Camu

4 ESSENTIAL QUESTIONS TO JUMPSTART YOUR DIGITAL TRANSFORMATION

Read on to know the answer and how Unified Academic Processes can redefine the core of Higher education

Unified Academic Processes for Higher Education

"Nowadays, we attempt to educate 21st Century learners with a 20th Century curriculum, taught in a 19th Century institution".

This illuminating quote by Grasso and Burkins (2010) perfectly encapsulates Dr. Thiruvengadam perspectives on the higher educational landscape in India, specifically with regards to engineering sciences and the growing mismatch between academic programmes and organisational requirements.

On October 17th 2020, Dr. Thiruvengadam spoke at Camu's webinar titled, "Unified Academic Processes for Higher Education", where he touched upon the core purpose of Engineering Education, followed by disciplines and tactics to enhance institutional success by enabling optimal student learning within the given resources, time-frame and funding. This comes at a time when the environment is heavily influenced by initiatives from the National Education Policy (NEP) 2020 and the All India Council for Technical Education (AICTE) of Government of India. Amidst these key reforms, cultural and demographic changes, along with technological education disrupters, society continues to foray in new directions.

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According to Dr. Thiruvengadam, the first step in transforming engineering education is for academicians to ask themselves the following crucial questions:

1 What type of institution do we want to be and what are the major transformations institution will face in 2030?

2 What type of students do we want to educate and what are the major changes students will face in 2030?

3 Which academic processes would help to sustain the preparation of the future engineers who can solve human centered complex engineering problems in an ethical manner?

4 What is the added value our institution can deliver in terms of educational content and societal &enterprise context?

In answering these essential questions, academicians will be able to take definitive steps towards developing powerful curriculum, delivering purposeful content, and designing proficient assessments that will aid in stimulating cognitive, affective and sensory domains within learners. **The motivation is to build knowledge, skills and attitudes that will simplify training and experience, and eventually lead to competencies required for independent practices in professional roles. Simply put, moulding students for real world challenges and future oriented job profiles.**

The question arises, how do institutions unify their departments and processes to imbibe these vital features and enable pre-determined learning outcomes within students?

Graduate attributes comprise of a diverse set of traits - Engineering Knowledge, Problem Analysis, Design/Development of Solutions, Investigations of Complex Engineering Problems, Modern Tool Usage, The Engineer and Society, Environment and Sustainability, Ethics, Individual and Teamwork, Communication, Project Management and Finance, Life Long Learning. When put together, these characteristics create well-rounded individuals who are equipped to deal with a dynamic, global world.

Dr. Thiruvengadam states that graduate attributes should align with course outcomes and programme outcomes respectively, thus bridging the gap between theory and application. While course outcomes address specific competencies such as written and verbal communication skills, programme outcomes tackle broader aspects like global mobility and employability in core industries.

The question arises, how do institutions unify their departments and academic processes to imbibe these vital features and enable pre-determined course outcomes within students? **What teaching and learning methods need to be amplified? Which disciplines need to be redesigned and transferred online?** Dr. Thiruvengadam introduces the crux of the topic, Components of Academic Process, to shed light on this seemingly monumental task.

An institution is made up of the following academic processes:

1 **Institutional Academic Policy/Strategy** – Benchmarking, regulations, curriculum design, course design, board of studies, academic council

2 **Automation Process** – Choice Based Credit System, Outcome Based Education, Data Analytics, Development of Online Courses

3 **Infrastructure Management** - Creation of Smart Classrooms, Makerspace, Teaching Learning Centre

4 **Learner Support System** - Support for various types of Learners, Remedial Measures

5 **Course Management** - Course Plan and Implementation, Active Learning, Syllabus Coverage, Tutorials, Student Engagement

6 **Faculty Competence** – Pedagogical Training Programmes, Online Certification, Practical – Technical Staff Competence, Faculty Conclave, Engineering Education Research

7 **Assessment** - Quality of Assignments/Tutorials/Test/Exam, Result Analytics, Tools for Affective and Psychomotor Domains, Rubrics

8 **Continual Improvement** - Feedback from Students, Faculty, Employers, Parents, Alumni, Action Taken Report, Impact Evidence

When leveraged collectively, these components contribute to the smooth functioning of a higher education institution. But it's imperative for management to make certain that each criterion works together. For instance, online courses may be built to perfection, but if faculty and students are unable to adapt to a virtual landscape, the innovation becomes futile. Similarly, the curriculum may have been designed to foster interactive learning, but if the smart classrooms are not compatible with new technology, learning is halted.

Dr. Thiruvengadam reiterates on the concept of establishing and initiating best practices to mitigate any risks. These encompass Education Management, Research Management, Faculty Management, and governance of UG and PG Programmes respectively. By placing emphasis on aspects such as human centric teaching, innovative classroom culture, balanced workloads, and continuous feedback, the educational environment is steered towards maximum productivity and minimal wastage.

Ultimately, the goal is to empower students to meet social and industrial needs, inspire faculty to educate as well as innovate, and encourage institutions to benchmark and share outstanding practices in the engineering education space.