

Validating Attainment of Outcomes Through Exit Surveys - A Case Study

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Abstract: Engineering education has a major share in today's career opportunities for the students, contributing to the global industry revolution and in particular to Indian economy. This drastic growth in technical education is not producing at the same rate the quality graduates acceptable to industry, due to insufficient availability of qualified faculty, teaching methodology, evaluation techniques and processes. Mushrooming autonomous institutions are yet another possibilities for quality vulnerability for lack standardization and local understanding of various governance strategies for quality and process followed. Feedback and exit surveys plays an important role in governance. Current practice of faculty feedback by students do not represent the students' learning rather it speaks about faculty attributes focusing more on teaching methodology. Hence there is a need to focus on students' learning levels as a major component in feedback and exit surveys. Author of this paper propose a strategy as a case study on the use of exit surveys and its importance in governing quality of engineering education focusing on students' learning levels in outcome based learning environment (OBE).

Keywords: TEQIP, OBE, NBA, Exit Survey, Outcomes.

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1. Introduction.

The major concern in today's engineering education is employability i.e. making the students industry ready.

Increasing deep concern about the quality of technical education in India, particularly for autonomous institutions are listed below [2].

Matter of Concern -1: The Kothari's commission cautioned that, only an autonomous institution, free from regimentation of ideas and pressure of party or power politics, can pursue truth fearlessly and build up 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 improve 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.

National Board of Accreditation has become the permanent signatory member of the Washington Accord on 13th June 2014 and putting all its educational Institutes under Outcome Based Education (OBE) paradigm classified as Tier-I and Tier-II. Tier-I focuses the self-governed organizations whereas Tier-II focuses on university affiliated Institutions.

Outcome-based education (OBE) is an educational theory focusing on following core principles [3]:

1. All students should emerge from the system as genuinely successful learners.
2. All students can learn and succeed, but not on the same day in the same way.
3. Successful learning promotes even more successful learning.
4. Stating clearly the competence and performance of learners in terms of observable and measurable outcomes that are essential to carry out the role effectively by learners.
5. Incorporating active action oriented words that reflect critical or higher order thinking into learning outcome statements.
6. Defining the style of teaching and assessment by teachers to help the students to achieve the specified outcomes.
7. Focusing on WHAT is to be learned and WHETHER it is learned well or not?
8. Viewing curriculum, instruction, and assessment as flexible and alterable means for accomplishing clearly defined learning "ends".
9. Encouraging the teachers to explore better ways of designing and delivering instruction, especially in light of differences in student learning rates and styles.
10. Using pencil grading rather than pen grading i.e. opportunity for students to truly catch up and erase the records of earlier mistakes.

1. Proposed Model.

Most of the engineering colleges follow the OBE process as a part of accreditation activity and are as listed below.

Preparation of Vision, Mission and Strategic plan for the Institution involving all stakeholders.

Preparation of Vision, Mission and Strategic plan for the program in line with the Institutional definitions and statements, involving all stakeholders.

Preparation of the Program Educational Objectives. Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing their students.

Preparation of Program Outcomes. Program Outcomes are narrower statements that describe what students are expected to know and be able to do upon the graduation. These relate to the skills, knowledge, and behavior that students acquire in their matriculation through the program.

Preparation of Course Outcomes for each course and hence the curriculum. Course Outcomes are narrower statements that describe what students are expected to know, and be able to do at the end of each course. These relate to the skills, knowledge, and behavior that students acquire in their matriculation through the courses.

Planning teaching learning process to comply with the defined course outcome and measurement of the attainments for each outcome and thus for each course.

Developing an action plan to improve the attainment levels. This is a continuous process and improvement is to be audited by the Internal Quality Assurance and Control (IQAC) cell.

There are two ways of measurement of outcomes. First one is through various assessment methods like examinations, quizzes etc. and is referred as direct method another one is an indirect method through exit surveys.

Feedback and exit surveys, as a part of indirect measurement of outcomes plays an important role in governance of the program. Current practice of

faculty feedback by students do not represent the students' learning, rather it speaks about faculty attributes focusing more on teaching methodology.

Hence there is a need to focus on students' learning levels as a major component in feedback and exit surveys. Further exit surveys are planned at the end of the program i.e. usually once in 4 years and is usually at the end of the program. This frequency is too low and the duration gap is too large to bring changes in the ambiance. Exit surveys must focus more on the opinions of the students about their learning levels.

This is to be used as a validation tool for the direct assessment rather than weighted part of actual

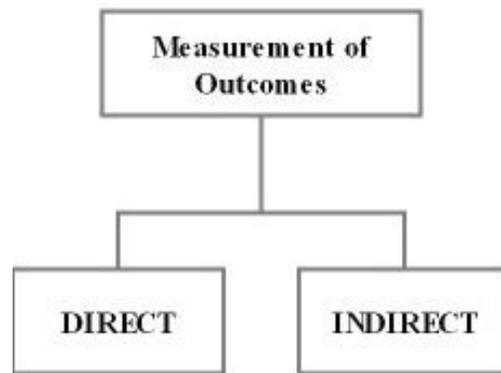


Fig-1: Two types of Measurement of outcome

attainment which is being followed everywhere. The current practice of use of exit surveys and proposed uses are shown in the Table-2. Various analysis carried out on the data collected based on the proposed exist survey at program level (Figure-4) are shown in the table-1 and course level exist survey (figure-3) analysis is shown in figure-2

Table-1: Analysis on data collected based on proposed exit survey- Part-I (Attainment of Program Outcome -POs expressed in %)

Pos	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Attained	77	73.3	85.8	79.1	88.9	88.8	87.4	89.6	88.9	85.1	88.1	88.9	88.9	91.1	89.6	90.4
Not Attained	23	26.7	14.2	20.9	11.1	11.2	12.6	10.4	11.1	14.9	11.9	11.1	11.1	8.89	10.4	9.63

Table-1: Analysis on data collected based on proposed exit survey- Part-II (Opinion on Department level satisfaction expressed in %)

	1	2	3	4	5	6	7	8	9	10	11	12
Perspectives	General Administration	Competency level of Teaching Faculty	Space and other infrastructure	Library Facility	Ambiance in labs and quality of lab equipments	Examination process	Question Paper quality	Assignment quality	Discipline	Provision to place year views	Opportunity to learn additional skills	Competency of support and technical staff
Satisfied	76	72.7	84.2	65.7	77	84.2	84.3	81.2	84.2	72.4	66.4	76.5
Unsatisfied	24	27.3	15.8	34.3	23	15.8	15.7	18.8	15.8	27.6	33.6	23.5

3. Conclusions

Exit survey play important role in collecting students' view on various facilities and resources. But it should mainly focus more on collecting their views on learning levels on every outcome at course level and at program level. This is to be used only to validate the attainment measurement done from direct assessment tools like examinations rather than weighted part of actual attainment measure.

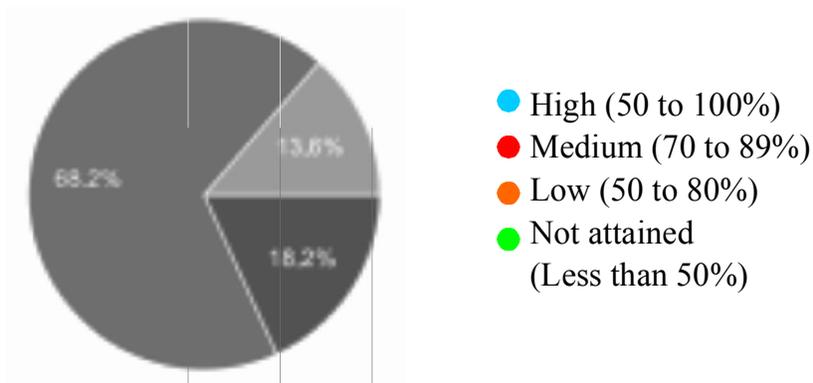
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CO-1 : Able to apply fundamental Object Oriented concepts in solving problems. (22 responses)



Did course helped yo to gain knowledge required for the Industry/ professional career? (22 response)

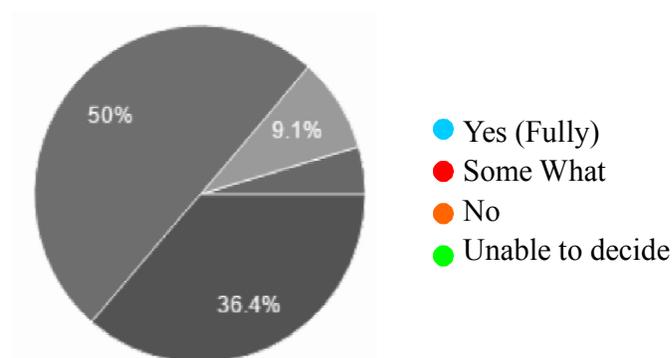


Fig-2: Course level exit survey analysis sample for one course outcome and generic query sample

Table-2: Comparison of proposed method with current practices

Current Practice	Proposed Practice (Best)
Exit survey is conducted once at the end of the program (4 years of BE Program) mainly to get generic feedback along with program outcome in few cases.	<p>Exit surveys are to be conducted at the end of every course to know the students' learning level for each course outcome. This is to be used only to validate the actual attainment calculated through direct assessment tools rather than becoming a weighted part of actual attainment, as it is the opinion expressed by the learner about self. This is to be used as main feedback rather than faculty centric questionnaires in the feedback</p> <p>To be conducted at the end of program to get generic feedback on resources, faculty members, placement facilities etc. along with their personal attributes. It should mainly emphasize on various attributes of the program outcome and serve as input to the attainment of program outcomes</p>
Students' feedback on Course Teacher at the end of the course	Exit survey for the course, based on learning levels of each student is to be used as a main feedback rather than faculty centric questionnaires in the traditional feedback system.