

# Program Learning Outcomes: An Approach in OBE

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## ABSTRACT

Outcome Based Education is an educational approach that focuses on the outcomes that one will achieve after completing an academic programme. OBE (Outcome Based Education) is based on a very simple, practical and logical notion that every one of us uses in our everyday life. Outcome based approach means knowing what one wants to do and achieve rather than the steps to be followed to do so. This paper focuses on assessment tools and processes used to gather the data upon which the evaluation of each of the Program Outcomes and Program Specific Outcomes is based indicating the frequency with which these processes are carried out and also focuses on assessment processes that demonstrate the degree to which the Program Outcomes and Program Specific Outcomes are attained and the attainment levels.

## Keywords

OBE, Program Outcomes, PSO, attainment levels

## 1. INTRODUCTION

Outcome Based Education has become a topic of discussion in most of the schools and institutes in many parts of the states [1, 2,]. Program learning outcome is one of the parts of the OBE. Program outcomes are the statements that describe what learners will know when they graduate from the program. There are many assessment tools for measuring the program outcomes of the students in one's curriculum. Measuring tools varies from one institution/school to another. It depends up on the individuality of the institution. This paper focuses on one of the measuring tools of the PO's and PSO's of the student in their curriculum.

## 2. PROGRAM OUTCOME ASSESSMENT TOOLS

Program outcomes are designed by their respective institute or any accreditation board [3, 4, 5]. Program Outcomes, as defined by NBA/institute are to be attained by students through the courses prescribed in the curriculum (Direct) and through other indirect methods like invited talks, workshops, internships, industry visits etc. Table 1 shows the tools carried out to assess the direct and indirect attainment.

**Table 1: Direct and indirect assessment tools used for measuring the attainment of each PO and PSO**

Direct methods	Frequency of assessment
Internal Assessment	Three times in every semester
University Assessment	Once in a semester
In-Direct methods	Frequency of assessment
Graduate/Exit Survey	Once in a Year

**Internal Assessment:** The internal Assessment Marks in a theory subject shall be based on 2 tests generally conducted at the end of each semester. An additional test may be conducted for desirous students before the end of the semester to give an opportunity to such students to improve their internal assessment marks. Average of the better marks obtained from any 2 tests shall be the internal assessment marks for the relevant subject.

**University Assessment:** The university assessment requires the candidate to secure minimum of 35% of the maximum marks in an examination.40% of the marks in aggregate inclusive of IA marks.

**Graduate/Exit survey:** The Graduate Survey is another assessment tool used towards measurement of program outcomes. The purpose of this survey is to analyze and assess the knowledge acquired by the undergraduates during their tenure of studies. All the academic activities are invariably mapped on to the program outcomes; Hence the outcome of this survey indirectly contributes towards attainment of program outcomes.

Program Outcomes and Program Specific Outcomes are assessed as follows:

- For Internal Assessment, Average value of the respective program outcomes is calculated by considering all the courses mapped on to it.
- A weightage of 80% is assigned to the calculated average value.
- Steps 1 and 2 are repeated for University Assessment as well.
- A weightage of 20% is assigned to the Graduate Survey value. Summation of Steps 2 and 4 are considered towards final program attainment

## 3. FACTORS CONTRIBUTING TO PO/PSO ATTAINMENT USING DIRECT METHOD

**CO Attainment:** The courses in the curriculum will have set of Course Outcomes (CO) defined by the Course Coordinators at the time setting up of the syllabus. The students who are studying the course are supposed to attain the course outcomes which are measured in terms of Course Attainment. The courses defined by the curriculum of particular programme will contribute towards course attainment and program attainment. CO Attainment is calculated using multiple assessment tools like Test, Assignments and laboratory components.

The preliminary level set for attainment of course outcomes is as follows:

Attainment Level 3	50% Students Must Score 60% Marks and Above
Attainment Level 2	45% Students Must Score 60% Marks and Above
Attainment Level 1	40% Students Must Score 60% Marks and Above

Target attainment levels are same for the internal and university exams of any assessment years. The set attainment levels will be reviewed based on annual performance of the student. The attainment level targets may be revised for enhanced course outcomes.

Following procedure is followed for calculation of course outcomes attainment:

- All the mapped questions from the Internal Assessment papers are considered for overall course attainment.
- Any 3 representative mapped questions of all the three internals are considered towards final course outcome attainment.
- Percentage of obtained marks for Step 2 is calculated by keeping fixed denominator (i.e. 3)
- Obtained values from Step 3 is compared against the set target levels
- All the satisfying values obtained from Step 4 are considered for deciding various levels of course outcome attainment

Table 3: Course Attainment Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO Attainment	1.82	1.86	1.32	1.46	1.43	1.40	1.8	1.74	1.2	1.2	1.40	1.34
Direct Attainment	1.78	1.58	1.23	1.45	1.34	1.45	1.66	1.23	1.45	1.23	1.34	1.34
InDirect Attainment	2	2	2	2	2	2	2	2	2	2	2	2

Table 2: Course to PO Mapping

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Course1	-	-	2	-	1	2	-	-	-	-	1	-
Course2	-	-	2	-	1	2	-	-	-	-	1	-
Course3	-	2	2	-	1	2	-	2	-	-	1	2
Average	0	1	2	0	1	2	0	1	0	0	1	1

#### 4. FACTORS CONTRIBUTING TO INDIRECT SURVEY FOR PO ATTAINMENT

For all the survey's whichever is been conducted, every institute will set some feedback questions for the students to answer so that we get the better idea for the improvement in the syllabus and also in conducting the workshops in every academic year.

Graduate/EXIT SURVEY: The EXIT survey is the study conducted for graduating students who are in their final semester of graduation. The survey identifies the areas in which the curriculum has to be improved in terms of adding or deleting a course, updating the existing course etc. from the student perspective. The feedbacks are collected in this regard from the graduating students. (Survey consists of questioners mapped to POs).

Course	PSO1	PSO2
Course 1	2	1
Course 2	2	-
Average	2	1

Table 5: CO Attainment Level

Course	PSO1	PSO2
CO Attainment	1.53	1.53
Direct Attainment	1.41	1.41
InDirect Attainment	2	2

#### 5. CONCLUSION

Outcome Based Education is one of the main parts of the educational system now-a-days. Hence this paper has given an oversight of the techniques that are used to measure the outcome based education. It also tells the tools used and assessment made for measuring the program learning outcomes. Future it could be enhanced to form different way of calculating the attainment which makes easy and user friendly to the people.

#### 6. REFERENCES

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