

Dynamic Seek and Release Model for Self-Learning based Assessment

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Abstract: Engineering education has become a main attraction, contributing to the global industry revolution and in particular to Indian economy. The exponential growth in technical education has, however, not translated into any significant growth in the number of quality graduates acceptable to industry, due to insufficient availability of qualified faculty, teaching methodology, evaluation techniques and processes. Increasing autonomous institutions and an introduction of a buzz word 'Self learning (SL)', in its infancy stage in autonomous institution under Vishveshwaraya Technological University (VTU) and its impact on quality is a major matter of concern. Author of this paper propose an induction of 'self-learning' approach for autonomous Institutions, which allows everyone who wish to practice self-learning subjecting them to controlled scrutiny by Department Under Graduate Cell (DUGC), an academic body at the department level responsible for all academic affairs of an autonomous Institution. It also ensures to keep off those faculties from practicing 'self-learning', who have not fully understood this mechanism.

Keywords: TEQIP, Self-Learning, DUGC

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1. Introduction.

Introduction of World Bank project “Technical Quality Improvement Programme (TEQIP)” forced State Government and hence Universities to give autonomous state to many Engineering colleges.

Are we ready for the autonomous status? Is yet million dollar questions unanswered or not fully correctly answered. The buzz word 'Self-Learning' is the power behind teaching learning process of any autonomous institution. However, without being understanding semantics of self-learning and its reality, Institutions are heading towards its implementation is the major matter of concern.

2. Proposed Model.

Increasing deep concern about the quality of technical education in India, particularly for autonomous Institution, motivated the author of this paper to propose innovative workflow for self-learning to ensure quality engineering education. Few 'as it is' citations of major matter of concern as reported in the reference paper [2] are listed below.

Matter of Concern -1: The Kothari's commission cautioned that the only an autonomous institution, free from regimentation of ideas and pressure of party or power politics, can pursue truth fearlessly and buildup in its teachers and students, habits of independent thinking, and a spirit of enquiry unfettered by the limitations and prejudices of the near and the

immediate which is so essential for the development of the free society.

Matter of Concern -2: The report of the knowledge commission states that autonomy of the university is eroded by interventions from government and intrusions from political processes.

Matter of Concern-3: Many students passing out from Institutions without obtaining right kind of skill they really need to work in a real-world environment.

Matter of Concern-4: Drastic variations in Teaching methodology, Learning contents, Quality of question papers and Assessment process leading to entrenchment of student's lack of ability to examine and understand real world, thereby making students not ready for the Industry requirements.

Matter of Concern-5: Lopsided emphasis on evaluation of students through examinations.

Matter of Concern-6: Methods of teaching and evaluation used are not conducive to improving the ability of students for abstract thinking.

Matter of Concern-7: All investment on the Institution, and all appointments and service conditions and, to considerable extents, most decisions on admissions of students in the management quota have been under the control of family trusts or societies. The principal and other academic staff members have been mostly excluded from these processes and have been asked to mind only the requirements of the universities in-terms of syllabus and examinations.

Matter of Concern-8: Allegation on many societies running Technical Institution is that, sources of Institutional funds are either unaccounted wealth from business or political enterprise or from capitation fees charged or from unexplained fees charged to students. The funds are not properly used for infrastructure and faculty development.

Matter of Concern-9: Considerable misuse of the provisions for Deemed University status. Behavior of many private universities of admitting students five to six times more than their capacity without increasing their infrastructure and faculty strength. Conducting classes and laboratories in strange hours like factory production operation. The students who paid huge fees feeling cheated.

Matter of Concern-10: Credibility of Institutions because of granting of degrees at any level, including PhDs for prices.

Matter of Concern-11: Nonexistent of stringent evaluation procedure for governance structure of autonomous Institution where teachers frame his/her course and assess students the way he/she likes. Interference from various vested interests, in functioning and priorities of the Institutions come in many different forms and intensities. It touches all aspect of higher education and involves improper admissions of students, pressure in selection of teachers, students' assessment and award of degrees, manipulation in selection of senior functionaries and deans, purchase of equipment and allotment of construction contracts.

Matter of Concern-12: Slippery path of establishing minimum standards of quality.

A well designed regulatory mechanism for introduction of self-learning is necessary rather blind introduction. Controlled self-learning promotes high degree of professionalism in bringing quality in technical education. The proposed approach of self-learning by the author has following objectives, scope and working.

Objectives:

Introducing 'Self Learning' component in the curriculum to facilitate Independent Learning capability of students.

Improving Quality of students so that they are acceptable in the Industry.

Preventing blind introduction of 'Self Learning'.

Incrementally and dynamically allowing 'Self Learning' in curriculum without losing quality focus.

Scope: Recently introduced autonomous Institution coming under TEQIP.

Work Flow: To meet the objectives stated, the workflow shown in figure-1 is proposed. Suggested marks distribution for the subject with L(Lecture)-T(Tutorial)-P(Practical)-SL(Self Learning) of 2-2-0-4 hours per week resulting in to 2-1-1 credits i.e. total of 4 credits has examination and marks weight as shown in the table-1.

Suggested Activities:

Following are the suggested activities for self-learning but not limited to the one listed below.

Learning Software tools/ simulators and its application to real problems leading to :

- Conceptualization of solution space, Requirement specification.
- Modeling/Design
- Auto code generation.
- Design of test specification.
- Testing of systems.
- Cost estimation, scheduling.
- Studying existing system and mapping to its correct design
- Studying existing system and report creation on possible flaws and corrective design
- Development/ fabrication of system usable in the organization and report creation.

Suggested Deliverables and Assessment: Course teacher must publish the entire schedule and mode of evaluation duly approved by concerned DUGC, before the semester begins

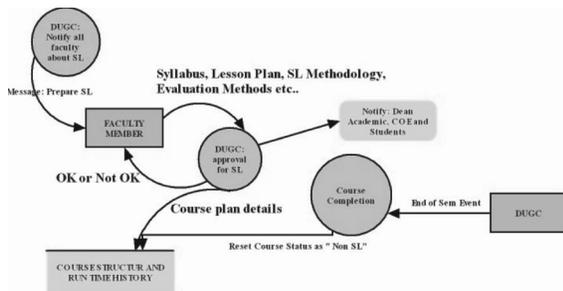


Figure-1: Flow Diagram for self-learning

All self-learning components must have report submission by the students and is to be assessed by course teacher through personal interaction during formal presentation of the work by the students.

It is appreciated, if third party is also involved in

Table-1

Self-Learning Based Assessment of Course	Non SelfLearning Based Assessment of Course
Internal examination-1 : 25 marks.	Internal examination -1 : 20 marks.
Internal examination-2 : 25 marks.	Internal examination -2 : 20 marks.
Make up Internal examination: 25 marks.	Make up Internal examination: 20 marks.
Self-Study assessment : 25 marks	Course Teachers' assessment : 10 marks
Final Internal Marks = 50 (Average of best two of the three IAs plus Self-Study Assessment)	Final Internal Marks = 50 (sum of best two of the three IAs plus Course Teachers' assessment)
End semester examination out of 100 reduced to 50.	
Final grading based on end semester examination (50 marks) plus Internal Marks (50 Marks)	

assessment by the course teacher. DUGC may evaluate each case by case and suggest the panel if required.

3. Conclusions

Rigorous checks on Institution to maintain minimum and sufficient standard in-terms of infrastructure ,qualified faculty members and quality of teaching and learning process is mandatory to achieve quality of engineering education. Blind introduction of self-learning without proper mindset of the faculty members ends in disaster.

On the other hand autonomous status without self-learning component does not make any sense. A controlled approach of introducing self-learning initially may be best approach when we are not clear of its end result. Later it can take its free form of understanding.

Acknowledgement

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References

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- [4] Notification from VTU, VTU/Aca/2011-12/A11/13916 dated 8th March 2012.