OVERVIEW OF OUTCOME-BASED EDUCATION

A WORSHOP ORGANISED FOR COUNCIL MEMEBERS
COUNCIL FOR THE REGULATION OF ENGINEERING IN NIGERIA

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Outcomes of the Workshop

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

1. know what OBE is and its importance
2. explain the

    essential components of the OBE.

    purposes of OBE

    basic assumptions of OBE

    principles of OBE

3. differentiate traditional education approach from OBE
4. understand the expectation of OBE and joining Washington Accord

Outline of the Workshop

1. The Present challenge to Nigeria Engineering Education Approach
2. Traditional Education – Its limitations
3. Outcome based Approach- Meaning, Assumptions, Purposes Principles and Thrust.
4. Major differences between Traditional and OBE Approaches
5. Expectations of OBE Approach and joining Washington Accord
6. Summary

The Great Challenge

How tertiary education could provide both **professional knowledge/skills** and **all-round attributes** to the ***graduates*** so as to enable **them** face the **diversified** yet **global demands** of the 21st century society.

To compete in a global economy of the 21st century society, a country requires a workforce (Engineer) that:

1. can solve problems
2. is committed to ongoing learning
3. is creative
4. has above-average communication skills
5. is in line with new technological developments
6. is flexible
7. can participate in management processes and decision-making and
8. can work interactively.

Traditional Education Approach

- is often described as;

1. teacher-centered
2. Lecture-based
3. Curriculum-centered, and
4. formal (i.e. transmitting information from the teacher to the student)
5. knowledge and skills learnt are not always coupled to a specific outcomes, so the learning takes place in a vacuum.

Deficiencies of Traditional Education Approach

1. More attention is put on what is taught rather than what students learned.
2. Students are given grades and rankings compared to each other – students become **exam oriented** or **CGPA driven**.
3. Graduates are not completely prepared for the workforce.
4. Lack of emphasis on soft skills needed in jobs e.g. communication skills, interpersonal skills, analytical skills, working attitude etc..

Success at education institution level is of limited benefit, unless ***learners*** are equipped to ***transfer academic success*** to life in a ***complex, challenging, high-technology future***.

The Missing Link

Having learners do ***important things*** with ***what they know*** is a major step ***beyond*** knowing itself.

Paradigm Shift in the Education & Training Philosophy

WHAT and **WHETHER** students learn successfully is **more** important than **WHEN** and **HOW** they learn something.

How the Approach operate towards ***"accomplishing results"*** is more important than simply ***"providing services"*** that does not meet the societal needs***.***

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***, **but what the outcome of that teaching should be**, **what the learner supposed to do and at what standard.**
2. it involves the ***restructuring of curriculum, assessment and reporting practices*** in education to **reflect the achievement of high order learning and mastery** rather than ***accumulation of course credits.***

The Purposes of OBE

OBE's purposes reflect its underlying ***"Success for all students and staff"*** philosophy. They are:

1. Ensuring that all students are equipped with the knowledge, competence, and qualities needed to be successful after they exit the educational Approach.

2. Structuring and operating schools so that those outcomes can be achieved and maximized for all students.

Basic Assumptions of OBE Approach

1. All students can learn and succeed, but not all in the same time or in the same way.

2. Successful learning promotes even more successful learning.

3. Schools control the conditions that directly affect successful school learning.

Essential Principles of OBE

1. **Clarity of focus:**

- ***Everything*** teachers ***do*** must be ***clearly focused*** on what they want learners to ultimately be able to do successfully.

Applications:

1. Help learners develop competencies
2. Enable predetermined significant outcomes
3. Clarify short & long term learning intentions at every stage of the teaching process.
4. Focus all student assessments on clearly defined effective outcomes

Essential Principles of OBE…

2. Designing back

- ***All instructional decisions*** are made by tracing back from the "desired end result" and identifying the "building blocks" of learning that students must achieve in order to eventually reach the long-term outcomes.

Applications:

1. Develop "organic" education curricula.
2. Trace back from desired end results.
3. Identity learning "building blocks".
4. Link planning, teaching & assessment decisions to significant learner outcomes.

Essential Principles of OBE…

3. Teachers should have high expectations for all students

- Establish high, challenging standards of performance in order to encourage students to engage deeply with the issues about which they are learning.

Applications:

1. Believe in the idea that successful learning promotes more successful learning (Spady, 1994).
2. Engage deeply with issues about which they are learning.
3. Intellectual quality is not something reserved for a few learners. Thus expect effective learning outcomes from **all** learners.

Essential Principles of OBE…

4. Teachers must strive to provide expanded opportunities to all learners

- Not all learners can learn the same thing in the same way and in the same time (Spady, 1994).
- This imply the differences in students' learning rates and learning styles should not be consider as barriers to successful learning, but as factors that must be consider in designing sound instructional process.

Applications:

1. Most students can achieve high standards, if they are given appropriate opportunities.
2. Provide multiple learning opportunities matching learner's needs with teaching techniques.

Thrust of OBE

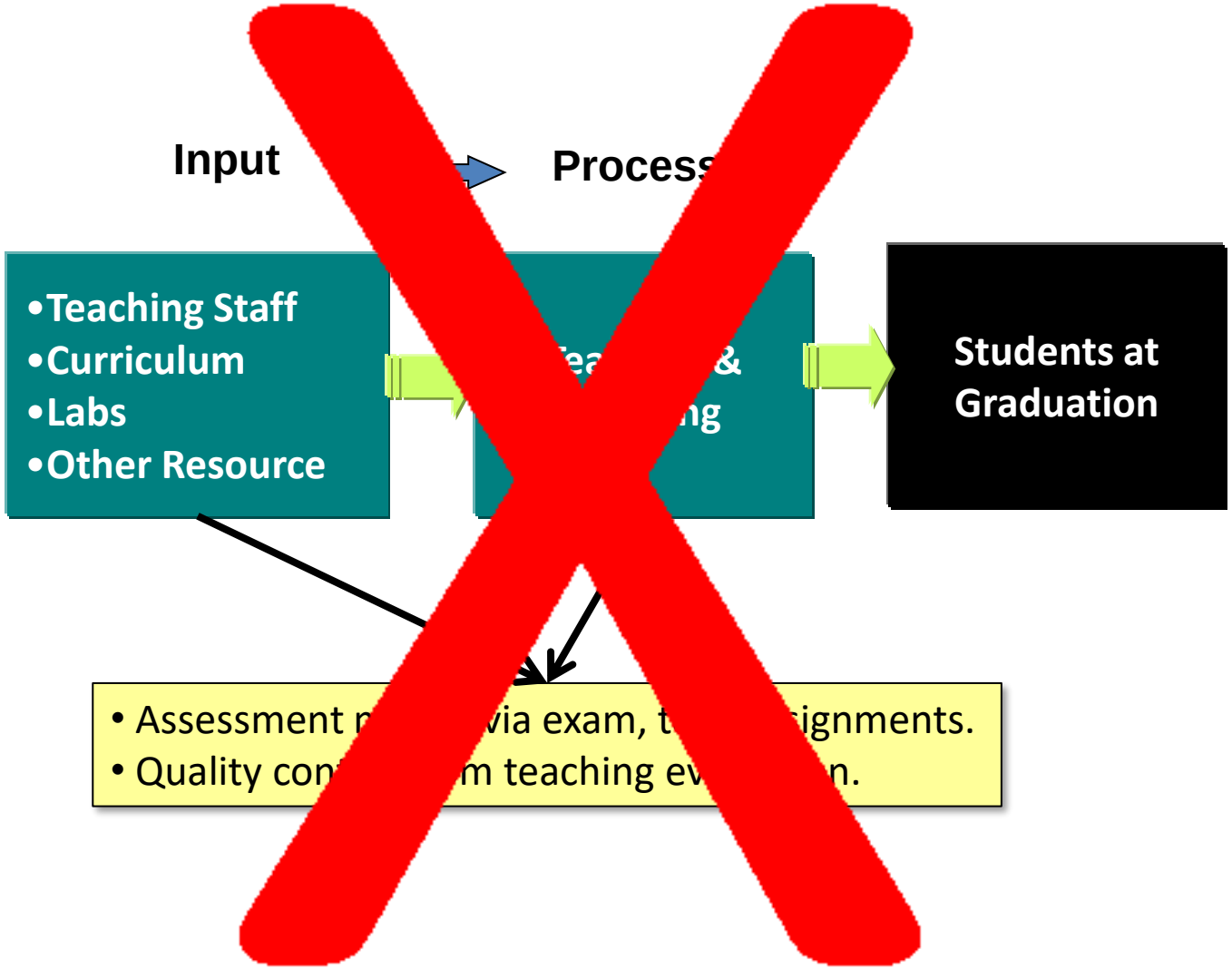
- **What** do you want the students to have or able to do?
  - **Knowledge, Skill, Attitude**
- **How** can you best help students achieve it?
  - **Student Centred Delivery**
- **How** will you know that they have achieved it?
  - **Assessment**
- **How** do you close the loop?
  - **Evaluation through Continuous Quality Improvements**

Differences between Contents-Based Education and OBE (Killen, 2000)

Process Step	From: *Content Based Approach*	To: *OBE Approach*
Needs analysis	• A very few parties are consulted before trainers develop courses themselves. • Trainers decide on how needs are determined and expressed	• All stakeholders are consulted prior to curriculum development. • The end-product of needs analysis is reflected as unit standards.

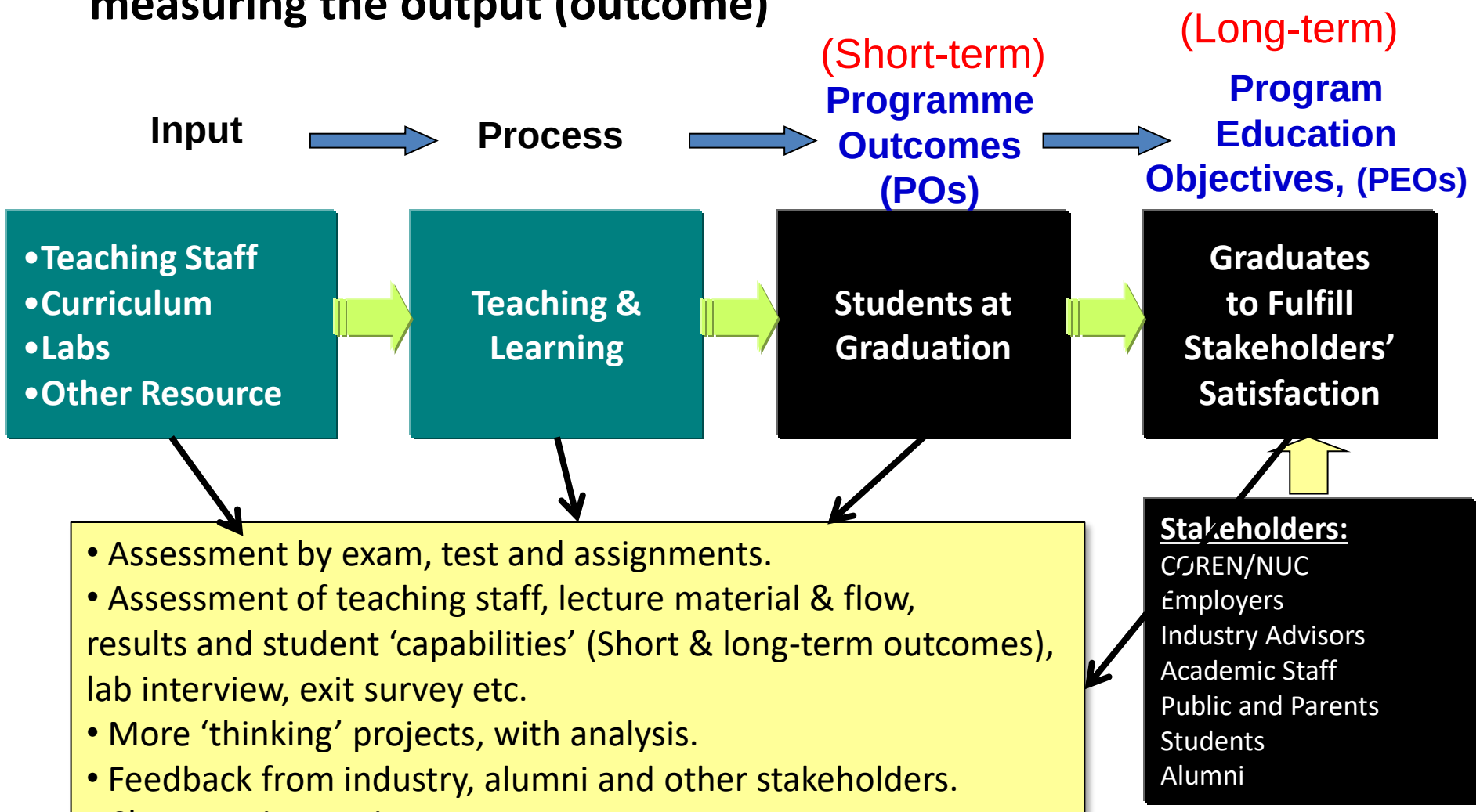
Comparison of OBE and Traditional Education Systems

- Traditional education process focuses on the inputs.



Comparison of OBE and Traditional Education Systems Cont---

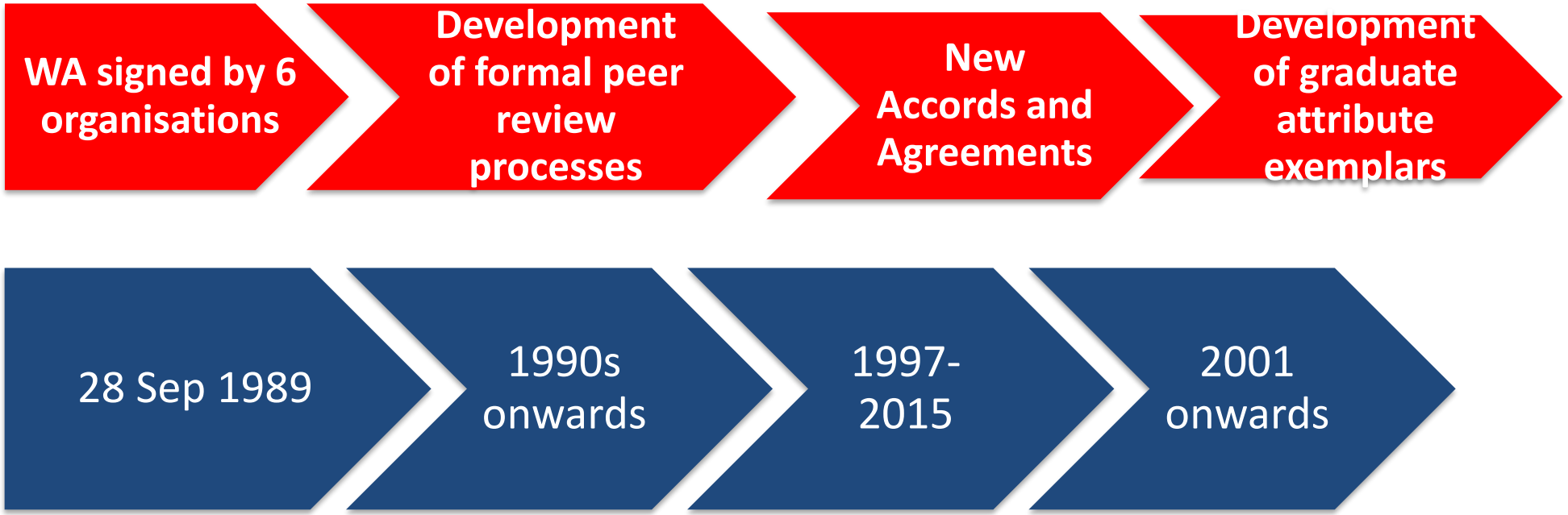
- OBE shifts from measuring input and process to **include measuring the output (outcome)**



Expectations under OBE

1. OBE helps to have a more direct & rational curriculum in terms of its responsiveness to the societal and national needs.
2. it enhances graduates employability in an ever growing and competitive world.
3. Enhances universities – community and stakeholders relations.
4. OBE enhances university's visibility and ranking.
5. Students are expected to acquire the 21st Century Skill.
6. OBE will become a pre-requisite for Accreditation of Engineering Programme by COREN.
7. OBE will helps COREN to meet requirement of joining Washington Accord and International Engineering Alliance.

Historical Development of International Engineering Alliance



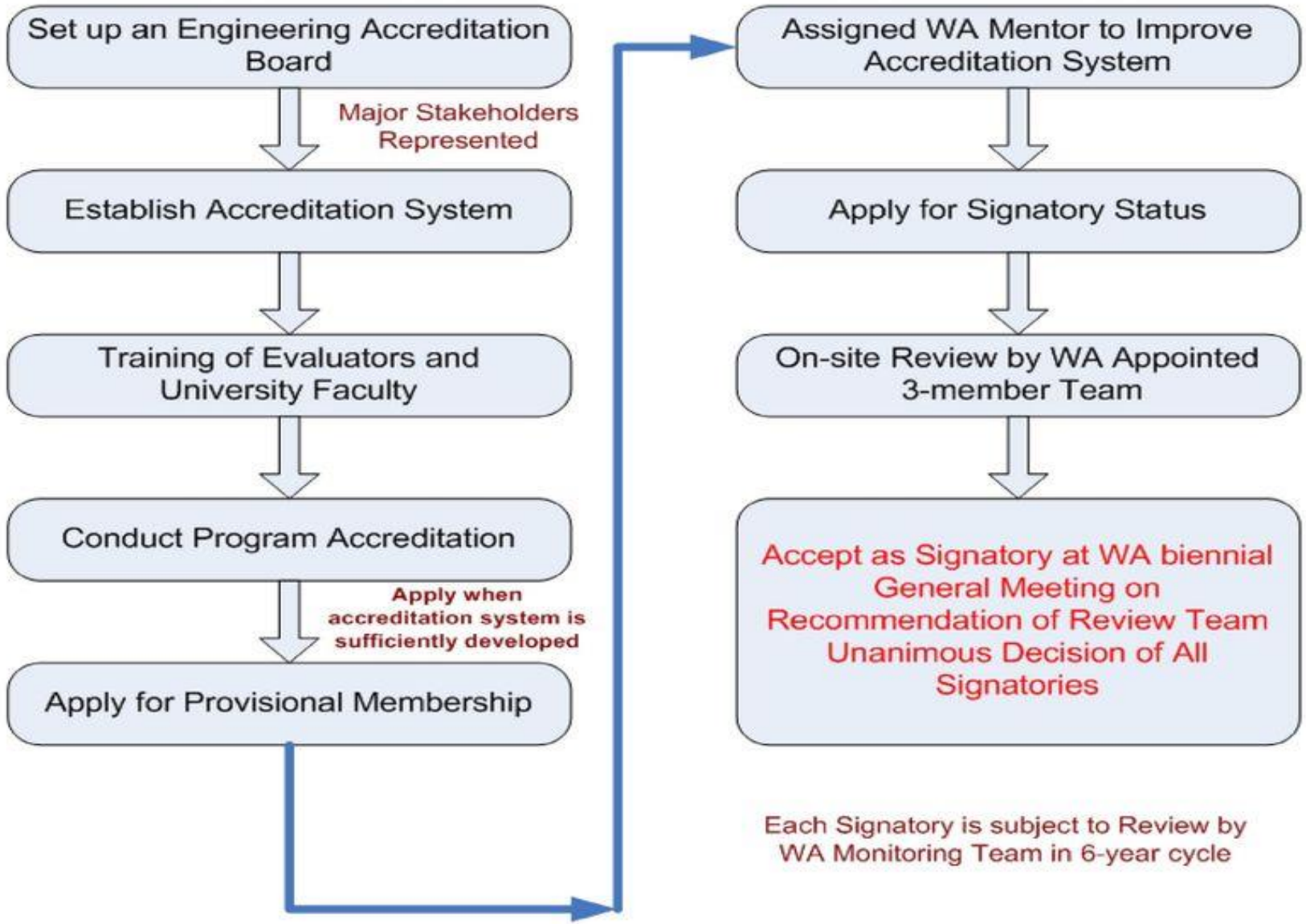
IEA Established in 2007

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

1. Tertiary education could provide both **professional knowledge/skills** and **all-round attributes** to their ***graduates*** through the OBE approach.

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

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

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

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of School Administrators

Thank you

The End

Q & A