

TEQIP-III  
Awareness Workshop

(AKU, Patna)

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J.N.Jha

Principal, MIT

Muzaffarpur

Email: [jagadanand@gmail.com](mailto:jagadanand@gmail.com)

# National Knowledge Commission Report

- *“Most Engineering Graduates do not possess the skills needed to compete in the economy and Industries have been facing a skill deficit”*

## *Employability*

- 62% Graduate require training to be eligible for any job in IT sector
- 4.2% Graduates are employable of IT Product (Hardware) job
- 23 % Graduates are employable in IT Sector
- 10-13% Graduates from core Engineering are employable
- *Equity Distribution*
  - Delhi- 48% to Assam- 9% & Urban- 30% to Rural- 10%

# NKC Report..... Cont.

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- ***Accreditation***

- 62% university and 90% Colleges are below averages (NAAC)
- Less than 10% Engineering Programmes are accredited (NBA)

- ***Research***

- Low Citation Index –  $\frac{1}{2}$  of the International Average

- ***Faculty Shortage***

- More than 50% positions are vacant ( Particularly in Senior Position)

# Major Reforms Suggested by NKC

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- *Curriculum Reform*
- *Promote Interdisciplinary Engineering*
- *Synergy between Education and Research*
- *Focus on PG and Research in Engineering*
- *Smaller Universities/ Academic and Administrative Autonomy of Institution*
- *Differential Pay Package to Reward Performance*

# Strategy

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- *Shift from input centric to learner centric (Outcome Based Learning)*
- *Synergy between teaching and Research (Promotion of Innovation/Research)*
- *Development towards Globalization/Internationalization*
- *Networking between Academic/Research Institution and Industry*
- *Development of Faculty and Institutional Autonomy*
- *Scaling up capacity in existing institution rather than adding new institution*
- *Use of ICT and Link of National Institute (Library) with State Institute*
- *Linking of funding with outcomes*
- *Greater Flexibility provided for implementing agencies*

# Biggest Challenge to Technical Education

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- *How to Balance Rigorous Academic Training of an Engineer versus Preparing him for Industry Readiness*

# Technical Education Quality Improvement Programme: Background

- ***Revamping of Technician Education System (1991-2001-Financed by world bank)***

- To make it demand driven with relevant courses in new and emerging technologies
- Adequate infrastructure resources
- Effective teaching learning process
- Competent Faculty

No. of state and UT covered	Total no. of polytechnics covered	No. of Polytechnics covered in Bihar	Outcome of the Project
25	552	25	Helped in strengthening and upgrading the system

# Technical Education Quality Improvement Programme: Present Status

TEQIP Phase	Period	No. of States Covered	No. of Institution covered	No. of Institution covered in Bihar	Outcome
TEQIP -I	2003-2009	13	127	Nil	---
TEQIP - II	2009-2017	23	191	02	Project Performance - Unsatisfactory
TEQIP - III	2017- 2020	24	1.1-79 (LIS) 1.3-62 ATU- 14 Twinning Arrangement-70	07	Project Performance - Ongoing



## Objective of TEQIP-III

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- *Strengthening Institutions to produce high quality Engineers for better Employability*
- *Scaling-up Postgraduate Education and demand-driven Research & Development and Innovation*
- *Establishing Centers of Excellence for focused thematic research*
- *Training of Faculty for effective Teaching*
- *Enhancing Institutional and System Management effectiveness*
- *Capacity Building to Strengthen Management*

# TEQIP-III: New Interventions in the Project

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- *Quality and equity in focus states*
- *Inclusion of Affiliating Technical Universities*
- *Institutional reforms through AICTE, NBA*
- *Student Learning Assessment*
- *Twinning arrangements between well performing institutions of TEQIP-I & II from non focus states and institutions of focus states*
- *Funding to institutions will be based on Disbursement Linked Indicators (DLIs)*
- *Funds will be transferred directly through DBT (Integrated web based system)*

# TEQIP-III: AICTE Mandate Compulsory

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- ***Mandatory Induction Training***
- ***Curriculum Revision:*** AICTE Model Curriculum;
- ***Industry Consultation Committee*** (ICC) for examining existing curriculum and making changes every year
- ***Mandatory internship*** (4 to 8) weeks in industry for each UG students
- ***Industry Readiness:*** To impart technical and soft skills required for industry;
- Promoting ***Innovation/Start-up:*** Formation of club, participation in Hackathon
- ***Refresher Course for Teachers:*** Through SWAYAM portal; participation of **50% faculty is mandatory**
- ***Exam Reforms:*** Examination shall **test understanding of the concept and skills** rather than subject knowledge

# TEQIP-III: Suggested Activity for the Project

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- *Procurement of Goods*
- *Improvement in teaching, learning and research competence*
  - Improve student learning
  - Student employability
  - Increasing faculty productivity and motivation
  - Establishing Twinning System
- *Incremental Operating Cost*

# TEQIP-III: Funding for Key Activities

Key Activities	Head	Institution: 1.1		ATU	
		%age	Cost	%age	Cost
<b><i>Procurement of Goods</i></b> (equipment, furniture, books LRs, software and minor) and minor civil works for improvement in teaching, training and learning facilities	Procurement	60	6 crore	40	8 crore
<b><i>Improvement in Teaching, Learning and Research competence</i></b>	Academic	30	3 crore	50	10 crore
<b><i>Incremental Operating Cost</i></b>	IOC	10	1 crore	10	2 crore
Total		100	10 crore	100	20 crore

# TEQIP-III: Permitted activities under Procurement

Suggested Activity	Permitted
<p><b><i>Procurement of goods</i></b> (equipment, furniture, books &amp; learning resources, software and minor items) and civil works for improvement in teaching, training and learning facilities</p>	<ul style="list-style-type: none"><li>• <b><i>Equipment and furniture :</i></b><ul style="list-style-type: none"><li>➤ Modernizing and strengthening of existing laboratories, workshops, computer centre, library and, supporting departments</li><li>➤ Modernizing classrooms and smart classrooms</li><li>➤ Video Conference Facility</li><li>➤ Course specific software</li><li>➤ ICT enable learning and related software and hardware</li><li>➤ Procurement of computers, peripherals and furniture</li><li>➤ Language laboratory</li></ul></li><li>• <b><i>Modernization and strengthening of libraries</i></b><ul style="list-style-type: none"><li>➤ Procurement of learning resources (print / digital books and journals)</li><li>➤ Books &amp; learning resources</li><li>➤ Digitization of library, e-books</li><li>➤ Membership of INDEST-AICTE etc.</li><li>➤ Setting up of Swayam Prabha channels</li></ul></li><li>• <b><i>Civil works</i></b><ul style="list-style-type: none"><li>➤ Refurbishment, repair works, extension of existing academic buildings</li><li>➤ Reducing environment degradation</li></ul></li></ul>

# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

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Improve Student Learning	Permitted
Faculty training	<ul style="list-style-type: none"><li>• <b><i>Qualification Up-gradation (Full time/Part time within/outside parent Institution)</i></b><ul style="list-style-type: none"><li>➤ Fees/Registration Fees for course work</li><li>➤ Use of Research Facilities</li><li>➤ Consumables</li><li>➤ Expenses towards thesis printing and Publication of thesis based research papers</li></ul></li></ul>

# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Improve Student Learning	Permitted
<i>Faculty training</i>	<ul style="list-style-type: none"><li>• <b><i>Enhancing Knowledge and Research Competence</i></b><ul style="list-style-type: none"><li>➤ Undertaking Training in Subject Knowledge (Course Fees, Travel/Boarding and Lodging etc)</li><li>➤ Participation of faculty in Seminar, Conferences, Workshop and continuing Education Programmes (Reg. Fees, Travel/Boarding and Lodging , Sundry expenses/ allowances)</li><li>➤ Management development Training of Senior Faculty/Officials</li><li>➤ Organising Subject Areas Training Programmes, pedagogical trainings, Workshops, Seminars, Conferences and Continuing Education Programme (CEP)</li><li>✓ Hospitality/Venue and Logistic/Printing of Training Materials, Proceedings/ Honorarium and TA,DA of Resource Person</li></ul></li></ul>



# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Improve Student Learning	Permitted
<i>Staff Training:</i> <ul style="list-style-type: none"><li>➤ <i>Technical Staff</i></li><li>➤ <i>Administrative Staff</i></li></ul>	<ul style="list-style-type: none"><li>• Qualification Up-gradation</li><li>• Subject up-gradation</li><li>• Training in respective functional areas</li></ul>

# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Improve Student Learning	Permitted
<i>Enhancement of Research and Development Innovation</i>	<ul style="list-style-type: none"><li>➤ Research assistance to full time Doctoral students</li><li>➤ Attending Workshop/National and International Conferences</li><li>➤ Institutional Membership</li><li>➤ Expenses on testing of samples of R &amp; D Projects</li><li>➤ Seed money for Start -up</li></ul>

# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Improve Student Learning	Permitted
<i>Improving transition rates</i> of all categories of students and <i>improving non-cognitive skills</i> of students	<ul style="list-style-type: none"><li>➤ Diagnosing Student Weaknesses and Continuous Tracking of Performance</li><li>➤ Appointing Faculty Advisers for Students</li><li>➤ Timing of Remedial Courses and Repeat Exams and Bridge courses</li><li>➤ Honorarium to faculty and staff for taking Induction programme/Bridge courses/ Remedial teaching classes/ skill development training</li><li>➤ Transportation Charges of students visit</li><li>➤ Honorarium, TA/DA to outside expert for specialized training in soft components</li><li>➤ GATE Specialized training and GATE Registration Fees (Final year Students)</li><li>➤ Honorarium, TA/DA to outside expert for specialized training in Finishing school</li><li>➤ Consultancy services procured for technical assistance related to knowledge/ skill enhancement for weak students and establishing a Finishing school</li></ul>

# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Improve Student Learning	Permitted
<i>Academic Reforms</i>	<ul style="list-style-type: none"><li>• <b>Curricular Reforms</b></li><li>• <b>NBA Accreditation and Autonomy</b></li><li>• <b>Improved Student Performance Evaluation</b></li><li>• <b>Performance appraisal of faculty by students</b></li><li>• <b>Faculty incentive for Continuing Education (CE), Consultancy/R&amp;D</b></li><li>• <b>Digital Learning courses including Moocs/Swayam</b></li></ul>

# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Improve Student Learning	Permitted
<i>Non Academic Reforms</i>	<ul style="list-style-type: none"><li>• Exercise of autonomies-- Academic, Administrative, Managerial and Financial</li><li>• Establishment of Sustainability Fund (Corpus Fund, Faculty Development Fund, Equipment Replacement Fund and Maintenance Fund)</li><li>• Generation, retention and utilization of revenue generated through variety of activities</li><li>• Filling-up existing teaching and staff vacancies</li><li>• Delegation of decision-making powers to senior institutional functionaries with accountability</li></ul>

# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Students Employability	Permitted
<i>Increasing Interaction with the Industry</i>	<ul style="list-style-type: none"><li>• <i>To impart technical and soft skills training for making students industry ready</i><ul style="list-style-type: none"><li>➤ Organise Short Term Training Programme in Collaboration with Industry (Enhance Managerial skills, Entrepreneurial skill, Leadership skill, Communication skill etc.)</li><li>➤ Industry participation for the benefit of the institutions (Curriculum development /student assessment/ Expert lecture)</li><li>➤ 03 Mandatory Internship for all UG student each spanning 4-8 weeks (Travel/Boarding /Lodging/Sundry expenses as approved by BOG)</li><li>➤ Transportation Charges for Industry visit</li></ul></li></ul>

# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Students Employability	Permitted
<i>Student career counselling and placement</i>	<ul style="list-style-type: none"><li>• <b>Inviting Industry for campus Interview (Expenditure towards hospitality)</b></li><li>• <b>Tutoring by Industry Experts to prepare students for Job interviews (On &amp; off campus)</b><ul style="list-style-type: none"><li>➤ career planning</li><li>➤ preparation for selection tests,</li><li>➤ summer placement,</li><li>➤ internship and</li><li>➤ final placements</li></ul></li></ul>

# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Increasing faculty productivity and motivation	Permitted
<b><i>Sponsored research, consultancy and other IRG activities</i></b>	<ul style="list-style-type: none"><li>➤ Securing Sponsored Projects and Consultancy assignments</li><li>➤ Publication of research papers (Referred journals)</li><li>➤ Patenting of research products</li><li>➤ Commercialization of research products</li><li>➤ Inviting Experts for participation in R&amp;D activities/Expert lectures</li><li>➤ Organise Conferences on R&amp;D topics/themes</li><li>➤ Developing research interest among UG/PG students for industry oriented R&amp;D projects</li><li>➤ Seed grant for research to faculty to strengthen research culture</li><li>➤ Appointment of retired teachers (IIT/NIT/Reputed institution) as Senior Research Advisor for enhancement of R&amp;D activities</li></ul>



# Improvement in teaching, learning and research competence: Permitted activities under Improve Student Learning

Establishing Twinning System	Permitted
<i>Activities proposed in IDP, twinning agreement, implementing AICTE measures or any activity deemed appropriate and mutually agreed</i>	<ul style="list-style-type: none"><li>• <b>Twining will focus on the following:</b><ul style="list-style-type: none"><li>➤ knowledge transfer,</li><li>➤ exchange of experience,</li><li>➤ optimizing the use of resources and</li><li>➤ developing long-term strategic partnerships</li></ul></li></ul>

# Incremental Operating Cost (IOC)

IOC	Permitted
<i>IOC</i>	<ul style="list-style-type: none"><li>• <b>BOG and other Meetings</b></li><li>• <b>TA/DA for Faculty/Staff attending Workshop/Meeting/Training by World bank/NPIU/SPIU</b></li><li>• <b>Student Training material/other consumables</b></li><li>• <b>Hiring of vehicle for project related works</b></li><li>• <b>Hiring Technical Services</b></li><li>✓ Academic development/Process- Performance audit,</li><li>✓ Mentoring</li><li>✓ External Financial Audit</li><li>• <b>Salaries for full time contract staff in TEQIP cell</b></li></ul>

# Disbursement-Linked Targets

Disbursement-Linked Indicators	Targets to be Achieved in TY-2018 (July 2017-June 2018)	Targets to be Achieved in TY-2019 (July 2018-June 2019)	Targets to be Achieved in TY-2020 (July 2019-June 2020)
<b>DLI#1</b> Number of undergraduate (UG) programs offered in Participating Institutes in Focus States that are NBA accredited	At least 40% programs accredited	At least 45% programs accredited	At least 66% programs accredited or for which accreditation has been applied for.

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Disbursement-Linked Indicators	Targets to be Achieved in TY-2018 (July 2017-June 2018)	Targets to be Achieved in TY-2019 (July 2018-June 2019)	Targets to be Achieved in TY-2020 (July 2019-June 2020)
<b>DLI# 2</b> Percentage of Participating Institutes in Focus States with UGC autonomy	At least 48%	At least 55%	At least 66%

# Disbursement-Linked Targets

Disbursement-Linked Indicators	Targets to be Achieved in TY-2018 (July 2017-June 2018)	Targets to be Achieved in TY-2019 (July 2018-June 2019)	Targets to be Achieved in TY-2020 (July 2019-June 2020)
<b>DLI #3</b> Percentage of students in the final year of UG program from Participating Institutes in Focus States who achieved the qualifying score in the GATE exam	At least 15%	At least 20%	At least 25%

# Disbursement-Linked Targets

Disbursement-Linked Indicators	Targets to be Achieved in TY-2018 (July 2017-June 2018)	Targets to be Achieved in TY-2019 (July 2018-June 2019)	Targets to be Achieved in TY-2020 (July 2019-June 2020)
<b>DLI #4</b> Development and implementation of GATE as a mandatory exit examination for students of engineering colleges	AICTE passes an order requiring all final year UG students in AICTE-recognized engineering institutes to take GATE	At least 60% of Participating Institutes assist at least 70% of their graduating students in preparing for the GATE	At least 90% Participating Institutes assist at least 75% of their graduating students in preparing for the GATE

## Suggestions: Internal Academic Reform: Teqip and Non-Teqip Institutions (Random Thoughts)

Activity	Measures
<b><i>Monitoring and Evaluation of Academic/other Activity</i></b>	<ul style="list-style-type: none"><li>➤ Regular inspection of Class Room and Laboratories</li><li>➤ Proper conduct of class and Class test</li><li>➤ Maintaining Students Performance Record</li><li>➤ Students guidance and support service in academic matters (Concept of Advisors)</li><li>➤ Monitoring Faculty Performance</li><li>➤ College/Students News Letter (e-form)</li><li>➤ Promotions of NCC/ NSS</li><li>➤ Students Chapter of Professional Bodies</li><li>➤ Recognition (Award/Honours /Prizes) to faculty for technical contribution</li><li>➤ Inculcate the culture against Plagiarism and Piracy in the campus</li><li>➤ Regular updating of College website</li></ul>

## Suggestions: Internal Academic Reform: TEQIP and Non-TEQIP Institutions (Random Thoughts)

Activity	Measures
<p><i>Improving Academic Performance of Weak Students</i></p> <p>✓ <i>Weak Students ?</i></p> <p>➤ <i>Reason?</i></p>	<ul style="list-style-type: none"> <li>✓ Extra year to complete the course</li> <li>✓ Fail to secure employment at the end of degree programme (Inadequate skill)</li> <li>✓ Weak Students are not invariably from disadvantage social group</li> <li>➤ Lack of self confidence/Distraction</li> <li>➤ Poor communication</li> <li>➤ Poor participation in class room and other academic activities</li> <li>➤ <b><i>Poor Teaching/Improper sequencing of curricula</i></b></li> <li>➤ Inadequate exposure of students to real world situation (such as Industrial visit)</li> <li>➤ Inadequacy of discussion on performance counselling (No mechanism for proper feedback to the students)</li> <li>➤ Timing of Repeat Examination and Remedial Classes</li> <li>➤ <b><i>Tracking Students performance and attendance (Co-relation)</i></b></li> </ul>



## Suggestions: Internal Academic Reform: TEQIP and Non-TEQIP Institutions (Random Thoughts)

Activity	Measures
<p><i>Improving Academic Performance of Weak Students</i></p> <p>➤ <i>Improving Class Room practice</i></p>	<ul style="list-style-type: none"> <li>➤ Start teaching with some familiar material/topic and gradually moving to a new or difficult topic</li> <li>➤ Explain the relevance of topic to real world/industry</li> <li>➤ Explain difficult concepts by giving practical examples</li> <li>➤ Move around the class room and interact with the student while solving problems</li> <li>➤ Use Chalk and Board (Encourages active learning) along with teaching aid (PPT and Videos)</li> <li>➤ Speak clearly and loudly</li> <li>➤ Uploading answer of Midterm question paper on college/department website</li> <li>➤ Give feedback to students on their performance and how to improve</li> </ul> <p style="text-align: center;"><i>(Weak students rarely get constructive feedback to improve academic performance)</i></p>

## Suggestions: Internal Academic Reform: TEQIP and Non-TEQIP Institutions (Random Thoughts)

Activity	Measures
<i>Improving Academic Performance of Weak Students</i> ✓ <i>Improving Students participation in Class Room (Active Learning)</i>	<ul style="list-style-type: none"><li>✓ Ask students question at the beginning of each class about the previous lesson/class</li><li>✓ Ask the students what they have understood after 20-30 minutes</li><li>✓ Involve the students in solving a problem</li><li>✓ Encourage the students to ask a question</li><li>✓ Move the backbencher to the front</li><li>✓ Undertake continuous assessment</li><li>✓ Divide the students in group and ask them to present seminar</li></ul>

## Suggestions: Internal Academic Reform: TEQIP and Non-TEQIP Institutions (Random Thoughts)

Activity	Measures
<p><b><i>Improving Academic Performance of Weak Students</i></b></p> <p>➤ <b><i>Improving Teacher Effectiveness</i></b></p>	<ul style="list-style-type: none"><li>➤ Fostering positive behavior in teachers</li><li>➤ Participating in Peer teaching</li><li>➤ Faculty Appraisal system</li><li>✓ Improving students score</li><li>✓ Development of e-enabling courses (Manuals/e-books)</li><li>✓ Helping to improve/create teaching facilities (Laboratories/Library)</li><li>✓ Helping students in training and placement</li><li>✓ Teaching new courses</li><li>✓ Helping department to become Centre of Excellence</li><li>➤ Updating domain knowledge and training in pedagogy</li><li>➤ Inclusion of students in assessment</li><li>➤ Development of learning objectives and outcomes</li></ul>

## Deliverables : TEQIP- III Project Institutions (Focused State)

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- Increase in the average score of students in technical and critical thinking skills (SLA tests)
- Increase in %age of NBA accredited programs including UGC autonomous status
- Increase in transition rate of UG students from 1<sup>st</sup> year to 2<sup>nd</sup> year and increase in percentage of PhD students
- Percentage of students from traditionally disadvantaged groups in total enrolment
- Percentage of sanctioned faculty positions (regular or contract faculty)
- Number of faculty trained in subject domain, pedagogy or management
- Percentage of externally funded research/development projects and consultancies in total revenue
- Student, Staff, Faculty and employer Satisfaction Survey
- Board of Governors meeting at least 4 times every calendar and uploading of minutes of all meetings in public domain

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- *Thanks for Patient Listening.....*
  - *Any question please ?*