute level. Curricula of the respective branch of Engineering & Technology should be designed accordingly.
- More emphasis is to be given on R & D activities and innovative project to enhance the skill of the students. One separate R & D laboratory with sophisticated equipment should be set up in each Department

After the presentations by the institutes, Prof. A. U. Digraskar, Mr. Toby Linden and three mentors presented their valuable views and improved qualitative suggestions on the workshop and the future plans as follows:

Finally, Prof. P.K.Patra, TEQIP Co-ordinator of CET, Bhubanswar, summarized the proceedings of the workshop and presented the vote of thanks on behalf of the organizers.

The salient features of the workshop are:

- 1. Weaker students be identified based on their class test performance and through a diagnostic test in all the subjects from the 1st year/1st semester itself and be monitored continuously for academic improvement.***
- 2. Transition rate be calculated by the ratio of students passed in one attempt in all the subjects in a particular semester (1st year to final/4th year) to total no. of students appeared.***
- 3. Faculty advisors should play an important role for proper mentoring academic weak students. HOD and Head of the institution must supervise the process.***
- 4. Repeat class test/examination be practiced for better improvement & encouragement of academic weak students.***
- 5. Faculty members of all the TEQIP –II institutions must avail the pedagogical training through the respective mentoring IITs only in technical subjects and management training by the allotted IIMs.***
- 6. Audio/video class/smart class/live classes be practiced through e-content of various study material like NPTEL, QEEE, etc.***
- 7. All classes must be conducted in an interactive mode.***
- 8. The remaining TEQIP institutions that have not joined yet must join QEEE programme immediately.***

9. ***Finishing Schools and remedial classes for weaker students is to be increased.***
10. ***Regular student seminars, invited speakers from IITs / Industries must be conducted.***
11. ***Soft skill development program for students is to be made mandatory.***
12. ***Students' feedback system in each subject be followed.***
13. ***Teachers' academic performance be regularly monitored by the Head of the institution.***
14. ***Students must be exposed to industrial applications /needs through project work.***
15. ***R &D activities of students are to be explored.***









