Outcome Based Education (OBE)

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Why OBE?

- Concerns that the education system may not adequately prepare students for life and work have prompted a review of education.

- Is Traditional Education (TE) adequate?
Traditional Education

- It is pre-2004.
- It is content oriented.
- Different degrees have their associated syllabi.
- Relevant contents are taught and examined.
Deficiencies of TE

- Graduates are not completely prepared for the workforce.
- **Lack of emphasis** on soft skills needed in jobs e.g. communication skills, office skills, human relationships skills.
Birth of OBE

- In 1989, 5 countries signed the Washington Accord. They are: Australia, New Zealand, the UK, Canada, Ireland & the USA.
- Other full signatories are Hong Kong (1995), South Africa (1999), Japan (2005), Singapore (2006), Taiwan (2007), Korea (2007)
- Provisional members include Malaysia, Germany, India, Russia and Sri Lanka.
Signatories have full rights of participation in the Accord; qualifications accredited or recognised by other signatories are recognised by each signatory as being substantially equivalent to accredited or recognised qualifications within its own jurisdiction.

Organisations holding provisional status have been identified as having qualification accreditation or recognition procedures that are potentially suitable for the purposes of the Accord; those organisations are further developing those procedures with the goal of achieving signatory status in due course; qualifications accredited or recognised by organisations holding provisional status are not recognised by the signatories.
The Washington Accord

- The Accord recognises the substantial equivalency of accreditation systems of member states, & graduates from member states may work in other member states.
- The Public Service Department (PSD), Board of Engineers Malaysia (BEM), Malaysian Qualifications Agency (MQA) & Institute of Engineers (IEM) together form the Engineering Accreditation Council (EAC).
- EAC signed for Malaysia.
What is OBE?

- It is a method of curriculum design and teaching that focuses on what students can actually do after they are taught.

These questions are asked:
- What do you want the students to learn?
- Why do you want them to learn it?
- How can you best help students to learn it?
- How will you know what they have learnt?
OBE vs Traditional Education (TE)

- OBE’s instructional planning process is a reverse of that associated with TE planning.
- The desired outcome is selected first and the curriculum, instructional materials and assessments are created to support the intended outcome.
- All educational decisions are made based on how best to facilitate the desired outcomes.
What are expected of students under OBE?

- Students are expected to be able to do more challenging tasks other than memorise and reproduce what was taught.
- Students should be able to: write project proposals, complete projects, analyse case studies, give case presentations, show their abilities to think, question, research, and make decisions based on the findings.
Students are also expected to be

- creative,
- able to analyse and synthesise information.
- able to plan and organise tasks,
- able to work in a team as a community or in entrepreneurial service teams to propose solutions to problems and market their solutions
Assessments in OBE

- The learning outcomes are set out sequentially on a gradation of increasing complexity that students are expected to master.
- OBE focuses on how much and how well the students have learnt.
- Weaker students may have to follow a different learning path & finish later.
The need to implement OBE

- Undergraduate curriculum needs to be transformed into OBE in accordance with requirements from:
  1. Engineering Accreditation Council, Malaysia and
Implementing OBE

There are 3 prongs involved in implementing OBE.

1. Listing and achieving Unit Learning Outcomes (ULO).
2. Listing and achieving Programme Outcomes (PO).
3. Listing and achieving Programme Education Objectives. (PEO).
Example of Unit Learning Outcomes (for the course on Electromagnetism)

- a. Student can apply the Maxwell's Equations in the studies on electromagnetic fields.
- b. Student can describe the propagation of wave in a medium, and understands the effect of wave reflection and transmission.
- c. Student can find the main characteristics of transmission line and waveguide
d. Student can illustrate radiation patterns from antenna in the far-field.

e. Student understands the effect of electromagnetic interference and ways to ensure electromagnetic compatibility (EMC).
Programme Outcomes (PO)

PO are outcomes the students should have achieved by graduation time.
For the Electrical Engineering Department at UTAR, the chosen PO are:

1. Ability to apply acquired fundamental knowledge of science and engineering.
2. Possess the relevant technical skills in electrical and electronic engineering.
3. Ability to identify, formulate and solve problems of high- and low-power circuits and systems.

4. Ability to design & evaluate an electrical or electronic system based on systems approach.

5. Ability to communicate effectively.
6. Ability to function effectively as an individual and in a group.

7. Ability to understand and commit to prevailing professional and ethical responsibilities.

8. Be aware of the current good practices in electrical & electronic engineering for sustainable development.
9. Recognize the importance of and be able to engage in life-long learning.

10. Be aware that a professional engineer’s work have social, cultural, global and environmental ramifications.
Programme Educational Objectives (PEO)

These are objectives that have to be achieved by a graduate several years after graduation.

Examples of PEO are:

- Has basic mastery of knowledge and skills needed to be an efficient engineer.
- Has professional attitude and ethics in fulfilling his role.
PEO (cont. 1)

- Capable of adapting to the global work environment.
- Be capable of providing leadership in the organisation he works in.
- Capable of conducting research for his organisation.
OBE & Quality Management

- OBE is implemented to ensure that our academic programmes, delivery system, assessment methods and our graduates are of high quality.
- The paradigm shift to OBE is driven by the Quality Assurance Department at the Ministry of Higher Education, Malaysia currently known as Malaysia Quality Agency (MQA).
Quality Management (cont.)

- MQA is responsible for developing and implementing a national framework, the “Malaysian Qualifications Framework”.
- These consists of qualifications offered by higher education providers based on a set of criteria including the learning outcomes achieved and credits based on students’ academic workload.
The End

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