Development of Comprehensive Approach for Assessing General Education: A Case of Hong Kong

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Centre for Holistic Teaching and Learning
Outline

• Contexts
• Assessment Framework
• GE PILOs Assessment at HKBU
• Direct and Indirect Assessment Methods
• Some Results of GE PILOs (AY2012-2013)
Contexts

• Aiming at equipping students with series of generic and transferable knowledge, skills and attitudes on top of majors, General Education (GE) Programme plays an irreplaceable role in helping students attain the university-level learning outcomes that ultimately forge their competitiveness in globalized economy and help them become global citizens;

• However there is lack of a more comprehensive approach to assess the accomplishment of GE learning outcomes, including a systematic process, effective assessment criteria and holistic evidence (Bresciani, 2007; Judd & Keith, 2012);

• This showcase aims to present a more comprehensive assessment approach for GE.
The Assessment Framework: Evidence Collection Initiative (ECI) for Outcome Assessment

• To provide an **aggregate set of evidence** for Outcomes Assessment (OA)
  – i.e. to ascertain how well students have achieved the intended learning outcomes (ILOs) based on a **three-tier data collection** mechanism in systematically collecting holistic and multi-faceted evidence of learning and teaching at the **course, programme** and **university levels**.
The Evidence Collection Initiative (ECI) for Outcomes Assessment

Course Embedded Assessment (CEA)
Formative Review Exercise (FRE)
Aggregated CEA
Learning Experience Inventory – Programme (LEI-P)
University Academic Test (ETS Proficiency Profile/Academic Proficiency Test)
Learning Experience Inventory – Programme (LEI-P)
PILOs Assessment (for Section C of the Annual Programme QA Report)

Outcomes Assessment

Identification of strengths and weaknesses
Discussion on possible interventions
Recommendations for continuous T & L improvement

Evidence of Students’ Achievement

Curriculum
Programme Level
Course Level
University Level
Co-Curricular Activities

Quality enhancement & assurance

Direct Measurement
Indirect Measurement
Feedback Loop

CHTL/February 2014
## Hong Kong Baptist University

### 7 Graduate Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Citizenship</strong></td>
<td>Be responsible citizens with an international outlook and a sense of ethics and civility;</td>
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<tr>
<td><strong>Knowledge</strong></td>
<td>Have up-to-date, in-depth knowledge of an academic specialty, as well as a broad range of cultural and general knowledge;</td>
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<tr>
<td><strong>Learning</strong></td>
<td>Be independent, lifelong learners with an open mind and an inquiring spirit;</td>
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<tr>
<td><strong>Skills</strong></td>
<td>Have the necessary information literacy and IT skills, as well as numerical and problem-solving skills, to function effectively in work and everyday life;</td>
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<tr>
<td><strong>Creativity</strong></td>
<td>Be able to think critically and creatively;</td>
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<tr>
<td><strong>Communication</strong></td>
<td>Have trilingual and biliterate competence in English and Chinese, and the ability to articulate ideas clearly and coherently;</td>
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<tr>
<td><strong>Teamwork</strong></td>
<td>Be ready to serve, lead and work in a team, and to pursue a healthy lifestyle.</td>
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<tr>
<td>HKBU GAs</td>
<td>Name of the rubric created</td>
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<td><strong>CITIZENSHIP</strong></td>
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<td>Social/Civic Responsibility</td>
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<td>Cross-cultural Competence</td>
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<td>Self-Development/Spirituality</td>
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<td><strong>TEAMWORK</strong></td>
<td>Team Building</td>
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<td>Health Awareness</td>
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GE PILOs Assessment at HKBU

- GE programme at HKBU aims to provide students with exposure to a range of transferable skills, guiding principles and attitude that are **generic to their professional and personal development**.

- In absence of programme-level rubric, direct adoption of **Graduate Attribute (GA) Rubrics** is considered appropriate and applicable.
# Mapping of GE PILOs with HKBU GAs

<table>
<thead>
<tr>
<th>PILO</th>
<th>Description</th>
<th>Citizenship</th>
<th>Knowledge</th>
<th>Learning</th>
<th>Skills</th>
<th>Creativity</th>
<th>Communication</th>
<th>Teamwork</th>
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<td>PILO1</td>
<td>Communicate effectively as speakers and writers in both English and Chinese</td>
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<td>PILO2</td>
<td>Access and manage complex information and problems using technologically appropriate means</td>
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<td>PILO3</td>
<td>Apply appropriate mathematical reasoning to address problems in everyday life</td>
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<td>PILO4</td>
<td>Acquire an active and healthy lifestyle</td>
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<td>PILO5</td>
<td>Use historical and cultural perspectives to gain insight into contemporary issues</td>
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<td>PILO6</td>
<td>Apply various value systems to decision-making in personal, professional, and social/political situations</td>
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<td>PILO7</td>
<td>Make connections among a variety of disciplines to gain insight into contemporary personal, professional, and community situations</td>
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4 GE PILOs Selected for Assessment (AY2012-2013)

1. Communicate effectively as speakers and writers in both English and Chinese (assessed by Language courses);

2. Access and manage complex information and problems using technologically appropriate means;

3. Apply appropriate mathematical reasoning to address problems in everyday life (assessed by selected Numerical courses);

4. Acquire an active and healthy lifestyle (assessed by Health courses);

5. Use historical and cultural perspectives to gain insight into contemporary issues;

6. Apply various value systems to decision-making in personal, professional, and social/political situations (assessed by selected Ethics courses);

7. Make connections among a variety of disciplines to gain insight into contemporary personal, professional, and community situations.
Direct and Indirect Assessment

• Direct Assessment
  ➢ Instrument: Aggregated Course Embedded Assessment (CEA)
  ➢ Tool: *Bb Learn and Outcomes System* (Bb Outcomes)

• Indirect Assessment
  ➢ Formative Review Exercise (FRE)
    • Study Process Questionnaire (SPQ): *conducted at the beginning (SPQ1) and the end (SPQ2) of the semester*
    • Learning Experience Inventory–Course (LEI-C): *conducted at the end of the semester*
  ➢ plus tailor-made questions for GE courses: *attached with LEI-C*
Direct Assessment

• Instrument:
  – Aggregated Course Embedded Assessment

• Tool:
  • Bb Learn and Outcomes System (Bb Outcomes)
Direct Assessment: Procedures

1. The representative GE courses selected by the assessment team

2. Select the major assignment(s) from each course that can best represent a PILO to be assessed

3. Decide which **Graduate Attribute (GA) Rubric(s)** should be used as assessment criteria;

4. the representative student works from each course were pooled together for assessment.

5. Assess the assignments by using the selected GA Rubric(s) and through sampling approach;

6. Discuss and conclude the Assessment Result

Note: *In each course, instructor still can use their course rubrics to grade, outcome assessment results will NOT affect their grading results.*
Bb Outcomes

• Collecting and storing student assignments

• Sampling

• Enable instructors to use rubrics to assess directly in the system

• Automatically generating assessment report(s)
Indirect Assessment

• Formative Review Exercise (FRE)
  – Since AY2010-11, the Formative Review Exercise (FRE) has been used to collect qualitative and quantitative data to provide perspectives on student learning experience at HKBU.
Design of FRE

• **Quantitative:**
  – Study Process Questionnaire (SPQ)
    • Conducted at the beginning (SPQ1) and the end (SPQ2) of semester
    • Examining students’ change in their learning approaches
  – Learning Experience Inventory–Course (LEI-C)
    • Conducted at the end of the semester
    • Examining students’ learning experiences from courses under OBTL
    • Alignment Index: 15 as highest
    • Tailor made questions for GE

• **Qualitative:**
  – Focus groups with students
  – In-depth interviews with teachers
GE PILOs Assessment - Highlights

AY2012-2013
Breakdown of Sample Size

Direct Assessment:
- **4 Selected Numerical courses**
  - 80 samples
- **2 Selected Ethics courses**
  - 36 samples
- **All 2 Language courses**
  - Course A: 90 samples
  - Course B: 100 samples
- **All 9 Health courses**
  - 720 samples (all students)

Indirect Assessment:
- **All Numerical courses**
  - 15 course units;
  - 425 valid responses;
- **All Ethics courses**
  - 8 course units;
  - 168 valid responses;
- **All Language courses**
  - 5 course units;
  - 29 valid responses;
- **All Health courses**
  - 2 course units;
  - 21 valid responses;
An Example - Result of Direct Measure (Bb Report) (for PILO3)

Evidence Set Evaluation Roll-up

Rubric Analysis
Quantitative Reasoning

- Interpretation: Possible 4.00, Actual 3.43
- Representation: Possible 4.00, Actual 3.59
- Calculation: Possible 4.00, Actual 3.74
- Application / Analysis: Possible 4.00, Actual 3.31
- Assumptions: Possible 4.00, Actual 3.13
- Communication: Possible 4.00, Actual 2.98
<table>
<thead>
<tr>
<th>An example: Assessing GE PILO 3 using Quantitative Reasoning GA rubric</th>
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## Indirect Measure - FRE

*(Course Unit Base)*

<table>
<thead>
<tr>
<th>Academic Year and Semester</th>
<th>No. of Valid# Course Units*</th>
<th>Population (Enrollment Size of participating GE Courses)</th>
<th>Total Responses (% of population)</th>
<th>Valid# Responses (% of population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AY 2012-13</td>
<td>30</td>
<td>4,373</td>
<td>2,067 (48%)</td>
<td>643 (15%)</td>
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</tbody>
</table>

**Notes:**

^ Original total number of participating GE courses was 19, but one course had been opted out.

# Criteria of Valid:

- Course unit with % of Population Responding > 20%
- A response was not answered in a particular pattern consistently
- A response with Student ID, Course Code, and Session Number

*Course unit: course with multiple sections taught by same instructor*
### Alignment Index of 30 GE Course Units (AY2012-13)

<table>
<thead>
<tr>
<th>Course Unit</th>
<th>Mean Score of Alignment Index</th>
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<tbody>
<tr>
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<td>Course Unit 30</td>
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Correlation: Alignment Index and Learning Approaches/Experience (n=30)

Alignment Index

Difference of Surface Approach, -0.580***
Difference of Deep Approach, 0.655***

* = p ≤ 0.05; ** = p ≤ 0.01; *** = p ≤ 0.001
1. I have learnt the knowledge in other disciplines from this course.  

2a. think ethically and make ethical judgement.  

2b. become responsible in the society and get along well.  

2c. build up your self-identity and continue to develop yourself.  

2d. use information and information technologies effectively.  

2e. apply logical/mathematical reasoning to handle and solve...  

2f. Create new ideas.  

2g. analyze and criticize ideas from different angles.  

2h. communicate effectively through oral and written English and Chinese.  

2i. participate actively and work effectively in team.  

2j. have a healthy physical and mental lifestyle.
Aggregation of Direct & Indirect Assessment Results

• The four type of courses are the core requirements primarily for the respective PILOs assessed. Based on the results of the assessment done in 2012-2013, it can be suggested that students are on the right track in achieving the corresponding elements in PILO1, PILO3, PILO4 and PILO6.

• Indirect assessment results also support students are on the right track in the achievement of PILOs

• Students found that they have achieved learning outcomes, reflected by high mean scores in self-perceived achievement of GAs or part of GAs aligned:
  – Numerical Courses: 4.12 (Quantitative Reasoning)
  – Ethic Courses: 3.97 (Ethical Reasoning)
  – Language Courses: 4.18 (Communication)
  – Heath Courses: 4.38 (Health Awareness)
Reflections

- It is derived from this showcase that, the ideal GE assessment should:
  - be on top of each selected courses (not courses bound), and be not specific to individual instructors;
  - prefer not using course grades, as they align to various PILOs;
  - use Programme or GA Rubrics to assess;
  - utilize the existing assessment method(s) in selected course(s) that can best represent a particular PILO (i.e. Course-Embedded Assessment);
  - pool students’ mature works together, if two or more courses selected;
  - use sampling, for sustainability purpose;
  - be better aided by a specialized IT system for maintaining efficiency and effectiveness.
References


Hong Kong Polytechnic University (HK PolyU) (2008) Developing a Programme Learning Outcomes Assessment Plan, Hong Kong: HK PolyU.


Thank you!