An Overview of Implementation of OBA in the Department of Applied Mathematics

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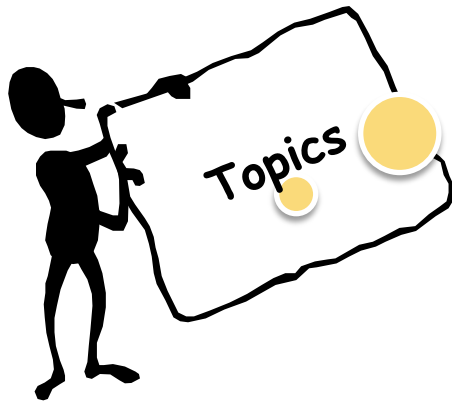14 Dec 2009
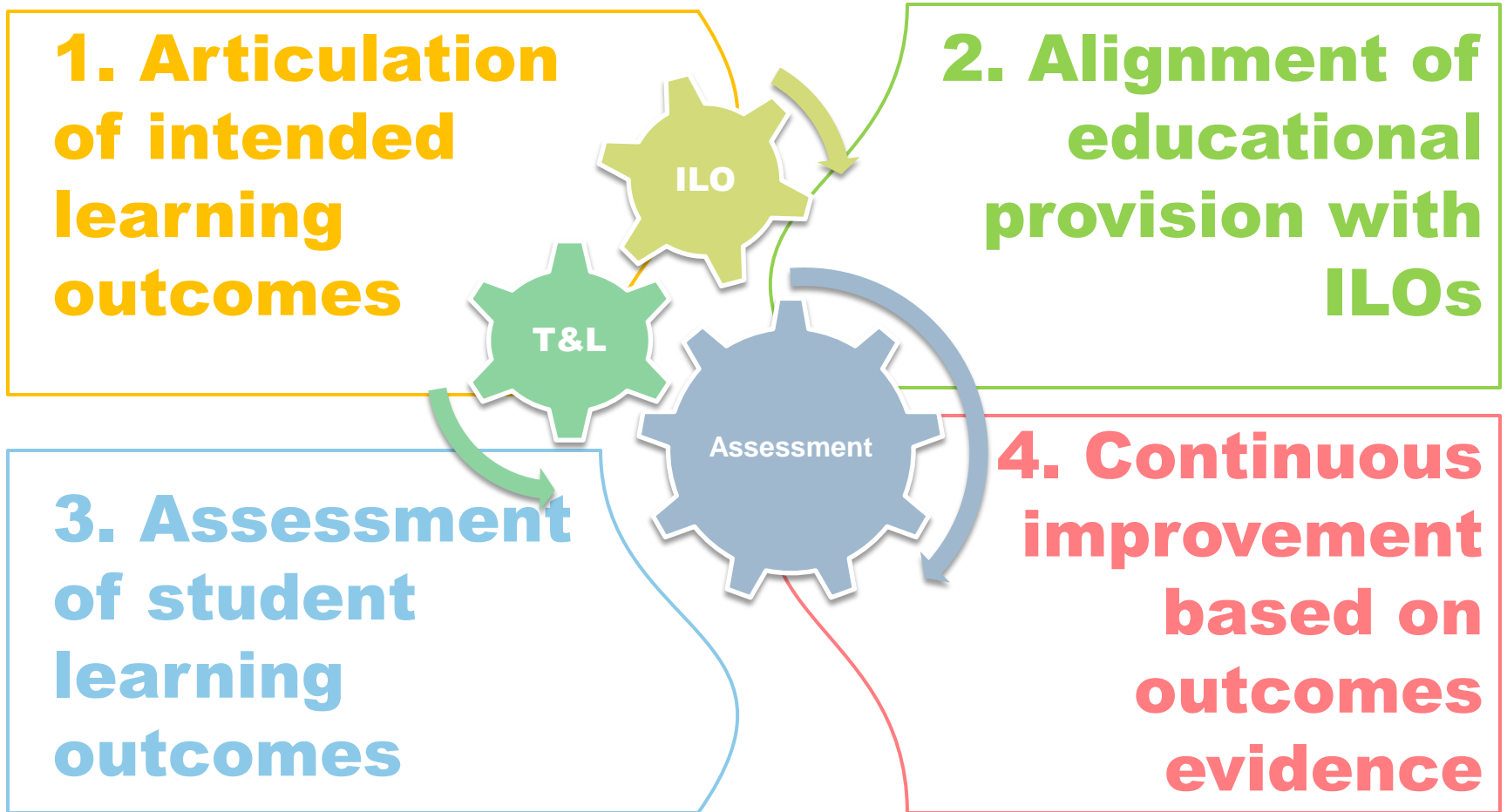
DEPARTMENT OF APPLIED MATHEMATICS
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Let's talk about

▸ the steps we have gone through to implement programme outcomes assessment;

▸ our approaches to promote the use of OBA to teaching and learning.

Topics

Outcome Based Approach to student learning: a four-stage model

1. Articulation of intended learning outcomes

2. Alignment of educational provision with ILOs

3. Assessment of student learning outcomes

4. Continuous improvement based on outcomes evidence

ILO

T&L

Assessment

Recent Project

▸ OBA Project Funded in 2007-08.

▸ OBA Area: Assessment of programme outcomes.

▸ Covers all undergraduate programmes:

❖ Bachelor of Science (Honours) in Investment Science

❖ Bachelor of Science (Honours) in Actuarial Science

❖ Bachelor of Science (Honours) in Statistics and Computing

▸ Objectives:

○ **To guide the programme assessment process.**

○ **To promote the use of OBA in teaching, learning and assessment.**

Move through the preparation process

▸ **The seven-step process**

1. Solicit **expert advice** and get faculty support.
2. Define **intended learning outcomes**.
3. Review the **alignment** between the programme outcomes and subjects of the curriculum. (curriculum mapping)
4. Develop programme **learning outcomes assessment plans**.
5. Formulate **departmental procedures and guidelines** for OBE.
6. Encourage and support academic staff to implement OBE.
7. Communicate the intended learning outcomes to **students**.

Step 1

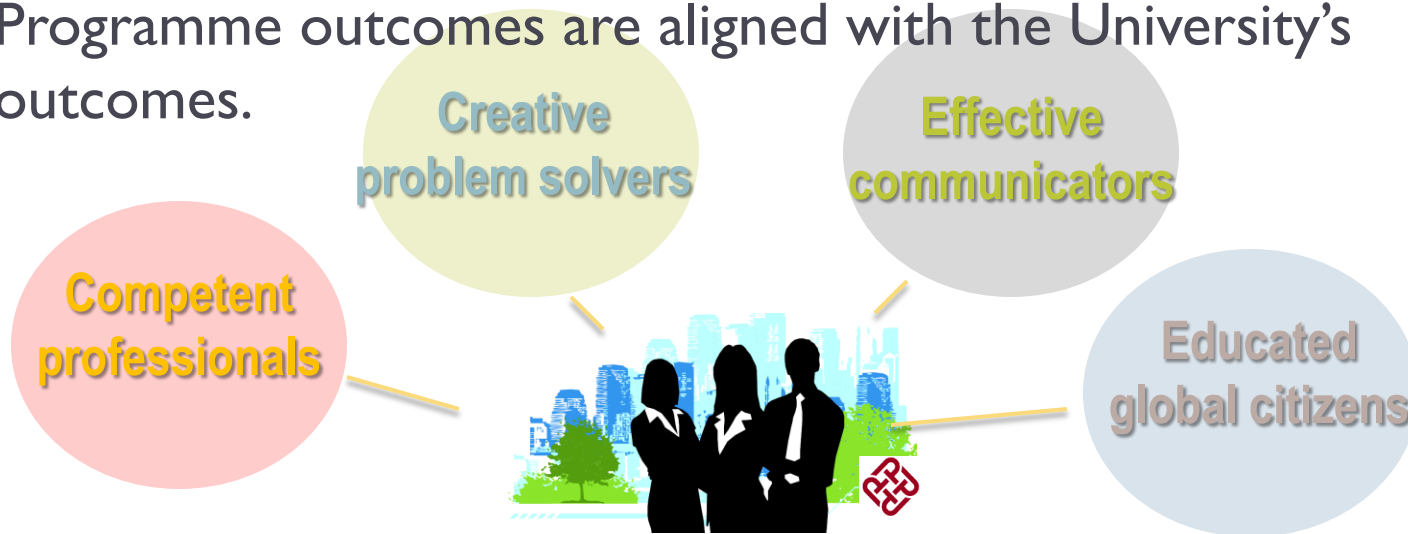▸ **Solicit expert advice and get faculty support.**

- ❑ Guest speakers were invited to the Department to discuss with colleagues on OBE.

- ❑ Topics covered in the seminars:
    - ✓ OBE and how it should change the way we teach and assess students.
    - ✓ Designing an implementation plan for AMA Learning Outcomes Assessment Plan.
    - ✓ Alignment of teaching and assessment methods on graduate attributes at PolyU.

- ❑ Encouraged all programmes to take ownership.

Step 2

▸ **Define intended learning outcomes.**

- ❑ Programme assessment begins with a clear articulation of intended learning outcomes.
- ❑ All programmes have reviewed the intended learning outcomes at the programme/subject levels.
- ❑ Programme outcomes are aligned with the University's outcomes.

Creative
problem solvers

Effective
communicators

Competent
professionals

Educated
global citizens

Step 3

▸ **Review the alignment between the programme outcomes and subjects of the curriculum.**

❑ Curriculum has been mapped to the programme outcomes to help achieve alignment.

❑ It is useful to see the curriculum map in order to understand the selection of subjects for assessment.

Programme Outcomes	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
PILO 1	I	R	R A	R	
PILO 2			I	R A	R
PILO 3	I				R A
PILO 4		R A		I	
PILO 5	I		R A		

EXAMPLE ONLY

(I=Introduced, R=Reinforced, A=Assessed)

Step 4

▸ **Develop programme LOAPs.**

❑ The Department has developed **Learning Outcomes Assessment Plans (LOAPs)** to ensure systematic collection of assessment data.

❑ Assessment results will be evaluated and discussed in the Programme Committee meetings.

❑ The Departmental Learning and Teaching Committee and the Programme Leaders will closely monitor the implementation of the LOAPs.

Step 4

▸ **Develop programme LOAPs.**

Key features:

❑ Use a **three-year cycle** to ensure that the assessment plan is feasible and affordable with given resources.

❑ Concentrate on a **manageable number of programme outcomes**.

❑ Assessment processes are **documented and communicated**.

❑ Involve **academic staff and supporting staff**.

❑ **Multiple methods** are used to measure each outcome.
  - ✓ Direct measures
  - ✓ Indirect measures

Step 4

▸ **Develop programme LOAPs.**

Assessment methods:

Assessments are aligned with intended learning outcomes.

Problem questions

Oral presentations

Case-studies

Written surveys

Student reports

Step 4

1. Alumni Survey

▸ **To solicit alumni's views on how well our programmes have prepared students for their professions after graduation.**

▸ **Types of survey questions:**
  ○ Attainment of programme outcomes.
  ○ Employment status/ industry/ salary.
  ○ Overall contribution of programmes.
  ○ Open-ended comments (for programme improvement).

▸ **E-survey.**
▸ **Follow up email/telephone reminder.**

2. Employer Survey

▸ **To gather responses from employers on their perception on the importance of graduate attributes and the quality of our graduates.**

▸ **Types of survey questions:**
  ○ Desirable graduate attributes.
  ○ Level of satisfaction with our graduates' work qualities.
  ○ Open-ended comments (for programme improvement).

▸ **Paper-based.**
▸ **Telephone reminder.**

Step 5

▸ **Formulate departmental procedures and guidelines for OBE**

❑ Specify the scope & method of assessment.

❑ Describe the procedures for assessing the achievement of outcomes.

❑ Ensure consistency.

❑ Outline the assessment standards.

❑ Provide a standard template for reporting of assessment data.

❑ Ensure assessment results are disseminated and used for programme evaluation.

Step 6

▶ **Encourage and support academic staff to implement OBE.**

- ❑ **Seminars and workshops on the practical implementation of OBE** were organized for colleagues.
- ❑ **Meetings** were held with programme leaders and subject lecturers to facilitate exchange of views on OBE.
- ❑ **Staff briefing sessions** were arranged to explain the assessment procedure before pilot implementation.
- ❑ **Instruction guidebooks & reference materials** are provided to each academic staff.
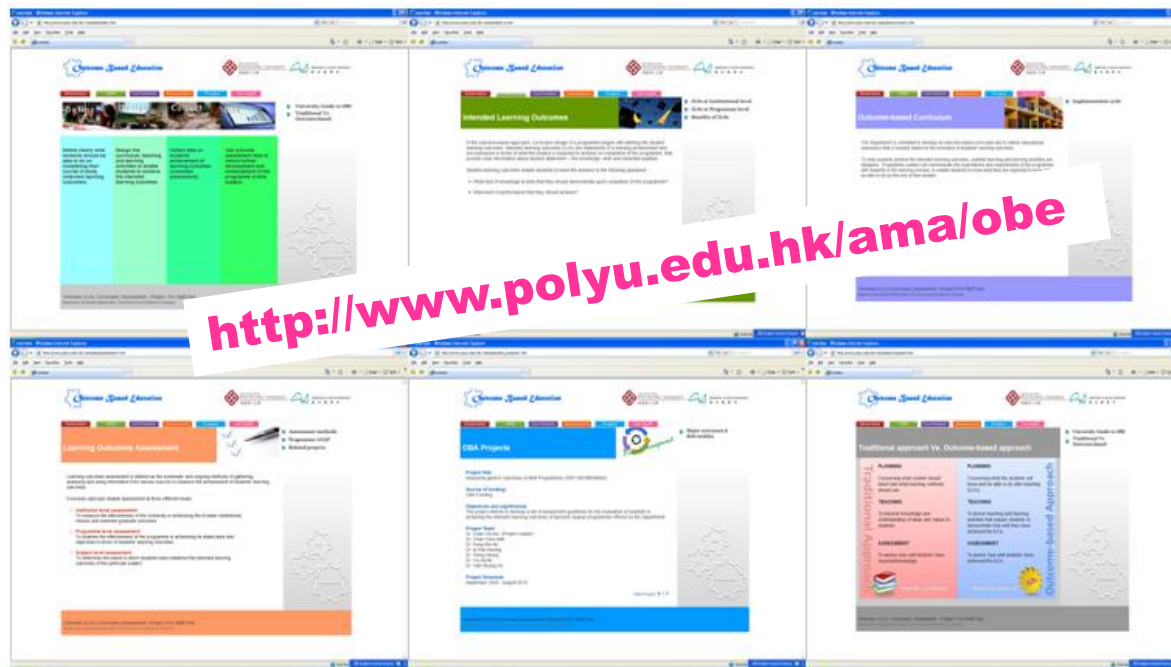
Step 7

▶ **Communicate the intended learning outcomes to students.**

❑ Introductory handbook (for our new students)

❑ Definitive programme document

❑ Student briefing sessions

❑ OBE website

Further information

OBE website:

http://www.polyu.edu.hk/ama/obe

- An overview of OBA in teaching and learning.
- Intended learning outcomes for graduates.
- Learning outcomes assessment methods.
- Related OBE projects.
- Useful resources.

The END

Thank you very much!