THE UNIVERSITY OF HONG KONG

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University of Macau – CTLE Fall Workshop 2015

Evidence Based Student Learning Outcomes: Relevance and Utility

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Expected Outcomes

- To comprehend and be aware of why we need to collect evidence of student learning
- To identify and apply ways of how these evidence are collected
- To share our opinions and ideas on this topic, whether it is positive or negative, useful or impractical
- To network and share practice on generic skills assessment

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Developing Evidence for Student Learning:

QUALITY

"Quality Assurance"

"Quality Enhancement"

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Curriculum Reform (CR)

National Level

Institutional Level

Faculty Level

Course Level

Accreditation Body Level

Other Curriculum Reforms

- The Bologna Process
- The Melbourne Model
- The Harvard's Task Force on Education
- University of Aberdeen's Curriculum Reform
- Engineering Criteria 2000
- 334 Hong Kong Curriculum Reform

Curriculum Reform

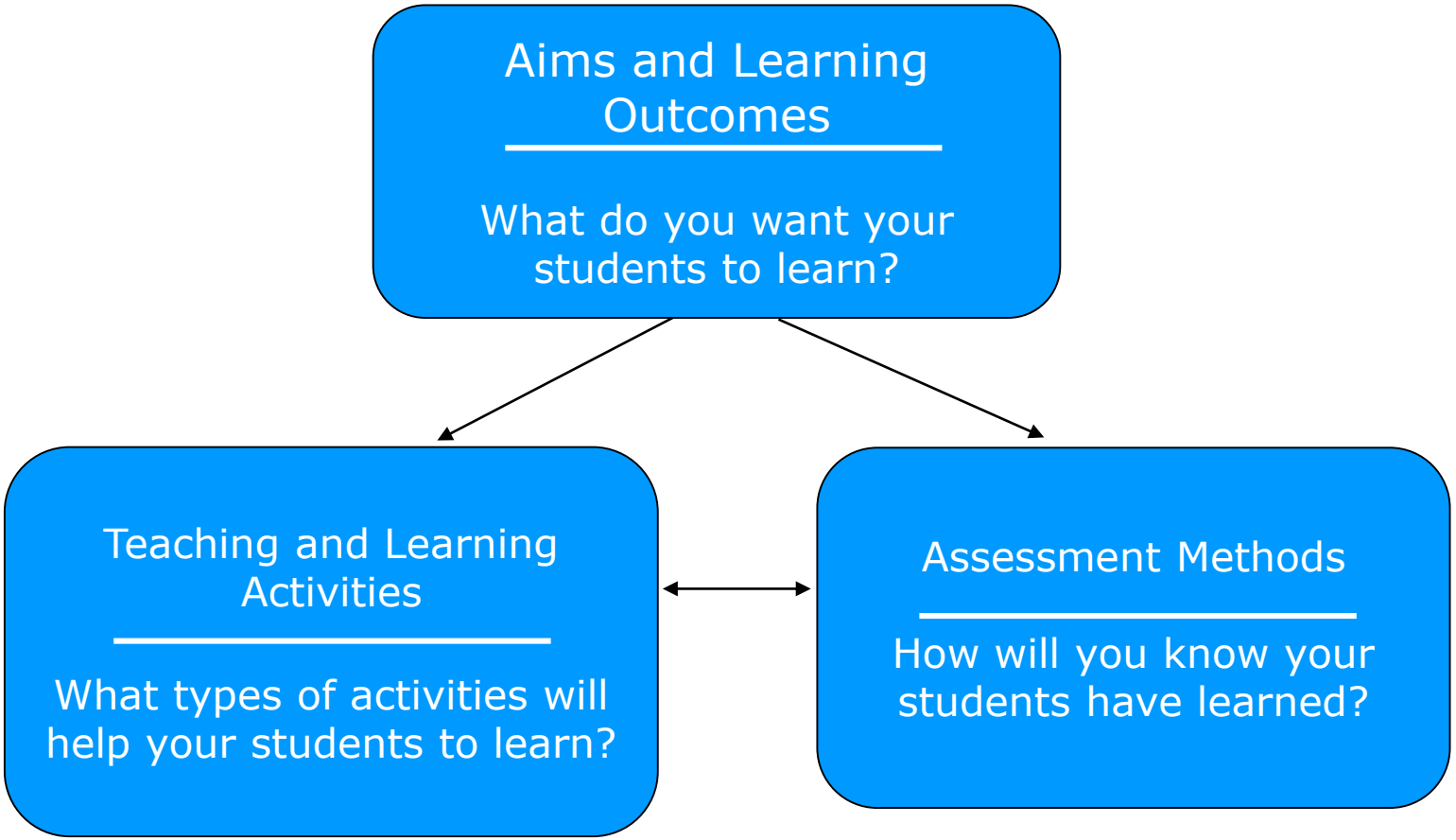
- Educational system
- Programme structures
- Programme objectives
- Changes in approaches to teaching
- Changes in approaches to learning
- Changes in student learning outcomes

CR in Hong Kong Higher Education

HK Government Requirement – Our funding body asked of us:

- Adopted Outcomes Based Approach to Student Learning (OBASL)
- All our degrees are to have 1 additional year
- To develop whole person and all-rounded education in the higher education reform

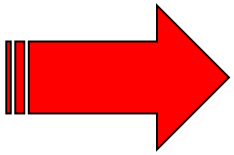
Outcomes Based Approach to Student Learning - OBASL



Quality Assurance Audit

First Audit (2007 - 11) focused

- on the operation of quality systems at the level of the subject and included the assessment of a range of sample programmes

Shift from Process  **the Assessment of Outcomes**

Second Audit (2014 - 16) focuses

- enhancing the student learning experience particularly on student achievement and global engagements

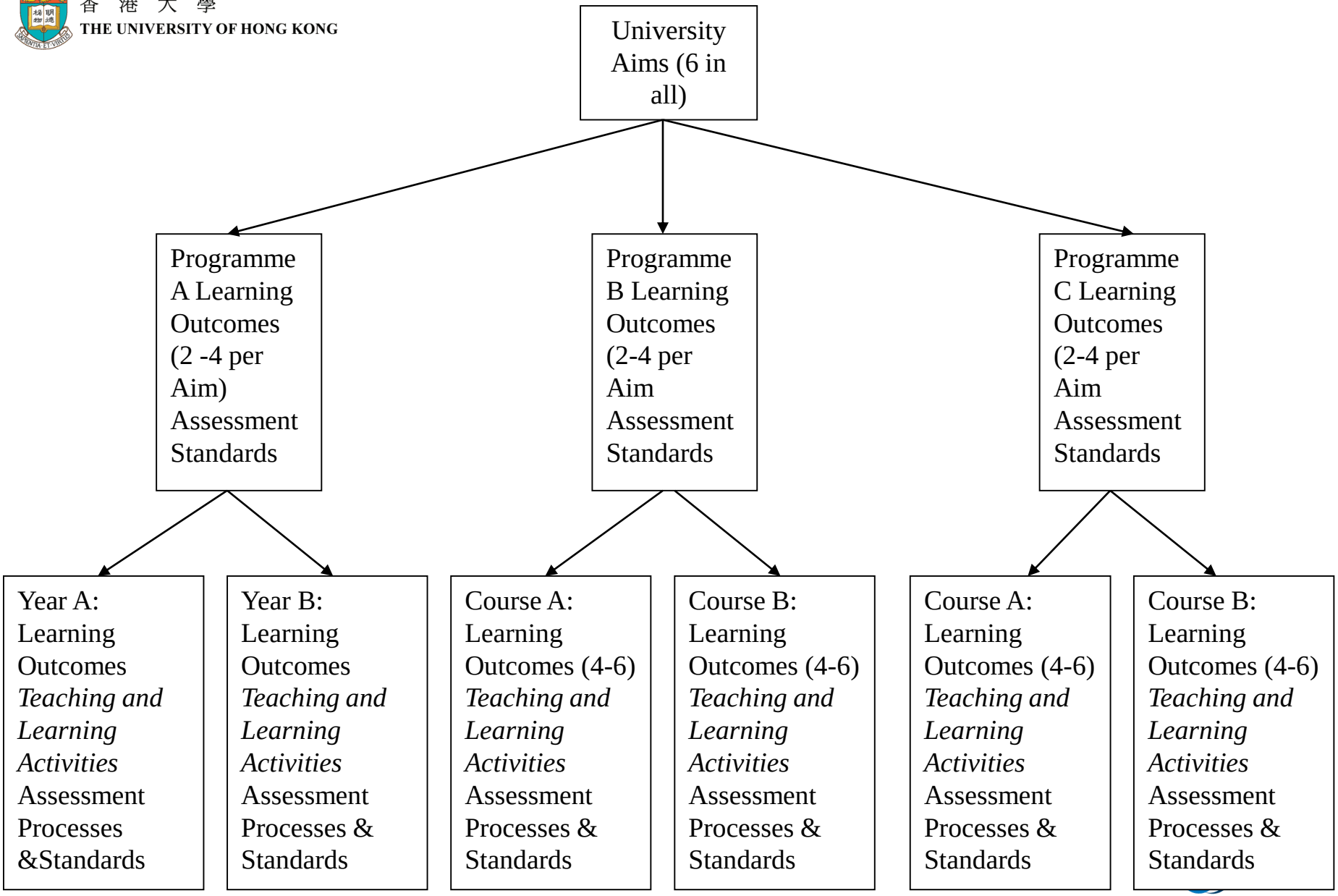
Discussion #1

Why are we collecting and providing evidence of student learning outcomes?

HKU University Aims

To enable our students to develop the capabilities in

1. Pursuit of academic/professional excellence, critical intellectual inquiry and life-long learning
2. Tackling novel situations and ill-defined problems
3. Critical self-reflection and greater understanding of others, upholding personal and professional ethics
4. Intercultural understanding and global citizenship
5. Communication and collaboration
6. Leadership and advocacy for the improvement of the human condition


University Aims (6 in all)
Programme A Learning Outcomes (2 -4 per Aim) Assessment Standards
Programme B Learning Outcomes (2-4 per Aim Assessment Standards
Programme C Learning Outcomes (2-4 per Aim Assessment Standards
Year A: Learning Outcomes *Teaching and Learning Activities* Assessment Processes &Standards
Year B: Learning Outcomes *Teaching and Learning Activities* Assessment Processes & Standards
Course A: Learning Outcomes (4-6) *Teaching and Learning Activities* Assessment Processes & Standards
Course B: Learning Outcomes (4-6) *Teaching and Learning Activities* Assessment Processes & Standards
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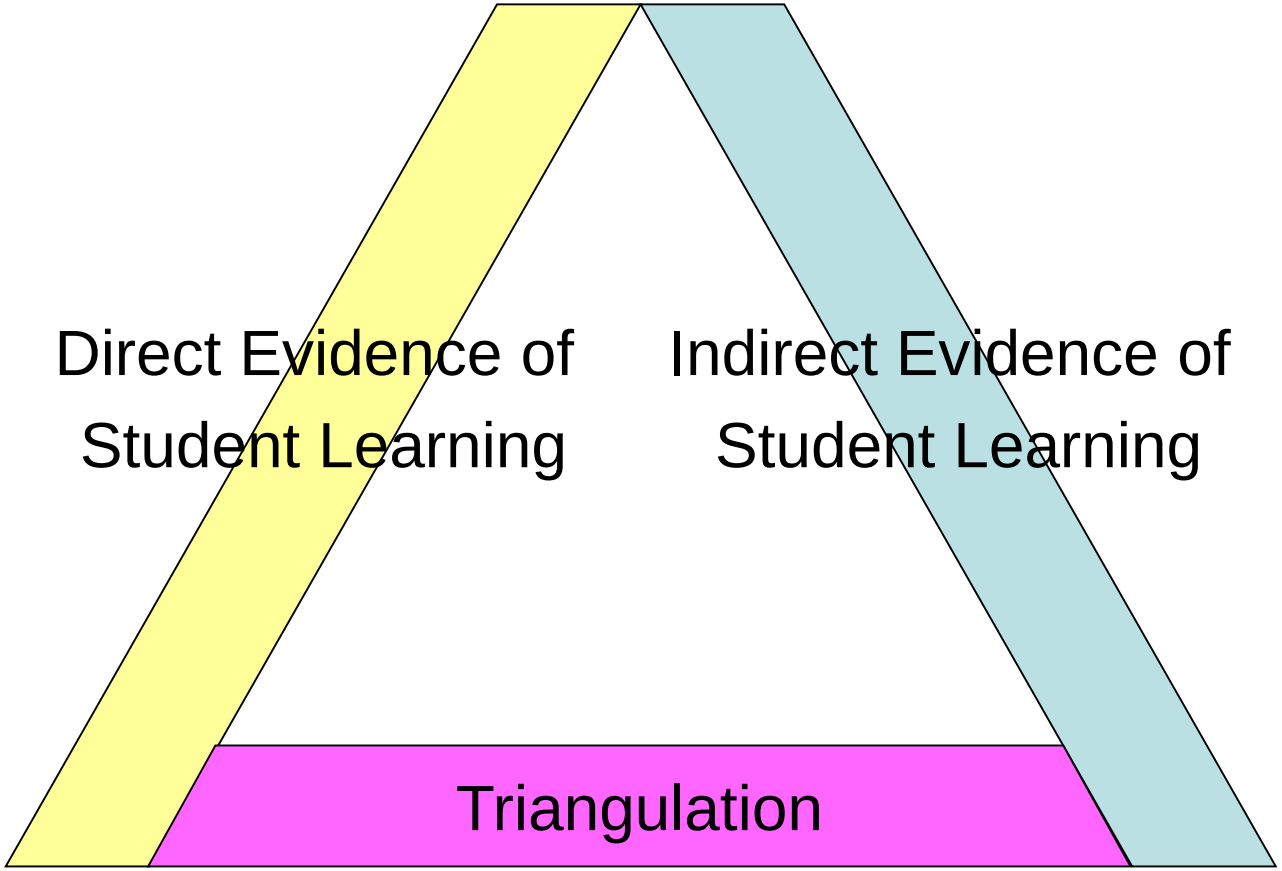
Course B: Learning Outcomes (4-6) *Teaching and Learning Activities* Assessment Processes & Standards

We need to provide ..



Direct Measures of Student Learning

- Capstone projects, senior theses, exhibits
- Portfolios
- Standardized tests
- Employer/internship ratings of students' performance
- Embedded course assessment
- External examiner reports

Middle States Commission, (2003)

Limitations of Direct Evidence

- No evidence of **why** students have learned or not learned
- Does not indicate “value-added”
  - Did students already have the knowledge or skills before completing the program?

Indirect Measures of Student Learning

- Focus groups/interviews
- Employer surveys
- Alumni surveys
- Registration/course enrollment information
- Department or program review data
- Job placement indicators
- Graduate school placement rates
- Comparisons with other institutions

Middle States Commission, (2003)

Limitations of Indirect Evidence

- Do not evaluate student learning per se
- Should not be the only means of assessing outcomes

Standardized Test

- College Learning Assessment test (CLA)
- Australian Graduate Skills Assessment (GSA)
- OCED Assessment of Higher Education Learning Outcomes (AHELO)

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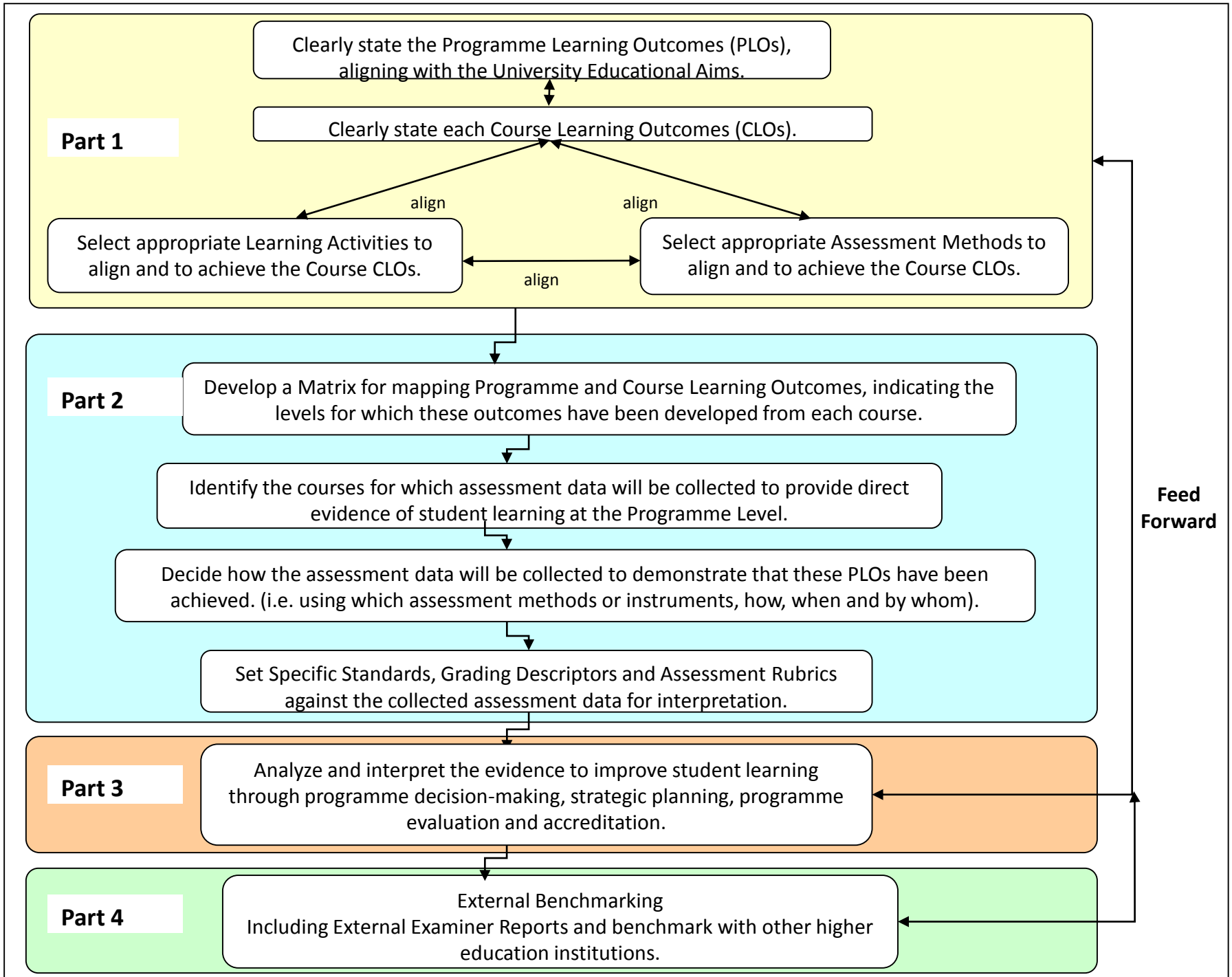
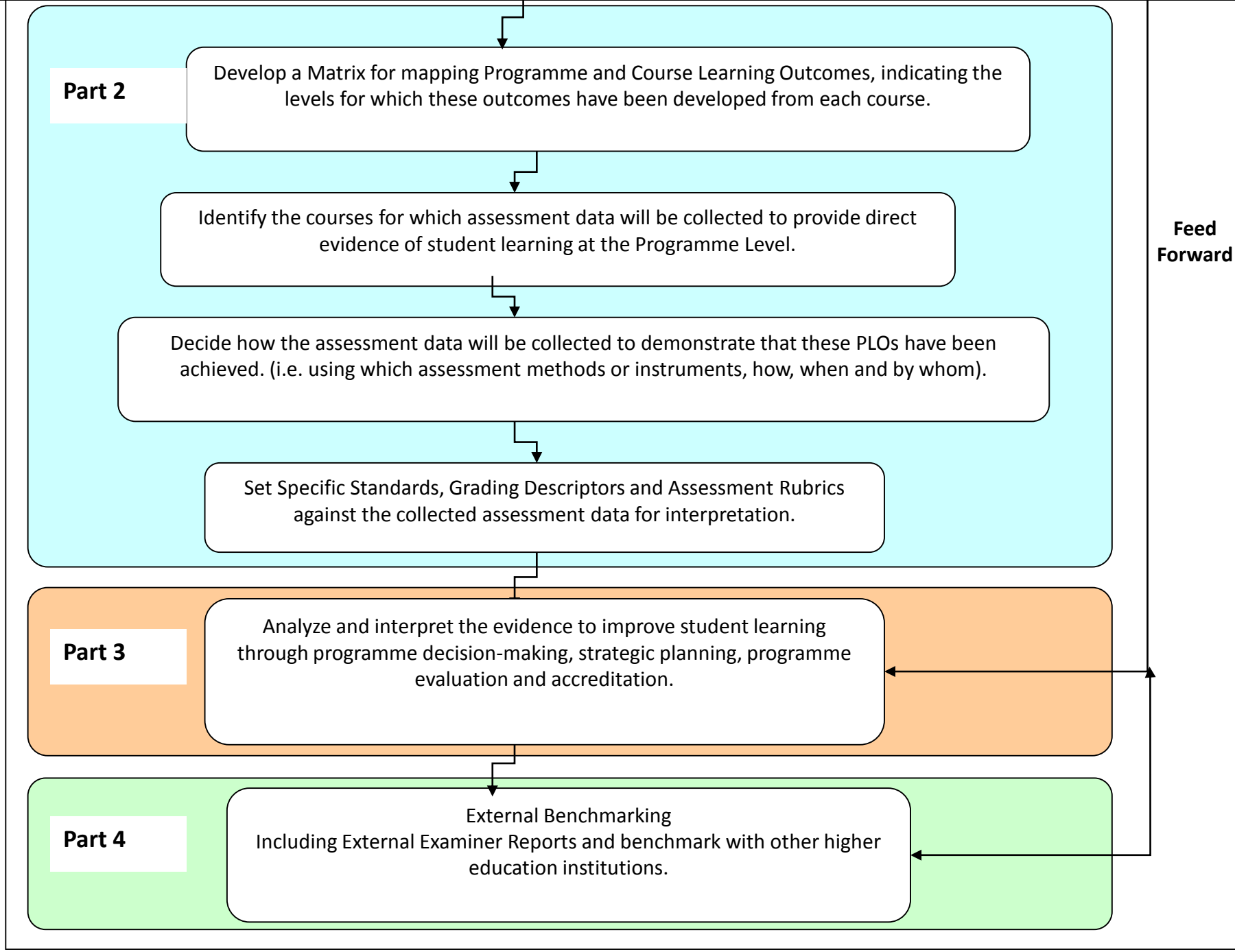
HKU Evidence Base

Evidence base	
Direct	PLO Achievement Portfolio (PLO) – using embedded assessment in final year courses to “measure” achievement of EAs and PLOs, using marking rubrics aligned with EAs and PLOs
	External Examiners’ Reports (EE Reports) Accreditation bodies
Indirect	SETL – course level student evaluation
	SLEQ – institutional and programme level student survey for UG programmes About half survey on student perceptions of achieving Eas
	TPgLEQ – institutional and programme level student survey for TPg programmes About half survey on student perceptions of achieving EAs
	Graduate Survey – survey of gradates – student perceptions of achievement of Eas
	Employer Survey – survey of employers – employer perceptions of students achievement of the EAs


Part 1
Clearly state the Programme Learning Outcomes (PLOs), aligning with the University Educational Aims.
Clearly state each Course Learning Outcomes (CLOs).
align
align
Select appropriate Learning Activities to align and to achieve the Course CLOs.
align
Select appropriate Assessment Methods to align and to achieve the Course CLOs.
Part 2
Develop a Matrix for mapping Programme and Course Learning Outcomes, indicating the levels for which these outcomes have been developed from each course.
Identify the courses for which assessment data will be collected to provide direct evidence of student learning at the Programme Level.
Decide how the assessment data will be collected to demonstrate that these PLOs have been achieved. (i.e. using which assessment methods or instruments, how, when and by whom).
Set Specific Standards, Grading Descriptors and Assessment Rubrics against the collected assessment data for interpretation.
Part 3
Analyze and interpret the evidence to improve student learning through programme decision-making, strategic planning, programme evaluation and accreditation.
Part 4
External Benchmarking
Including External Examiner Reports and benchmark with other higher education institutions.
Feed Forward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External Benchmarking
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Feed Forward

Discussion #2

How are we going to show the achievement of these skills which form part of our educational aims?

Or do we have to?

Discussion #3

Often a piece of assignment in a course is chosen to provide direct evidence of student learning which aligns with the programme learning outcome, is it sufficient to say students have achieved that? Or are we just ticking the box?

Discussion #4

Is collecting evidence of student learning just an exercise of paper collection?

Advantages Vs Disadvantages

Discussion #5

For those programmes which have professional accreditation criteria, they may have mandatory PLOs, do they need to go through the same quality assurance process?

HKU University Aims

To enable our students to develop the capabilities in

1. Pursuit of academic/professional excellence, critical intellectual inquiry and life-long learning
2. Tackling novel situations and ill-defined problems
3. Critical self-reflection and greater understanding of others, upholding personal and professional ethics
4. Intercultural understanding and global citizenship
5. Communication and collaboration
6. Leadership and advocacy for the improvement of the human condition

Definition of Generic Skills

Skills, knowledge and attributes, beyond disciplinary knowledge, which are applicable in a range of contexts

(Barrie, 2006; Chan, 2012)

Generic Skills

- Problem solving
- Creativity
- Leadership
- Project management
- Communication
- Writing
- Brainstorming
- Team working
- Computer Literacy
- Ethical
- Language
- Professional
- Positive Attitude
- Common Sense
- Adaptability
- Lifelong Learning

etc…

Generic Skills Are Vital Today

Generic employability skills are important because jobs today require flexibility, initiative and the ability to undertake many different tasks.

Evidenced in

- The Dearing Report in the UK (1997), the Council of the European Union (2001),
- The Australian Council for Educational Research (2001)
- Hong Kong University Grants Committee (2005)

Emotional Quotient (E.Q.)

Peter Salovey the psychologist who invented the term E.Q. explained

"I.Q. gets you hired, but it is E.Q. that gets you promoted."

Generic Skills and Engineers

Employers have often been surveyed and their concluded remarks were:

"Engineering Graduates
Lack
Employable Skills"*

* Indo-Asian news service – 2009
The Institution of Engineering and Technology, UK – 2011

Challenges of Developing Generic Skills

- Students' perception
- Teachers' perception
- Unknown and unaware of the learning outcomes related to generic skills
- Mismatch of learning activities, assessments and learning outcomes
- Not discipline specific
- Unaware of the rationale and students' prior experiences
- Teachers often do not have the skills to teach them

Challenges of Developing Generic Skills

Lack of coherence curriculum design framework particularly regards to student engagement and transferability

"the product of accident rather than design"

- Drummond et al, 1998

Research Question

To investigate students' perceptions of generic skills in the engineering discipline. This includes their rationale, awareness, prior experiences, expectations from the university and their experiences in relation to learning outcomes, learning and teaching activities, assessment and engagement on the acquisition of generic skills acquired during their undergraduate programme.

GRF: Research Context & Methodology

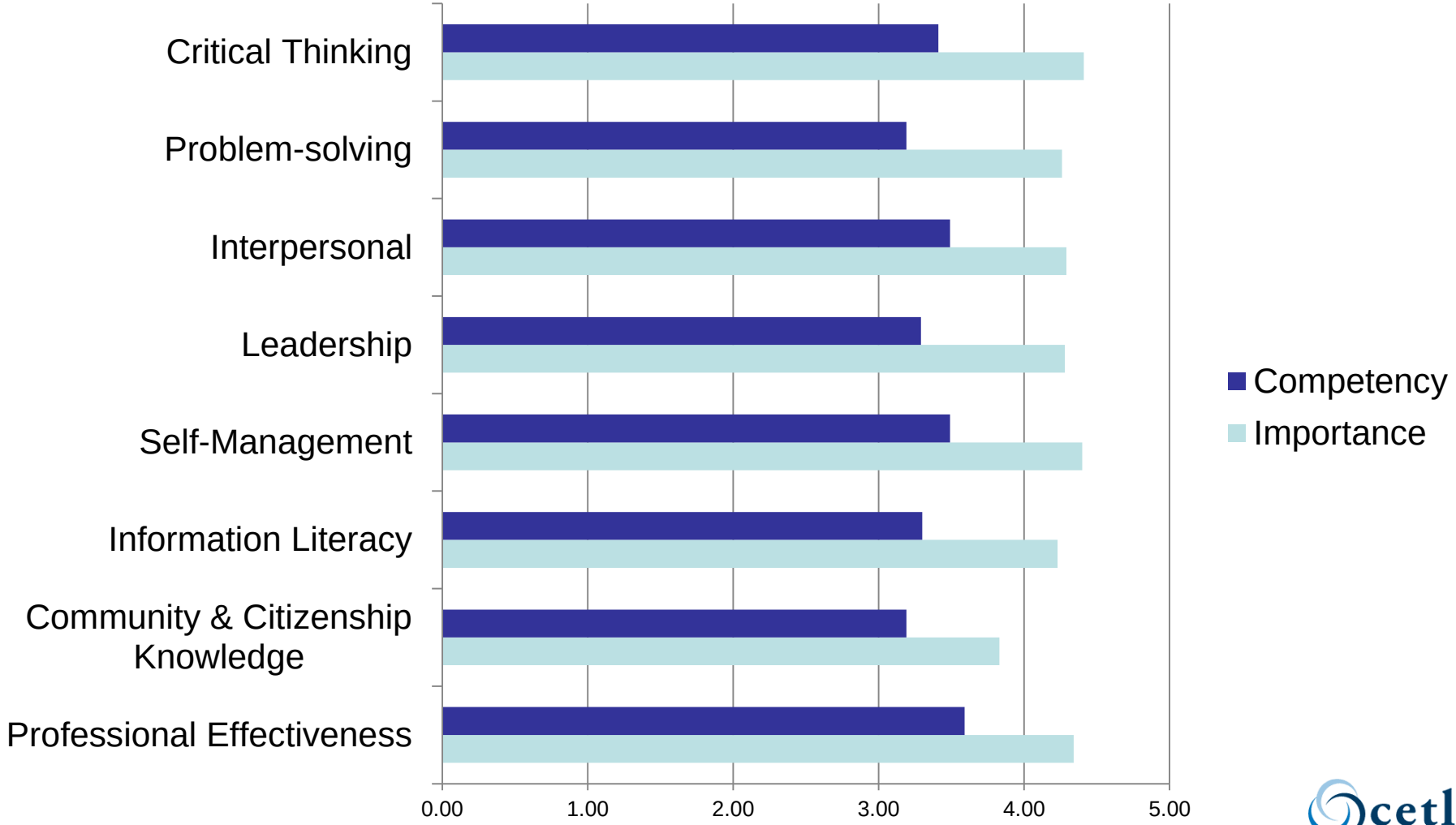
Research Context	3 higher education institutions in Hong Kong
Nature of study	Quantitative study, Student-centered Focus group interviews
Timeline	August to October 2013
Sample	1232 Engineering students (928 Male, 279 Female) 1st Year 506 Engineering students Final Year
Instrument	Transferable skills questionnaire for engineering students (Chan, Zhao, Luk, in review)
Procedure	The questionnaire was administered either outside classrooms or during lectures.

Transferable Skills Questionnaire for Engineering Students

- ***Section 1***: Background information (e.g. gender, year of study, origin)
- ***Section 2***: Importance measure (1=very unimportant, 5=very important), Competency measure (1=very poor, 5=very good)
- ***Section 3***: 5 statements assessing students' attitude toward transferable skills

Scale	No. of items
Critical Thinking	3
Academic & Problem-solving Skills	8
Interpersonal Skills	8
Leadership Skills	3
Self-management	4
Information & Communication Literacy	4
Community & Citizenship Knowledge	3
Professional Effectiveness	4

Main finding 1 Perceived Importance Vs Competence



Main finding 2 General Attitude towards Transferable Skills

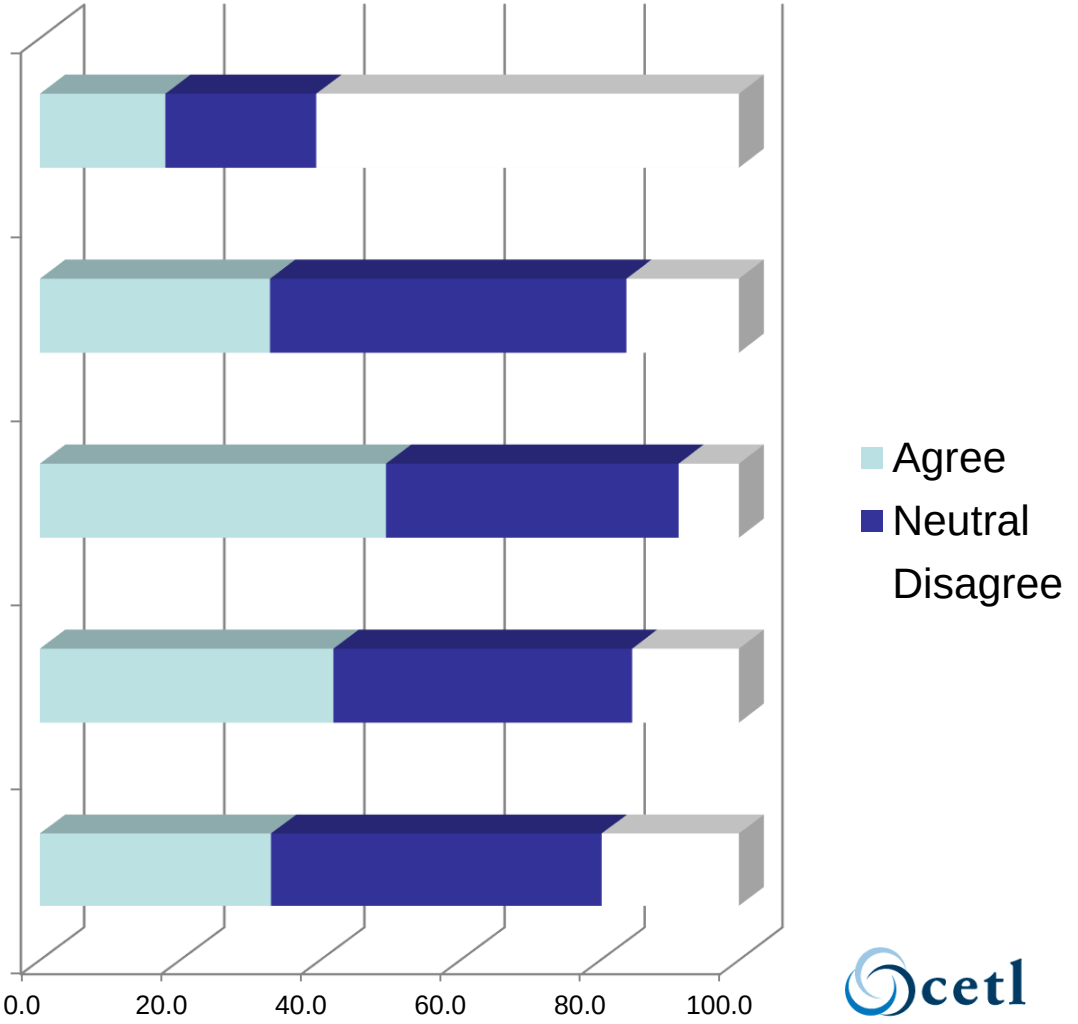
1. Learning transferable skills is irrelevant.

2. Transferable skills are more important than technical academic knowledge.

3. Transferable skills are better developed through extra-curricular activities than in the 4-year engineering curriculum.

4. We should be assessed and given credits for developing transferable skills.

5. We should receive certificate for developing transferable skills.



Discussion

- Students generally rated the importance of the transferable skills more highly than their ability in those skills.
  - Coincide with findings from previous studies (e.g. Direito, Pereira, & Duarte, 2012).
- Although majority of the students believe that transferable skills are relevant, most of them are neutral towards whether these skills are more important than technical academic knowledge.
  - Students seems to be aware that both the development of academic knowledge and the development of transferable skills are important.

Discussion & Implications

- A significant proportion of students believe that they should be assessed and given credits for the development of transferable skills.
  - However, there is often a lack of academic staff with the expertise in the assessment of transferable skills as well as a lack of clear assessment guideline for transferable skills development at the university.

- Students see extra-curricular activities (and NOT the academic curriculum) as the main source or opportunity for transferable skills development.
  - Although students perceive that generic skills are better developed through extra-curricular activities, it seems that the perception of the term ‘extra-curricular’ includes a broad range of activities as evidenced by the open-ended responses received. To clearly present these preferred activities, a tag cloud was generated (see tag cloud figure).

Hands Up Exercise

How many of you think they provide an opportunity for students to develop generic skills in their courses?

A.I do

B.Sometimes – accidentally not by design

C.What is generic skills and what is that to do with me?

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A Tag Cloud Visualization on the preferred method of developing generic skills from Student's Perspectives

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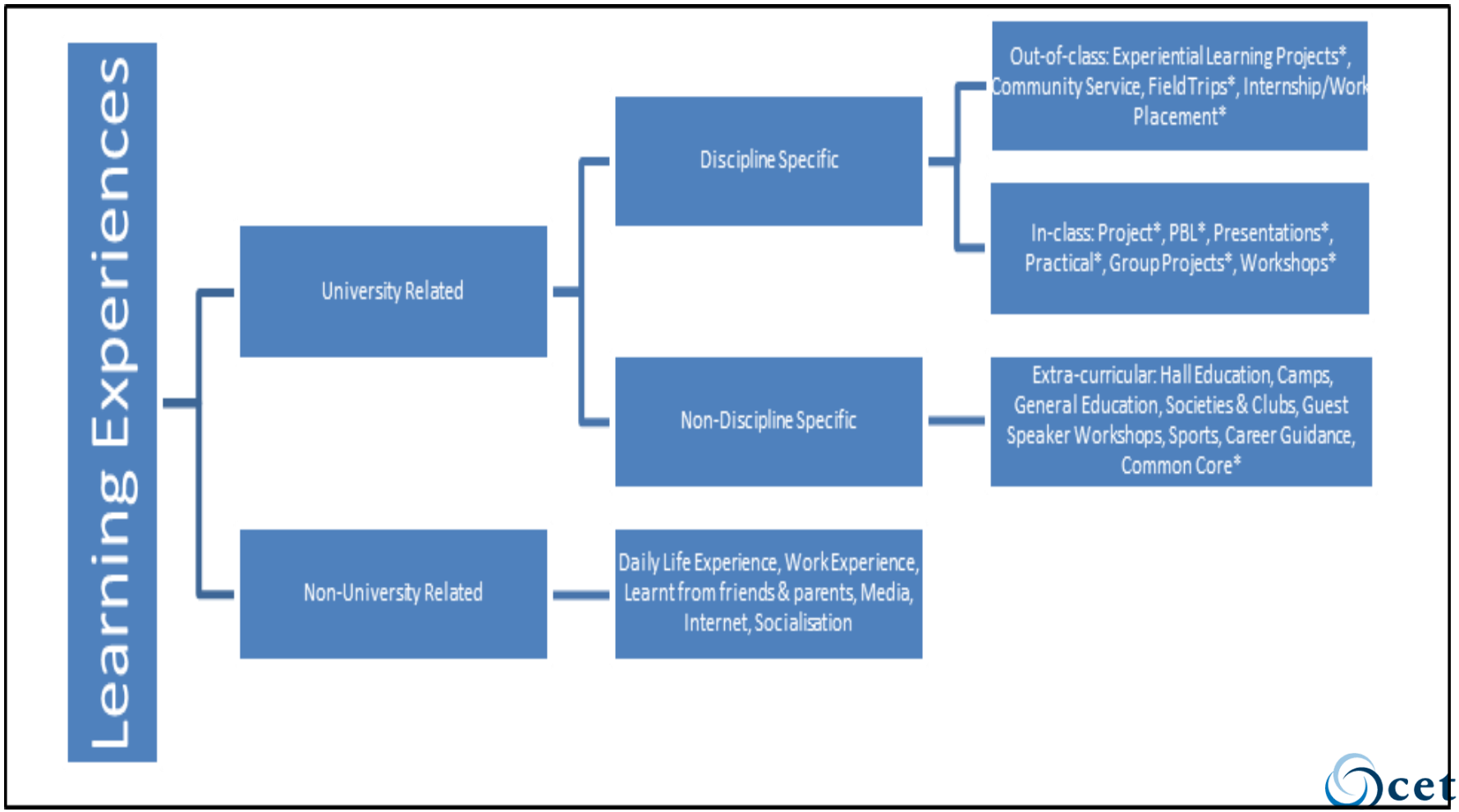
A Classification of the types of learning activities (in-class, out-of-class and extra-curricular) for the development of generic skills in engineering



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Hands Up Exercise

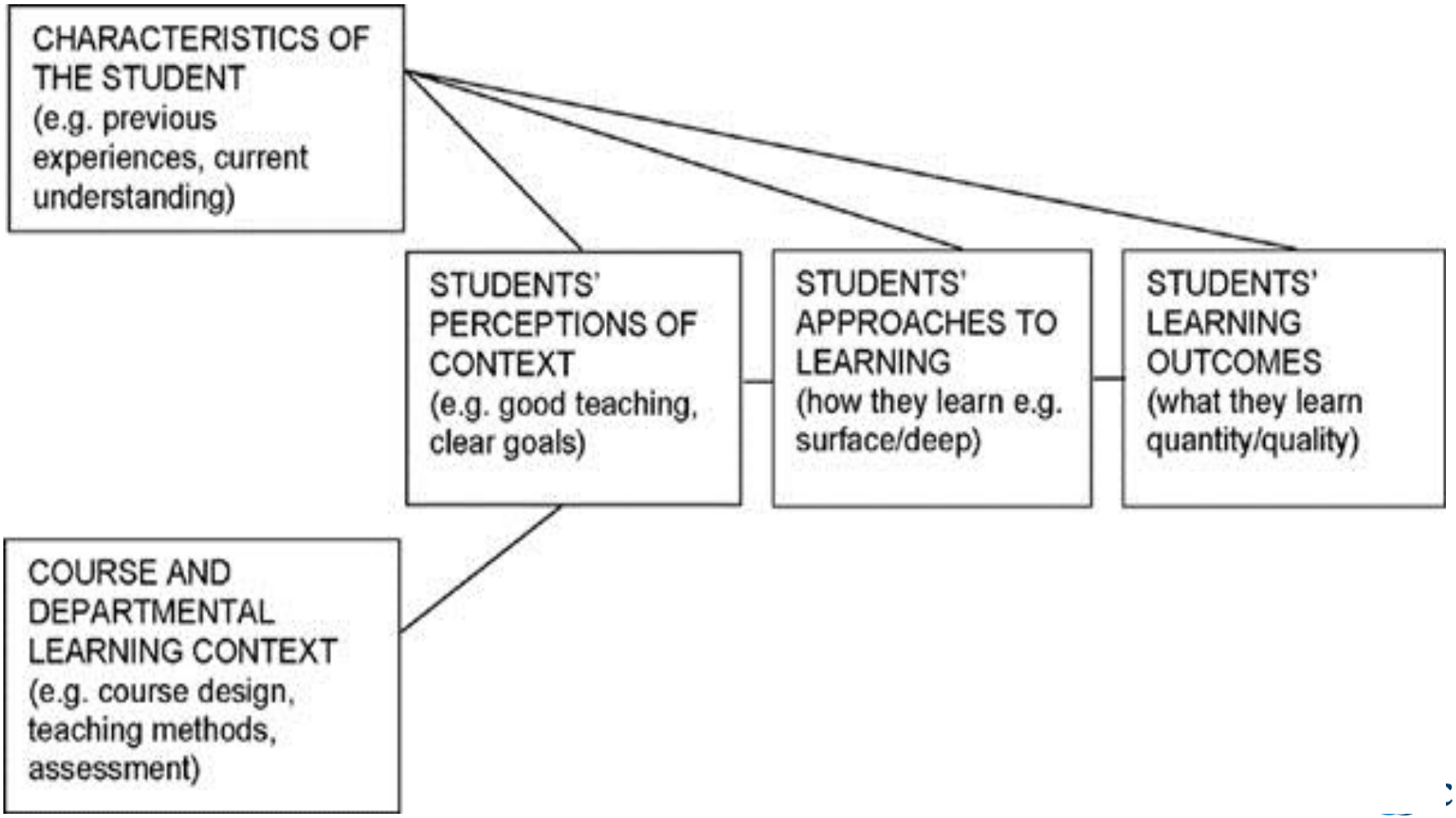
How many of you think they provide an opportunity for students to assess generic skills in their courses?

A.I do

B.Sometimes – accidentally

C.What is generic skills and what is that to do with me?

A model of student approaches to learning (Prosser & Trigwell, 1999)



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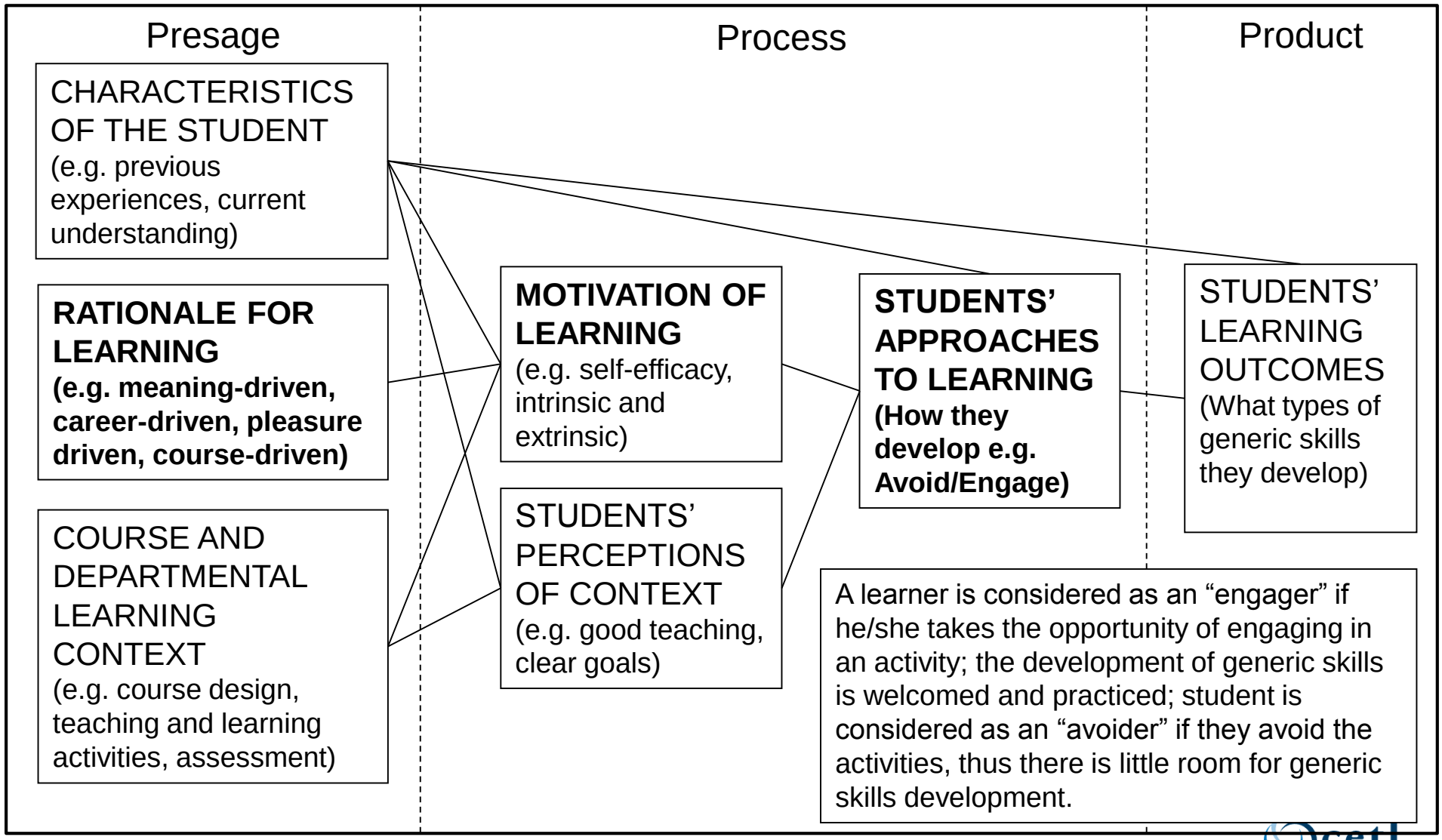
Student Approaches to Generic Skills Development (Chan & Luk's model, 2014)

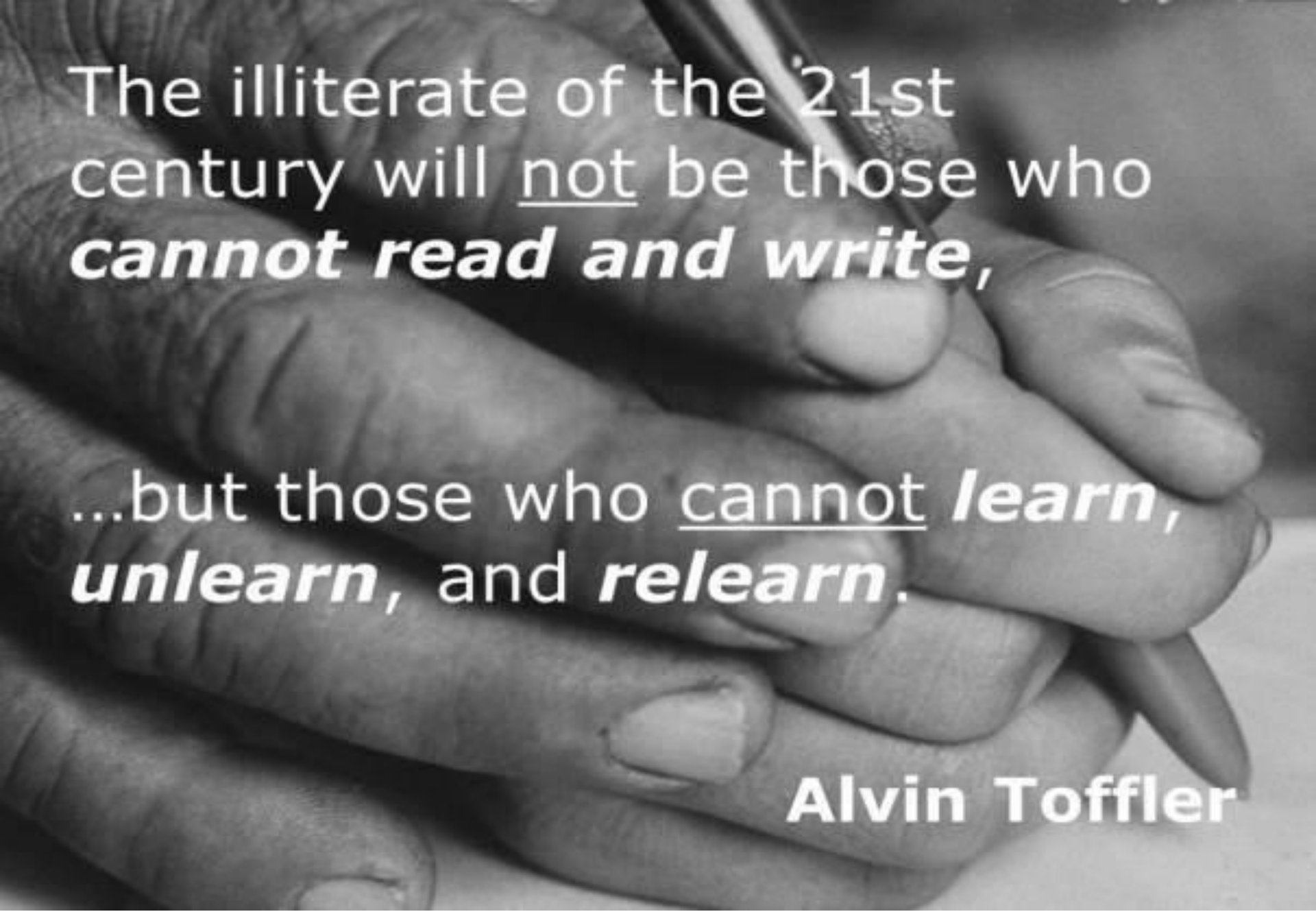


Future & Upcoming research

- Preferences and the effectiveness of **pedagogies and assessment** used for developing generic skills
- Investigation of **teachers'** perception of generic skills
- **Disciplinary difference** in the perception of transferable skills

- Comparison between business & engineering students

- **Direct Evidence** of generic skills
- **Certification** of generic skills
- Investigating the **learning ingredients** of in-class, out-of-class and extra-curricular activities for generic skills


The illiterate of the 21st century will not be those who cannot read and write,
...but those who cannot learn, unlearn, and relearn.
Alvin Toffler

Discussion

Developing and Assessing generic skills

Discuss with your group, initiatives that your university or your faculty have used to develop and assess generic skills?

Back to Quality

Is this what we called Quality Assurance?

Video

If you believe the idea of

Quality Assurance for Student Learning,

Is mainly about how to collect and pass the procedures, you will miss the bigger picture, the focus should really be on the

Quality Enhancement of Student Learning

Thank You

Thank you for your participation!!!

If you wish to contact me for further information

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