SENSITIZATION WEBINAR ON OBE

THEME: IMPLEMENTATION OF OUTCOME-BASED EDUCATION IN ENGINEERING IN NIGERIAN UNIVERSITIES

ON 26TH MAY, 2021

ANCORED AT,
COREN HEADQUARTERS ABUJA

Implementation Process
of Outcome Based Education (OBE)

Webinar Organized for Academics, Examination Officers,
HoDs, Deans, Practitioners of Engineering in industries

ON 26TH MAY, 2021

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Outcomes of the Webinar

At the end of this webinar, participants are expected to:

1. Know what OBE is and its importance
2. Analyse the roles of key stakeholders in implementation of OBE
3. Explain the:

    - essential steps in implementation of OBE

    - relationship between the steps
4. understand the importance of OBE for graduate to meet the societal needs
5. Know the importance of joining Washington Accord

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Outline of the Webinar

1. Outcome-Based Education in a nutshell

2. Roles of Stakeholders

3. Basic Steps for OBE Implementation

4. OBE Implementation and Joining International Engineering Alliance

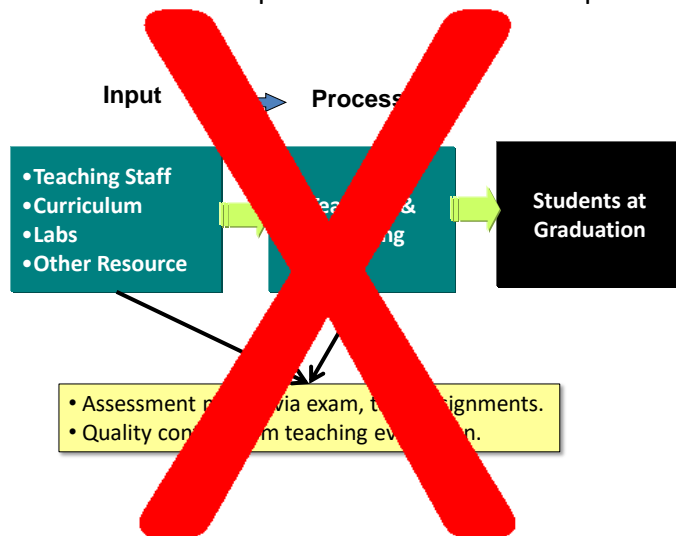5. Summary and Outlook

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OBE in a nutshell

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What does "Outcome-Based Education" really mean?

1. *All learning activities* (teaching, assessment, etc.) are geared towards, *not what the teacher is going to teach*, <u>but what the outcome of that teaching should be</u>, <u>what the learner supposed to do and at what standard.</u>

2. it involves the *restructuring of curriculum, assessment and reporting practices* in education to <u>reflect the achievement of high order learning and mastery</u> rather than *accumulation of course credits.*
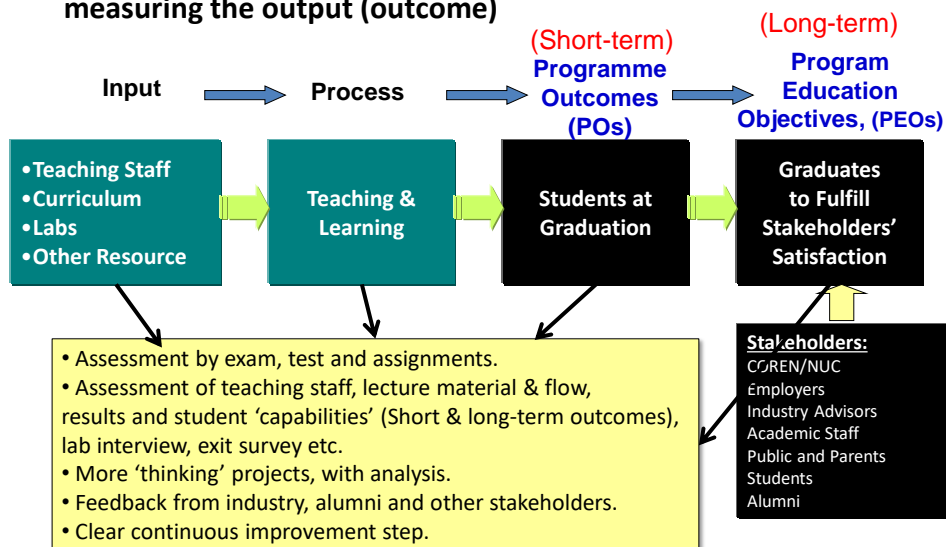
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OBE in a nutshell…

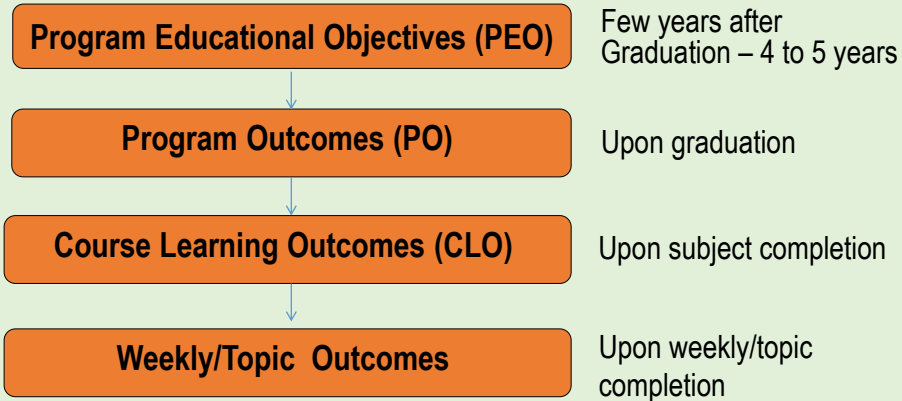- Traditional education process focuses on the inputs.

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OBE in a nutshell…

- OBE shifts from measuring input and process to **include measuring the output (outcome)**
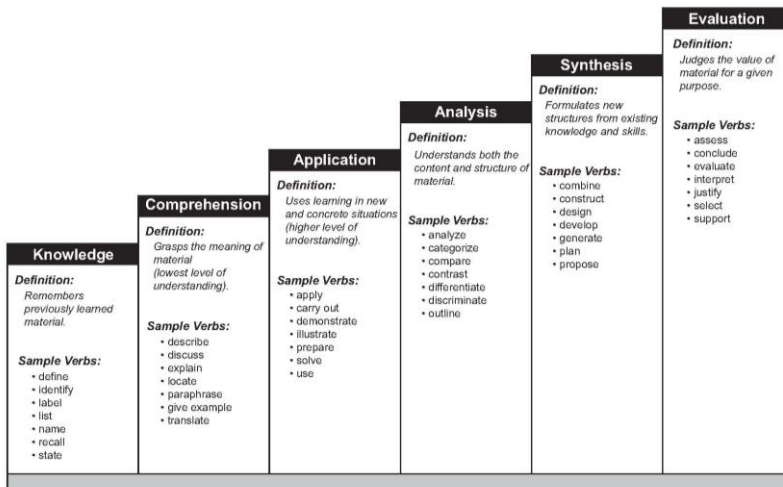

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Different Levels of Outcomes

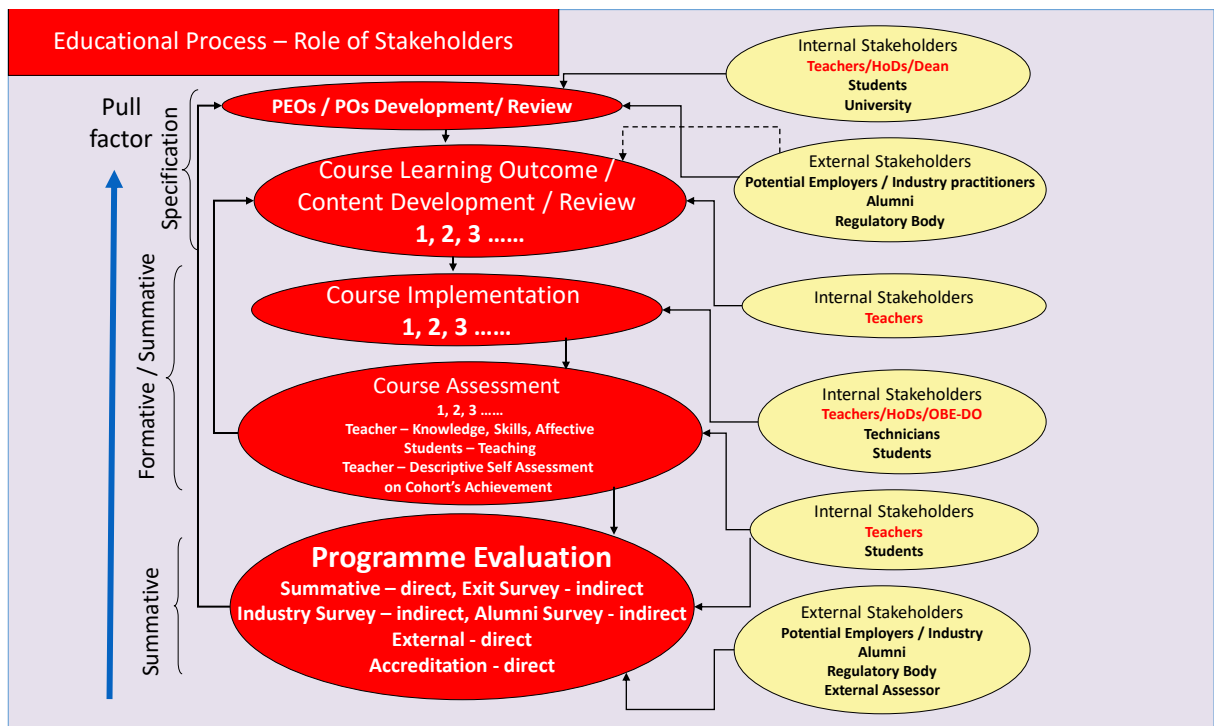|	
Program Educational Objectives (PEO)	Few years after Graduation – 4 to 5 years
Program Outcomes (PO)	Upon graduation
Course Learning Outcomes (CLO)	Upon subject completion
Weekly/Topic Outcomes	Upon weekly/topic completion

Cognitive Domain
(thinking, knowledge)

Knowledge

Definition:
Remembers previously learned material.

Sample Verbs:
- define
- identify
- label
- list
- name
- recall
- state

Comprehension

Definition:
Grasps the meaning of material (lowest level of understanding).

Sample Verbs:
- describe
- discuss
- explain
- locate
- paraphrase
- give example
- translate

Application

Definition:
Uses learning in new and concrete situations (higher level of understanding).

Sample Verbs:
- apply
- carry out
- demonstrate
- illustrate
- prepare
- solve
- use

Analysis

Definition:
Understands both the content and structure of material.

Sample Verbs:
- analyze
- categorize
- compare
- contrast
- differentiate
- discriminate
- outline

Synthesis

Definition:
Formulates new structures from existing knowledge and skills.

Sample Verbs:
- combine
- construct
- design
- develop
- generate
- plan
- propose

Evaluation

Definition:
Judges the value of material for a given purpose.

Sample Verbs:
- assess
- conclude
- evaluate
- interpret
- justify
- select
- support

Based on "Taxonomy of Educational Objectives", B.S. Bloom Editor. 1956

Instructional Job Aid • 5

| lower order | Intermediate | Higher order |

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Roles of Stakeholders

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Educational Process – Role of Stakeholders

Pull factor

Specification

PEOs / POs Development/ Review

Internal Stakeholders
Teachers/HoDs/Dean
Students
University

Course Learning Outcome / Content Development / Review
1, 2, 3 ……

External Stakeholders
Potential Employers / Industry practitioners
Alumni
Regulatory Body

Course Implementation
1, 2, 3 ……

Internal Stakeholders
Teachers

Course Assessment
1, 2, 3 ……
Teacher – Knowledge, Skills, Affective
Students – Teaching
Teacher – Descriptive Self Assessment on Cohort's Achievement

Internal Stakeholders
Teachers/HoDs/OBE-DO
Technicians
Students

Formative / Summative

Programme Evaluation
Summative – direct, Exit Survey - indirect
Industry Survey – indirect, Alumni Survey - indirect
External - direct
Accreditation - direct

Internal Stakeholders
Teachers
Students

Summative

External Stakeholders
Potential Employers / Industry
Alumni
Regulatory Body
External Assessor

OBE IMPLEMENTATION PROCESS

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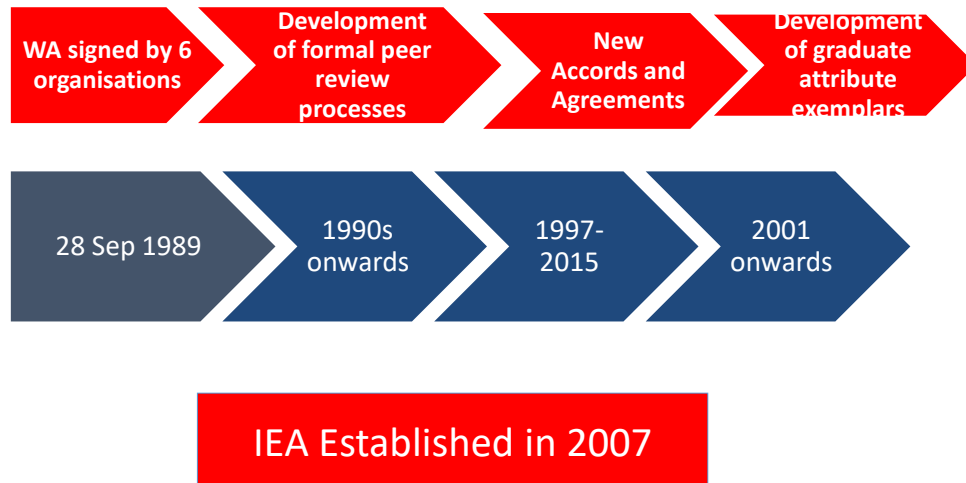**The basic steps for OBE implementation include:**

1. Establish Institution Mission statements and Programme Educational Objectives

2. Engagement of diverse academic staff and ensure ownership and full commitment of the faculties or departments.

3. Map institution mission statements and Programme Educational Objectives (PEOs)

4. Define Programme Outcomes (POs) with Bloom's Taxonomy

5. Map Programme Educational Objectives (PEOs) with Programme Outcomes (POs)

6. Define CLO (Course Learning Outcomes) with Bloom's Taxonomy for each Course

7. Map Courses with POs at suitable levels of Bloom's Taxonomy

8. Map CLOs with POs at suitable levels of Bloom's Taxonomy

9. Map Assessment Pattern with CLO of each course

10. Map Topics with CLOs

11. Define pedagogical tools for course outcomes delivery. i.e Provision of multiple instructional and assessment strategies that meet the needs of each student with adequate time to reach the maximum potential

12. Preparing session-wise Course Lesson Planner

13. Map Questions with CLOs at Bloom's Taxonomy levels & Assessments

14. Define rubrics with Bloom's Taxonomy and CLO

15. Track students performance by proposing proper remedial measures

16. Measure students performance against CLO threshold, course-wise

17. Measure students performance against PO threshold, semester-wise

18. Measure the attainment of each PO through Direct/Indirect assessments

19. Compare PO for last 3 academic years and propose remedial actions through effective leadership and staff collaboration

20. Assess the attainment of Programme Educational Objectives

OBE IMPLEMENTATION AND WASHINGTON ACCORD

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Historical Development of International Engineering Alliance

| WA signed by 6 organisations	Development of formal peer review processes	New Accords and Agreements	Development of graduate attribute exemplars
28 Sep 1989	1990s onwards	1997-2015	2001 onwards

IEA Established in 2007

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Benefits of The Washington Accord Memberships

International Mobility of Engineering Professionals

1. Agreement that establishes equivalence of other countries' accredited professional engineering Programmes.

2. Accredited Engineering Graduates are recognized by other signatory countries

3. Possible employment as engineers in those countries without further examinations.

Road to Signatory of Washington Accord
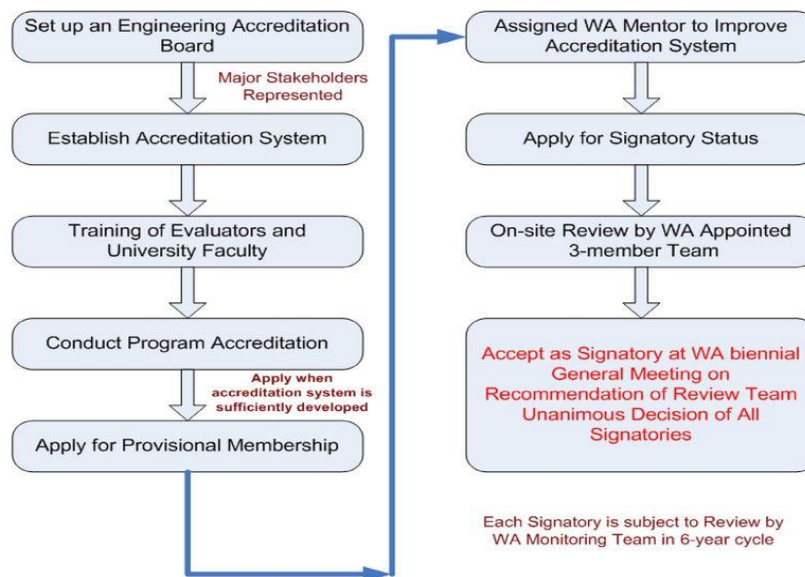
Washington Accord Full Signatories

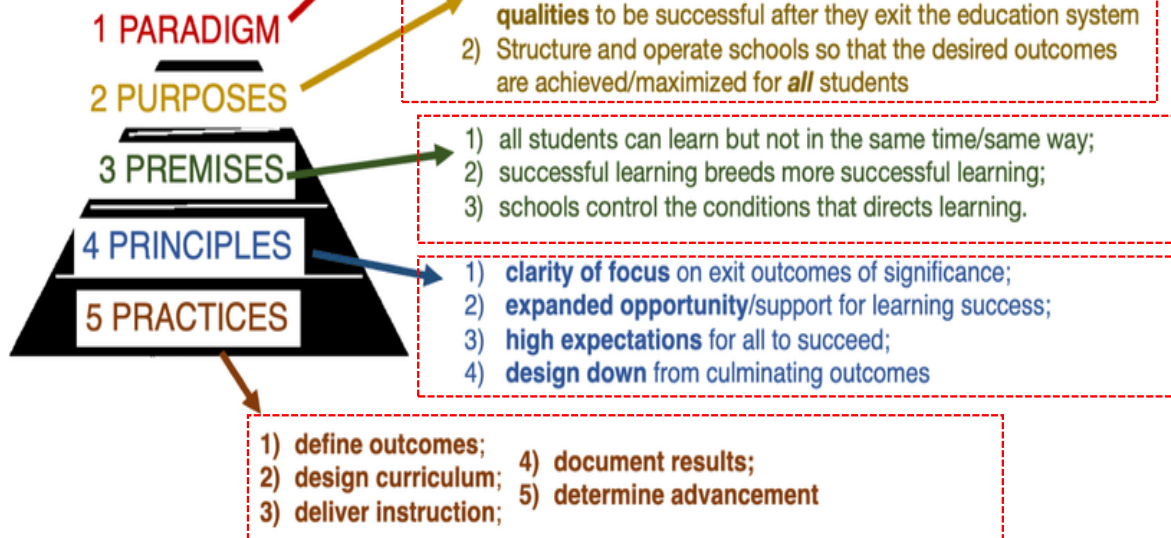| Country	Represented by:
Korea	Accreditation Board for Engineering Education of Korea (ABEEK) (2007)
Russia	Association for Engineering Education of Russia (AEER) (2012)
Malaysia	Board of Engineers Malaysia (BEM) (2009)
China	China Association for Science and Technology (CAST) (2016)
South Africa	Engineering Council South Africa (ECSA) (1999)
New Zealand	Engineering New Zealand (EngNZ) (1989)
Australia	Engineers Australia (EA) (1989)
Canada	Engineers Canada (EC) (1989)
Ireland	Engineers Ireland (EI) (1989)
Hong Kong China	Hong Kong Institution of Engineers (HKIE) (1995)
Chinese Taipei	Institute of Engineering Education Taiwan (IEET) (2007)
Singapore	Institution of Engineers Singapore (IES) (2006)
Sri Lanka	Institution of Engineers Sri Lanka (IESL) (2014)
Japan	JABEE (2005)
India	National Board of Accreditation (NBA) (2014)
United States	Accreditation Board for Engineering and Technology (ABET) (1989)
Turkey	Association for Evaluation and Accreditation of Engineering Programs (MÜDEK) (2011)
United Kingdom	Engineering Council United Kingdom (ECUK) (1989)
Pakistan	Pakistan Engineering Council (PEC) (2017)
Peru	Instituto de Calidad y Acreditacion de Programas de Computacion, Ingenieria y Tecnologia (ICACIT) (2018)

Washington Accord Provisional Signatories

Country	Represented by:
Chile	Agencia Acreditadora Colegio De Ingenieros De Chile S A (ACREDITA CI)Provisional Status Approved in 2018.
Thailand	-Council of Engineers Thailand (COET)Provisional Status Approved in 2019.
Bangladesh	The Institution of Engineers Bangladesh (IEB)Provisional Status Approved in 2016.
Costa Rica	Colegio Federado de Ingenieros y de Arquitectos de Costa Rica (CFIA)Provisional Status Approved in 2016.
Mexico	Consejo de Acreditación de la Enseñanza de la Ingeniería (CACEI)Provisional Status Approved in 2016.
Philippines	Represented by Philippine Technological Council (PTC)Provisional Status Approved in 2016.
Myanmar	Myanmar Engineering Council (MEngC)Provisional Status Approved in 2019.
Indonesia	Indonesian Accreditation Board for Engineering Education (IABEE)Provisional Status Approved in 2019.

SUMMARY AND OUTLOOK

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OBE PYRAMID (the 5P's)

1 PARADIGM
2 PURPOSES
3 PREMISES
4 PRINCIPLES
5 PRACTICES

1) **what** and **whether** students learn successfully is more important than **when** and **how** they learn something

1) Equip students with the **knowledge**, **competence**, and **qualities** to be successful after they exit the education system
2) Structure and operate schools so that the desired outcomes are achieved/maximized for *all* students

1) all students can learn but not in the same time/same way;
2) successful learning breeds more successful learning;
3) schools control the conditions that directs learning.

1) **clarity of focus** on exit outcomes of significance;
2) **expanded opportunity**/support for learning success;
3) **high expectations** for all to succeed;
4) **design down** from culminating outcomes

1) define outcomes;
2) design curriculum;
3) deliver instruction;
4) document results;
5) determine advancement

SUMMARY AND OUTLOOK…

1. OBE helps to empower a workforce that can compete in a global economy of the 21st century society.

2. OBE equipped learners to *transfer academic success* to life in a *complex, challenging and high-technology future*.

3. OBE Approach prepares COREN for joining Washington Accord and International Engineering Alliance (IEA)

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Thank you

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The End

Q & A