

1. Outcome-Based Education (OBE)

Outcome-Based Education (OBE) is a student-centric teaching-learning methodology in which the course delivery and assessment are planned to achieve stated objectives and outcomes. It is an academic process and approach that aims at developing the outcomes (Knowledge, Skills and Attitude - KSA) that students are expected to achieve in the period leading up to graduation. It also focuses on evaluating the outcome of a programme that a graduate is expected to achieve 4 - 5 years after completing it. OBE is not a specific style of teaching or assessment. All educational activities conducted help the students to achieve certain goals. Students are expected to be able to do more challenging tasks other than memorizing and reproducing what was taught. Depending on the targeted outcome, the faculty may accept the role of instructor, trainer, facilitator, and / or mentor. OBE improves traditional methods and focuses more on student-centered activities.

Benefits of OBE

- ✓ **Clarity:** The focus on outcome creates a clear expectation of what needs to be accomplished by the end of the course.
- ✓ **Flexibility:** With a clear sense of what needs to be accomplished, instructors will be able to structure their lessons around the students' needs.
- ✓ **Comparison:** OBE can be compared across the individual, class, batch, programme and institute levels.
- ✓ **Involvement:** student centric approaches allow them to feel responsible for their own learning, and they should learn more through this individual learning.

The OBE model measures graduate progress in four parameters

- Programme Educational Objectives (PEO)
- Programme Outcomes (PO)
- Programme Specific Outcomes (PSO)
- Course Outcomes (CO)

India - Outcome Based Education and Accreditation

The induction of India in the Washington Accord in 2014 with the permanent signatory status of the National Board of Accreditation (NBA) is considered a big leap forward for the higher education system in India. The implementation of OBE in higher education is ongoing in India and the National Assessment and Accreditation Council (NAAC) and the National Board of Accreditation (NBA) are autonomous bodies for promoting global standards for higher education. NBA has started accrediting only the programmes running with OBE from 2013.



2. Institutional Vision and Mission

Vision

To build up a center par excellence equipped to mould outstanding young professionals in relevant fields integrating the physical, intellectual, emotional and spiritual dimensions of their lives through focused training and person specific career counseling so that they may observe unflinching allegiance to the society.

Mission

To bring out of a human being, what is the best in him\her by imparting excellent, up-to-date training in the field of new technologies, integrating the spiritual, intellectual and human dimensions, and to face global challenges, thus preparing him\her for an enriching and fulfilling future.

3. Graduate Attributes (GA)

Graduates' attributes are factors that indicate a graduate's ability to practice at an appropriate level. GAs form a set of individually assessable outcomes of the programme. Graduate attributes are the high level qualities, skills and perceptions that a student must acquire as a result of the learning and experience in which they are engaged.

4. Programme Educational Objective (PEO)

Programme Educational Objectives are broad statements that describe the career and professional accomplishments that the programme prepares to make to graduates. The PEO statements of a programme describe the expected benefits of graduates in their careers, in particular, and what graduates expect to do and achieve in the first few years after graduation.

5. Programme Outcomes (PO)

Programme outcomes are narrower statements that describe what students are expected to know and would be able to do by the time of graduation. POs need to be aligned closely with GAs, PEOs, Vision and Mission. These are related to the Skills, Knowledge and Attitude that students acquire as they progress through the programme.

6. Programme Specific Outcomes (PSO)

Programme Specific Outcomes are what students can do at graduation by referring to a programme. PSOs are programme specific. These are statements that define the results that students identify with the fact that the knowledge and technology learned have a direct impact on the progress and sustainability of society.

7. Course Outcomes (CO)

Course Outcomes (CO) outline the course specifications that students must acquire. COs are statements that describe the significant and essential learning that learners have achieved, and can be reliably demonstrated at the end of a course. Well-written COs ease faculty to measure the CO achievement at the end of the semester. It also enables faculty to design appropriate delivery and evaluation methods for obtaining the designed COs. Generally, three or more course outcomes may be specified for each course based on its weightage.

Rules to develop COs:

The rules to develop CO are 'SMART'.

- ✓ **Specific:** Students can state what they can achieve by reading the outcomes.
- ✓ **Measurable:** Students can identify when they have achieved the outcomes.
- ✓ **Achievable:** It is fairly possible to complete the outcomes on time and with the resources available.
- ✓ **Realistic:** Outcomes are appropriate for the student.
- ✓ **Time bounded:** There is a time limit for completing the Outcomes.

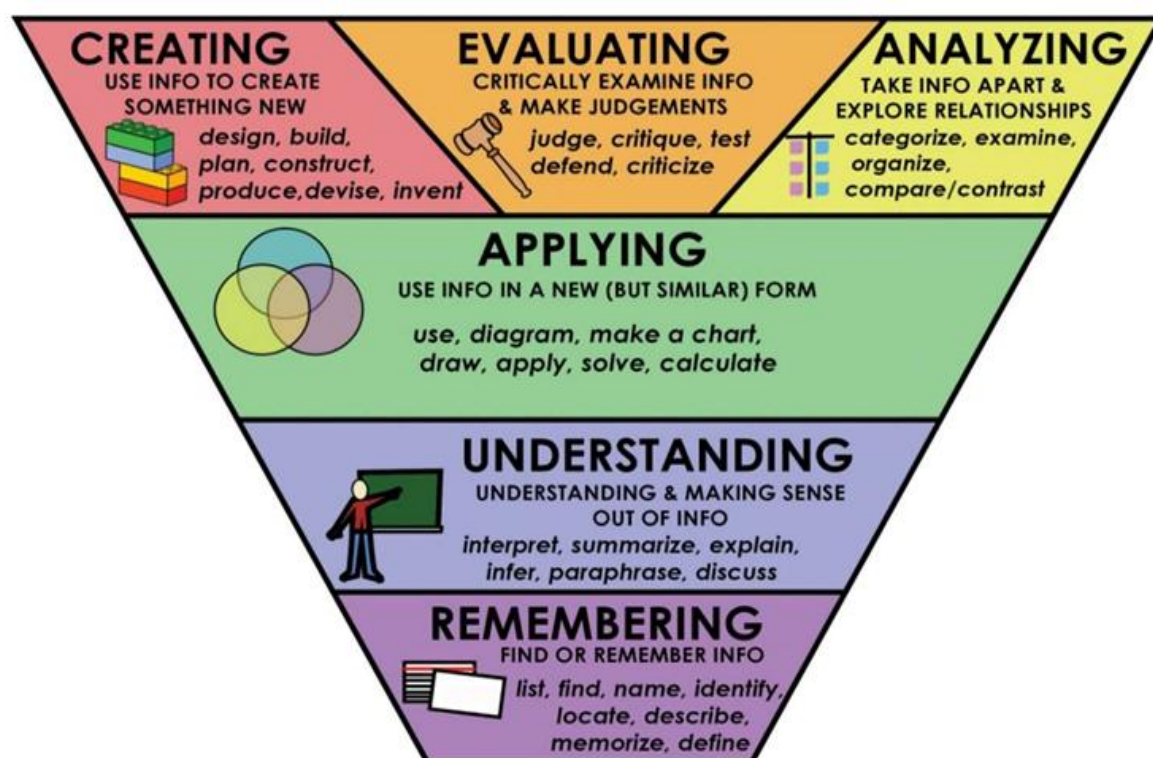
8. CO – PO and CO – PSO Mapping Scale

The courses in the curriculum must correlate with the POs and PSOs. For a course, map the COs to POs and PSOs using the CO-PO and CO-PSO matrix. The correlation levels are:

- ✓ “ ” – No Correlation.
- ✓ “1” – Slight (Low) Correlation
- ✓ “2” – Moderate (Medium) Correlation
- ✓ “3” – Substantial (High) Correlation

9. BLOOM’S

Taxonomy Bloom’s Taxonomy was created in 1956 under the leadership of educational psychologist Dr. Benjamin Bloom in order to promote higher forms of thinking in education, such as analyzing and evaluating concepts, processes, procedures, and principles, rather than just remembering facts. The initial framework elaborated by Bloom and his collaborators consisted of six major categories: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. The categories after Knowledge were presented as “skills and abilities,” with the understanding that knowledge was the necessary precondition for putting these skills and abilities into practice. It is often used when designing educational, training and learning processes. An organized set of objectives helps teachers to plan and deliver appropriate instruction, design valid assessment tasks and strategies, and ensure that instruction and assessment are aligned with the objectives. Bloom's Taxonomy focuses primarily on developing the course learning objectives. It can be used to increase students' awareness of the learning process. Faculty can also understand how complex cognitive development and lower-level skills are nurtured in higher-order thinking. The cognitive domain is broken into six levels of objectives that are Remember, Understand, Apply, Analyze, Evaluate, and Create.



The Cognitive Process Dimensions with sample Action Verbs

Lower Order of Thinking (LOT)			Higher Order of Thinking (HOT)		
Remembering:	Understanding:	Applying:	Analyzing:	Evaluating:	Creating:
Defines	Comprehends	Applies	Analyzes	Appraises	Categorizes
Describes	Converts	Changes	Breaks down	Compares	Combines
Identifies	Defends	Computes	Compares	Concludes	Compiles
Knows	Distinguishes	Constructs	Contrasts	Criticizes	Composes
Labels	Estimates	Demonstrates	Deconstructs	Critiques	Creates
Lists	Explains	Discovers	Differentiates	Defends	Devises
Matches	Extends	Manipulates	Discriminates	Describes	Designs
Names	Generalizes	Modifies	Distinguishes	Evaluates	Generates
Outlines	Gives an example	Operates	Identifies	Explains	Modifies
Recalls	Infers	Prepares	Illustrates	Interprets	Organizes
Recognizes	Interprets	Produces	Infers	Justifies	Plans
Reproduces	Paraphrases	Shows	Outlines	Relates	Rearranges
Selects	Predicts	Solves	Selects	Summarizes	Reconstructs
States	Rewrites	Uses	Separates	Supports	Reorganizes

The Knowledge Dimension			
Concrete Knowledge		Abstract knowledge	
Factual	Conceptual	Procedural	Metacognitive
✓ Knowledge of terminologies ✓ Knowledge of specific details & elements	✓ Knowledge of classifications and categories ✓ Knowledge of principles & generalizations ✓ Knowledge of theories, models & structures	✓ Knowledge of subject specific skills and algorithms ✓ Knowledge of subject specific techniques and methods ✓ Knowledge of criteria for determining when to use appropriate procedures	✓ Strategic Knowledge ✓ Knowledge about cognitive task, including appropriate contextual and conditional Knowledge ✓ Self- Knowledge

10. OBE Implementation and Involvement

Implementing OBE is an important process in order to ensure a well-structured education system. All staff members (i.e. Academic, Technical and Supporting staff) are involved in the OBE implementation in the teaching-learning and evaluation activities in an institution. Educate those involved about the curriculum, objectives, outcomes, teaching-learning methods, and the ongoing evaluation process.

11. Publication and Dissemination

The Vision & Mission statement of the Institution, PO, PSO and CO statements reach all students and stake holders through College Website, Hand Book, Induction & Orientation programme and Department & Classroom display.

12. Pedagogy for Courses

In JBASC, in order to follow Bloom's taxonomy level, learning outcomes are designed and aligned with course outcomes (COs). For each learning outcomes, the content of delivery, development, and use of ICT tools / teaching aids, teaching methods, and evaluation frequency are determined. Special academic activities are planned based on the course syllabus. Records of all activities during course delivery are kept. Effectiveness of teaching-learning activities performed is evaluated at the end of the semester. Whether the content, delivery and evaluation methods conducted throughout the semester are consistent with the teaching plan developed at the beginning of the semester is examined.

13. Drafting of POs

The POs are formulated through the following process steps, unless specified by the University in the syllabus.

- ✓ The Heads of the Departments and senior faculties outline the POs in accordance with the Vision and Mission of the Institution.
- ✓ The draft version is discussed with stakeholders and their views are collected by the Heads of the Departments to make necessary changes.
- ✓ POs are reviewed and approved by the Core Committee and the IQAC.

14. Drafting of PSOs and COs

The responsibility for setting up the PSOs and COs rests with the concerned department, if not specified in the syllabus. PSOs are highly compatible with the discipline of the programme. The COs are defined by considering the course content covered in each module of a course using the action verbs of learning levels. COs are identified and are mapped to the appropriate POs and PSOs to ensure that all POs and PSOs are delivered throughout the study period. COs are mapped to at least one PO/PSO.

- ✓ The Head of the Department, senior faculties and subject experts prepare the PSOs and COs considering the Vision & Mission of the Institution, POs and the syllabus and course objectives.
- ✓ This is discussed and finalized at the departmental meeting along with the feedback evaluation reports of those concerned.
- ✓ PSOs and COs are reviewed and approved by Core Committee and the IQAC.

15. Assessment and Attainment Methods

Assessment is one or more processes carried out by the institution that identifies, collects and prepares data to evaluate the achievement of outcomes. Both direct and indirect method of assessment is followed for attainment assessment. Attainment is the activity or fact of achieving a standard result towards the accomplishment of desired goals. The weightage for direct attainment is 80% and for Indirect attainment is 20% in normal practice. At the initial stage of OBE implementation JBASC follows only the direct method of assessment.

Direct Method

The direct method displays the student's knowledge and skills from their performance in Assignment, Seminar, Case Study, Group Discussion, Paper Presentation, Viva-Voce, Attendance, Internal / Model Examination, End Semester Examination, etc. These methods provide a sample of what students know

and / or can do and provide strong evidence of student learning. The year-end exam is set at approximate weightage of 3/4, the ratio depending on the scheme of the various programmes.

Indirect Assessment Method

The Indirect tool used is the Survey from different stakeholders. Course End Survey Analysis is a technique to measure the attainment of outcomes indirectly. The indirect method is conducted through Course Exit Survey, Graduate Exit Survey, Alumni Feedback, Employer Feedback, Teacher Feedback and Parent Feedback.

16. Attainment Levels

Course Outcome

The assessment of course outcome follows the direct method in which depending on the scheme of the Programme the weightage is given for year-end examination. If the average attainment score of the course is greater than or equal to 2 the outcome is attained for that course. If the attainment score of a particular course is more than 2 for two consecutive years, the existing rubric for the attainment will need to be changed as part of a continuous improvement. The rubric set for CO calculation based on the direct evaluation method is as follows.

If a student achieves more than 60%, grade point is 3 (High), if it is between 50% and 60 %, then grade point 2 (Medium), between 40% and 50%, then grade point 1 (Low) and if the score is less than 40%, then grade point should be 0.

For CBCS - Under Graduate Degree Programmes 2017 admission onwards, if a student achieves more than 60%, grade point is 3 (High), if it is between 45% and 60 %, then grade point 2 (Medium), between 30% and 45%, then grade point 1 (Low) and if the score is less than 30%, then grade point should be 0.

Programme Outcome & Programme Specific Outcome

At the end of each Programme the PO assessment is done from the CO attainments of all curriculum components. At the end of the semester the attainment of PO/PSO is also assessed along with the CO assessment of each course. The Programme Outcome is calculated at the end of the Programme from the result of this assessment. The attainment level may be set for a specific Programme or Institution in general.

Programme Educational Objective

Assessment of the Programme Educational Objectives is done using indirect measurements. Placement records, Higher studies and survey of alumni, employers, etc. are used to assess the attainment of PEOs.