The Hong Kong Polytechnic University

Guide to OBE

1. What is OBE?

Adopting outcome-based approaches to student learning involves four important areas of work for the purpose of enhancing quality of student learning in our programmes:

- as the starting point define clearly what students should be able to do on completing their course of study (**intended learning outcomes**)
- design the curriculum, teaching, learning and assessment to enable students to achieve the intended learning outcomes (**alignment**)
- collect data on students' achievement of learning outcomes (**outcomes assessment**)
- use outcome assessment data to inform further development and enhancement of the programme/subject (**continuous improvement**)

2. Defining Intended Learning Outcomes [ILOs]

An outcome-based curriculum design begins with defining the student learning outcomes for the programme and the component subjects. This section attempts to guide you to do that.

This section is organised as follows:

- What are Intended Learning Outcomes?
- Our Ultimate Outcome: All-Round Development of Students with Professional Competence
- Action Verbs and Levels of Performance for Outcome Statements
- Programme Outcomes and Subject Outcomes
- Examples of Learning Outcomes (for Your Discipline)
- Principles for Effective Outcome Statements
- Checklist

2.1 What are Intended Learning Outcomes?

Let us imagine this situation now: we sit down and start writing the outcome statements. What are we supposed to write? At the beginning of every semester teachers write up objectives and syllabus topics for their programmes and lessons. What have they written? Do they differ from intended learning outcomes?

To clear some confusion and answer these questions, let us distinguish some important differences between the outcome-based approach and some common 'traditional' approaches to curriculum planning.

The Distinction between Learning Outcomes and Syllabus/Content

In brief, intended learning outcomes represent achievement attained by students instead of topics to be covered, the latter being typically the purpose of a syllabus.

It is common that when teachers plan their curricula, they start by thinking about the relevant topics to teach - a task that we can call defining the syllabus, which is certainly one important curriculum planning task. Defining the syllabus is related to but NOT, by itself, specifying learning outcomes. Take a hypothetical swimming course as example: the syllabus of the course could be incorporated with contents such as 'safety guidelines', 'breathing techniques', 'body motions', and 'swimming styles', whilst the outcome of the course would be 'to swim in water effectively and safely'.

The distinction between outcomes and contents is important. The adoption of the outcome-based approach implies a change in perspective from '**content**' to '**knowledge, abilities and attitudes achieved by students**'.

In the outcome-based approach, the main concern is, of course, the outcomes. To elaborate, what are the desirable qualities of the graduates from your programme(s) and subject(s)? What knowledge and skills you want and expect your students to demonstrate? What level of performance should they demonstrate to be able to excel in their prospective role of entry-level professionals? For instance, for the same topic about a particular chemical product, a programme aimed at producing chemical engineers who develop the product differs from another aimed at producing marketing executives for the product. Though students essentially need to learn the same topic, they will focus on different perspectives and will use the knowledge in different ways and different contexts. This is why the outcomes and desirable qualities are so important and therefore must be stated explicitly. For this purpose, let us look at the following two lists taken from the subject benchmark statements of Health Studies, according to the Quality Assurance Agency for Higher Education.

Note:
List A

1. the ability to make comparisons between a range of health contexts, such as individual and institutional and national and international contexts;
2. the ability to analyse health and health issues, and health information and data that may be drawn from a wide range of disciplines;
3. the ability to synthesise coherent arguments from a range of contesting theories relating to health and health issues;

4. the ability to draw upon the personal and lived experience of health and illness through the skill of reflection and to make links between individual experience of health and health issues and the wider structural elements relevant to health;
5. the ability to articulate central theoretical arguments within a variety of health studies contexts;
6. the ability to draw on research and research methodologies to locate, review and evaluate

(Source: Health Studies, QAA, 2004)

List B

The Health Studies graduates will demonstrate knowledge and understanding of:

1. health as a contested concept;
2. the multidisciplinary nature of health studies;
3. the central place of research activity in the development of the subject;
4. the diverse determinants of health;
5. the contemporary issues at the forefront of the subject;
6. the range of realist and constructionist theories of causality relating to health;
7. ...

(Source: Health Studies, QAA, 2004)

List B is basically a content list. Please note that even with phases such as 'acquire knowledge and understanding' added to the statements, they are still not effective outcome statements. Verbs such as 'know' and 'understand' are too vague to be good verbs for outcome statements as they fail to indicate what the students are able to perform, academically or professionally, with that knowledge. This becomes very clear when these statements are compared with those in List A.

List A contains good examples of outcome statements at the programme level. These outcome statements clearly delineate the academic abilities and performance of the students as a result of academic learning. Please note that ‘action verbs’ in the outcome statements are highlighted. As illustrated, using action verbs gives outcome statements a much clearer articulation of academic performance than the words 'understanding' and 'knowledge'. To elaborate, these action verbs provide indications of the appropriate level of performance, beyond simply 'knowing'.

Using Broad Outcome Statements to Capture the Desirable Qualities

Outcomes refer to the desirable qualities of our graduates. They are not, however, a long and detailed list of topics that they know. Students do learn a lot of subjects and topics. In the meantime, the learning contributes to the development of some essential qualities, such as problem solving. Starting from individual contents and particular specifications, however, will easily lead students to not seeing the wood for the trees. Outcome-based approach requires

the programme leader NOT to jump into the details immediately before forming a big picture of the education provided to students. While learning a particular topic, one cannot lose sight of developing the major abilities, using the specific learning as a vehicle.

Hence for an outcome-based approach it is important to get the key areas of learning and developmental outcomes right. And usually these outcomes are broad statements describing the final quality, like problem solving, effective communication, etc. For example, the learning about the various domains in an MBA programme is expected to lead to the development of the abilities to identify and diagnose problems:

"*(Identify/Diagnose problems) Ability to identify and diagnose business problems accurately and effectively across a wide range of business domains, including management practices, accounting and financial management, operations, marketing, and strategic management.*"

(Source: MBA Programme, St. Mary's College of California, 2004)

A teacher can usually identify such broad statements about what key intellectual abilities, knowledge, skills and attitudes are desirable in a discipline by referring to:

- overall mission of the institution
- expectations of the profession
- specific aims of your programme.

The overarching outcome for PolyU graduates is explicitly defined in our role statement as to produce "*all-round students with professional competence*". Therefore, a good set of programme outcomes should take into account both "*professional outcomes*" of the discipline and outcomes of "*all-round development*".

Using Appropriate 'Action Verbs' in Your Outcome Statements

Outcomes imply what the student should be able to know and do and therefore outcome statements should be about how such achievement can be demonstrated - by action verbs. As for important generic abilities, we can see easily that students need to solve problems, work in teams, communicate effectively, etc.

When we come to specifying the basic knowledge to be acquired, it is very common that teachers set objectives for their teaching by stating 'understand so-and-so topic'. While ‘understand’ seems to fall into the action verb category, curriculum developers have long been aware that the word ‘understand’ is a very fussy and unhelpful verb. It is fussy because there is no explicit indication of what has to be demonstrated by students if they have indeed understood. It is unhelpful because the verb 'understand' does not articulate the level of attainment - is it being able to recap the key points or being able to apply the knowledge? Therefore, it is also important that the action verbs are at suitable levels. Here we shall explore the appropriate action verbs to indicate different levels of understanding.

2.2 Our Ultimate Outcome: All-round Development of Students with Professional Competence

It is the designated role of PolyU to develop all-round students with professional competence. Both all-roundedness and professional competence are important outcomes, and essentially both outcomes should be achieved upon our students' graduation.

We believe that attributes for all-roundedness (i.e., generic skills) and professional competencies outcomes are complementary. Both must be addressed and are not in conflict with each other. Many generic skills are important for professional development, e.g., critical and creative thinking, lifelong learning abilities, etc. Furthermore, there are few, if any, professions nowadays that do not require at least some generic skills from their recruits that would allow them to work flexibly and learn new skills effectively.

In the curriculum revision submission document, you are required to organise your outcome statements into two categories:

1. The development of all-round students.
2. The achievement of professional competence.

The purpose for this categorisation is to demonstrate that both aspects of our mission are being addressed adequately in your programme. You may find that some of your outcome statements actually integrate the all-round development aspect and the professional competence aspect, so you can choose to put them together with a note. Categorisation is not the main concern here; it is the inclusion of both aspects of development in the outcome statements that counts.

Attributes for All-Roundedness as Learning Outcomes

Attributes for all-roundedness are the more generic and transferable aspects of learning. The list of attributes for all-roundedness varies from place to place. For PolyU, we look for the following attributes in our graduates: global outlook, interest in local and international affairs, problem solving, critical and creative thinking, communication and interpersonal skills, sense of social and national responsibility, cultural appreciation, lifelong learning, biliteracy and trilingualism, entrepreneurship, teamwork and leadership.
These attributes do not exhaust the scope of all-round development. Nevertheless, they are comparable to similar lists upheld by other universities around the world and are representative of the local expectations of the attributes that a university graduate should possess.

Professional Competences as Learning Outcomes

PolyU programmes historically carry a strong professional emphasis and we have accumulated a lot of experiences in developing students as professionals. Nevertheless, it will be interesting

and useful to explore in more depth what professional competence means and how it should be represented in outcome statements.

Take a minute to judge for yourself whether the following outcome statement is one for professional competence for practitioners in the field of environmental protection.

Learning Outcome: '*To know the laws relevant to environmental protection*'

This is definitely knowledge required for the profession in environmental protection, so the answer is a resounding YES!

BUT… before jumping to a happy conclusion, think about it more critically:

Does it say how the practitioner actually uses that knowledge?

Does simply knowing and recalling the laws already enable the environmental protection agent to solve some problem that he/she may face in his/her job?

NOW consider this alternative:

'*To critically evaluate the laws relevant to environmental protection and to apply them in urban planning policies*'

Obviously, this one has specified the desirable qualities and what the environmental protection agent is expected to perform. So stating 'knowing' or 'understanding' in the outcome statement does not necessarily guarantee a performance. Therefore, it is important to state the desirable qualities explicitly, like the second outcome statement.

University Knowledge vs Professional Knowledge

The knowledge emphasised in university programme is usually academic in nature. However sophisticated, it may differ from the professional knowledge required and expected in the graduates' chosen professions. To put this in perspective, would-be professionals might have learned how to label a certain process; however, they may not be able to execute that process while in the field. As such, according to Leinhardt et al. (1995), there is a mismatch between university knowledge and professional knowledge.

The distinction between these two kinds of knowledge is illustrated in Table A below:

University Knowledge Typical things that students are required to do at university		**Professional Knowledge** Typical things that professionals are required to do at work	
Analyse	Identify	Appraise	Liaise
Apply	Integrate	Assess	Negotiate
Articulate	Interpret	Assist	Organise
Compare	Justify	Collaborate	Plan
Contrast	Label	Communicate	Predict
Criticise	List	Compile	Prepare
Describe	Match	Create	Present
Differentiate	Name	Decide	Prioritise
Discuss	Outline	Design	Produce
Distinguish	Recognise	Develop	Recommend
Elaborate	Summarise	Diagnose	Review
Evaluate	Synthesise	Execute	Select
	Theorise	Extract	Solve
		Forecast	Supervise
		Formulate	Support
		Handle	Undertake
		Implement	Use
		Initiate	Write
		Investigate	Work

Table A: University Knowledge vs. Professional Knowledge

Typically such procedural knowledge is related to the professional context. However, it should be noted that although procedural knowledge and professional knowledge are sometimes synonymous, this does no, by itself, represent the 'professional competence' we have aimed for.

Functioning Knowledge as Professional Competence

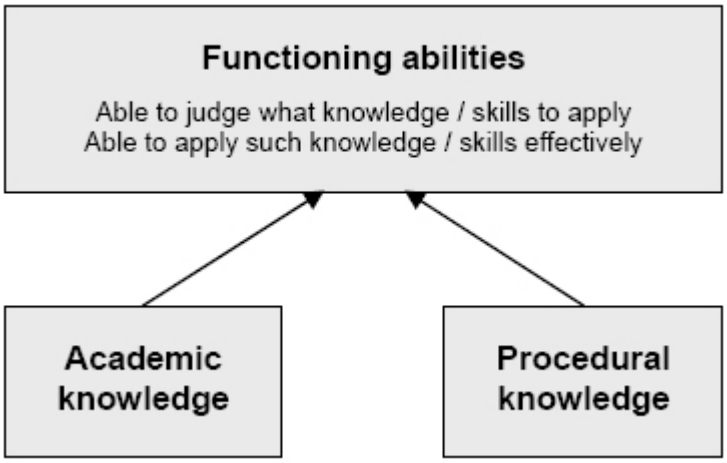
Biggs (2003) provided a framework of different kinds of knowledge which is also very useful in helping us understand what professional competence actually entails. Figure A is a simplified version adapted from Biggs' framework.

As illustrated in Figure A below, even the possession of both academic knowledge (theories, information, etc.) and procedural knowledge (procedures and skills) is still not adequate for our graduates to perform competently and effectively in their chosen professions. A professional, in order to perform effectively in real life situations, needs to know what knowledge to draw upon to make decision and to be able to apply the knowledge flexibly and appropriately in response to various tasks.

Put simply, academic knowledge and procedural knowledge are both necessary knowledge; yet neither is sufficient to ensure professional competence. As per the illustration, academic knowledge and procedural knowledge are the foundations. On top of this foundation, students

need another kind of knowledge of when and how to use knowledge in real-life problems in their professions, which Biggs labelled functioning knowledge to highlight its importance in allowing the professionals to perform effectively.

Figure A: Different Kinds of Knowledge and their Relationship (adapted from Biggs, 2003)



2.3 Action Verbs and Levels of Performance for Outcome Statements

Good outcome statements focus on abilities and attributes that are valued by the discipline concerned and are written to reflect an appropriate level of sophistication. Generally speaking, university graduates are expected to be more sophisticated in their thinking abilities. And in this information explosion age, abilities to critically select and manage information and generate new ideas have become more important. Such qualities should be reflected in your outcome statements through the appropriate use of action verbs.

Verbs and Abilities

Since outcome statements usually depict what students can do after completing a programme, they almost invariably consist of one or more action verbs. These action verbs represent important learning goals for students as well as criteria for assessment.
Different action verbs tell you different things about a student's abilities. Some reflect the depth of understanding the student has attained through the learning process. For example, if a student can successfully design a product, he or she must have grasped the concepts and skills related to designing that product, thus he or she must be able to use the knowledge and skills appropriately in the creative process of design. The level of understanding of a student who can design is therefore qualitatively different from someone who has merely acquired the same concepts and skills.

In Table B below, you will find examples of demonstrable action verbs organised by the connotations commonly associated with them. The columns represent different levels of

understanding and thinking involved in carrying out such actions. It should be noted that these categorisations are not absolute. It all depends on how you use the verb.

Factual Memory of facts	**Relational** Seeing relationships among ideas	**Extended Understanding** Creating and extending beyond what is taught
Deeper understanding →		
describe, match, outline, recall, enumerate, label, name	analyse, apply, compare, contrast, discuss, explain, interpret, relate	create, criticise, decide, design, formulate, generalise, generate, hypothesise, integrate, justify, reflect, synthesise, theorise

Table B: Different Verbs and their Corresponding Abilities

Let's take a closer look at the levels of understanding. They are derived from Biggs' SOLO taxonomy (1999).

Understanding at a factual level gives one the abilities to reproduce facts from memory. Students operating at this level see understanding as gaining knowledge. The focus of learning is therefore on getting more. The knowledge gained however is disconnected and disorganised. Now, what kind of outcome statements would lead to this kind of understanding? Consider the following example:

> "*Be able to identify the parts of a machine.*"

What does one need to do in order to achieve this goal? One just needs to memorise the features and perhaps names of the parts. The level of thinking and understanding involved is low.

The next level is called relational because at this level pieces of information are put together in such a way that the student sees the relationships among different information and ideas. This enables one to analyse and explain the operation of something and it is at this level that knowledge becomes functioning. Students operating at this level see the parts as relating to each other. Their focus of learning therefore does not stop at knowing about the parts but also goes on to find out the relationships between them. To engage students in such learning, you need outcome statements that require such processing of information. For example:

> "*Be able to analyse the structure of a machine and fix any faults as appropriate.*"

To achieve this outcome, students would need to put their knowledge of the parts of the machine together to form a coherent picture about the operation of the machine. They would also need to apply this understanding and relevant skills to repair the machine. Comparing this with the previous example, the quantity of factual knowledge about the machine is probably similar, but the level of understanding and coherent thinking required is somewhat higher. In other words, the two levels of understanding are qualitatively different.

Then we come to the final level, extended understanding. Understanding at this level is so thorough that there is no limit to the things one can potentially do with such understanding. Knowledge of the topic merges with the learner's personal web of knowledge and experience. The topical boundaries melt and the learner can generalise principles learnt in one situation to another appropriately to construct new knowledge and solve unforeseen problems. Students operating at this level view understanding as a generative and interpretive process. Their focus of learning is therefore to equip themselves with this capability. Outcome statements for this level of understanding and performance must offer the scope for demonstrating such potential.

"*Be able to generate innovative designs for machines to fulfil new needs.*"

To achieve this outcome, students would need to integrate their knowledge in machinery structure and functioning, production skills and design principles and apply such understanding and relevant skills in the creative process of designing new machines with new needs in mind. Performance of this level requires deep understanding and mature intellectual and practical abilities.

More about Level of Performance/Understanding

It is quite obvious that there cannot be a one-size-fits-all standard of performance for all discipline. For instance, both business students and mathematics students need to learn statistics, but obviously not to the same depth. It is this variation that gives us the range of different disciplines. The level of performance for each skill is therefore discipline-specific and as such should be considered with the nature of the discipline in mind.

Having said that, general expectations of what a university graduate is capable of doing do exist. For example, university graduates are expected to be very knowledgeable in their specialised fields of study (often with the assumption that they can use such knowledge to do something), to possess relevant skills and reasonably sophisticated thinking abilities, and to be independent and self-motivated learners etc. So, in writing outcome statements, we must be careful not to mislead students by giving them 'below average' targets.

It is argued that university education should at least aim at a relational level of understanding. This does not mean that learning facts are not important. It just means we probably should not stop at giving facts, but go beyond. After all, it is our mission to develop all-round students with professional competence, not bookworms.

Other Attributes

It must be acknowledged that there are attributes that cannot easily be classified into the levels mentioned earlier. They are often related to attitudes, professional ethics and other personal qualities. These attributes are important outcomes too, so some outcome statements must be written about them. In such cases, what verbs should be used?

Some of the verbs often used in such statements, displayed in Table C below, are arranged into two groups: knowledge and behaviour.

Results of attributes → ↓ Attributes	**Knowledge / Awareness** *Being aware of certain rules, codes of conduct, perspectives, diversity etc.*	**Behaviour / Action** *Act differently as a result of knowledge or awareness of certain rules, codes of conduct, perspectives, diversity etc.*
Attitudes, Qualities, Ethics	articulate, aware, have, recognise	act, behave, demonstrate, show, respect, adhere, comply, observe, react, reflect

Table C: Verbs and Other Attributes

This distinction is made because knowledge of something does not necessarily lead to its associated behaviour - knowing that one should not cross a road when the traffic light is red does not mean you would stick to that rule, for example. If your programme includes such elements, you might want to include outcome statements such as:

"*Graduates from this programme will be aware of the code of conduct of the profession and have demonstrated that they are able to adhere to the aforementioned code in their practical work.*"

The lack of directly associated action verbs is also frequently encountered in writing outcome statements of a generic nature. In such cases, appropriate adverbs and adjectives may be employed.

For example:
"is sensitive to and can react appropriately to contextual and interpersonal factors in groups and teams."
(Example from Psychology, QAA, 2002)

Verbs that Are Important but Do Not Tell You Much about Levels

Generic verbs: communicate, work, undertake, make, solve, and learn

Some verbs are relatively less informative about the depth of understanding. For example, the level of understanding required in solving a problem can vary greatly as the nature of the problem changes (e.g., routine vs. ill-defined problems). Such verbs are often valuable from a professional perspective and are generic and transferable in nature. Statements using such verbs will be more helpful if further information is given.

Consider the following example:
(Adapted from Engineering benchmark, QAA, 2000)

Outcome 1: "can solve routine problems as taught".

Outcome 2: "can integrate knowledge of mathematics, science, information technology, design, business context and engineering practice, to solve problems, some of which are unfamiliar and require good understanding."

How do they differ in the level of understanding or performance required?

Ambiguous Verbs

Ambiguous verbs: understand, know, appreciate, and grasp

Some verbs are so general in their meanings that they can hardly serve the functions of a learning goal or as criteria for assessment. Understand is a typical example of this kind. We recommend against using such verbs and when they are used, elaborations should be given to the extent that the statement will retain its functions as a learning goal for students and as criteria for assessment.

Reminder:
The verbs mentioned in this section are not exhaustive and the division of levels and categories is not meant to be absolute and dictative. They are here to give you some basis for considering the issue of level of performance when you write your outcome statements. It is, however, always useful to consider what is involved to achieve your stated outcome from the students' point of view, and compare that with what you think is the appropriate level of performance.

2.4 Programme Outcomes and Subject Outcomes

Outcomes are the starting point for the programme as a whole and also for individual subjects. It is strongly advised that the programme teams work collaboratively, instead of the programme leader coming up with the set of programme outcomes and subject coordinators individually writing their own sets. A collaborative effort will ensure that the program outcomes and subject outcomes will be aligned.

Distinguishing between Programme Outcomes and Subject Outcomes

Programme outcomes express the major performances in broad terms while the subject outcomes transform the broad goals to specific objectives. They should be aligned and when they are aligned, all outcomes are targeting the same goal.

Therefore, outcomes statements can be written at different levels. As has been mentioned previously, outcome statements should be broad statements, though it can be even broader at the discipline level. For instance, with some of the most general and broadest outcome statements prescribed for the discipline level, we can transform them to specific programme levels thereafter, and subsequently transform them to subject levels.

A quick glance at some general outcome statements at the discipline level, for the ABET Engineering Outcomes, are illustrated in List C that follows:

List C - Outcome Statements List: Discipline Level (Engineering)

1. to apply knowledge of mathematics, science, and engineering
2. to design & conduct experiments as well as analyze & interpret data
3. to design a system, component, or process to meet desired needs
4. to function in multi-disciplinary teams
5. to identify, and solve applied science problems
6. to have an understanding of professional and ethical responsibility
7. to communicate effectively
8. to have the broad education to understand the impact of scientific solutions in a global and societal context
9. to possess the ability to engage in life-long learning
10. to possess a knowledge of contemporary issues
11. to use the techniques, skills, and modern scientific and technical tools necessary for professional practice

(Source: Applied Science Accreditation Commission, ABET, Inc.)

As illustrated, at the programme level (in this case Engineering), it is not necessary to mention specific matters, but mainly to focus on the major abilities for the profession. For outcomes at such general level, generic and professional competences are the prime concerns. In this regard, they usually do not go into the articulation of the knowledge part – note that these statements only mention knowledge domains in extremely board terms of mathematics, science, and engineering.

This list encompasses outcomes concerning both professional competence and all-roundedness. For instance, outcomes 1, 2, 3, 5 & 11 represent professional competence, whilst outcomes 4, 7, 9 & 10 represent all-roundedness. It probably requires both professional competence and all-roundedness in order to have outcomes 6 & 8 demonstrated. Therefore, sometimes they are not explicitly separated. To reiterate in other words, all-roundedness and professional competence are indeed complementing each other.

List D – Outcome Statements List: Programme Level (Master of Business Administration)

1. (*Identify/Diagnose Problems*) Ability to identify and diagnose business problems accurately and effectively across a wide range of business domains, including management practices, accounting and financial management, operations, marketing, and strategic management.
2. (*Assess Performance*) Ability to assess accurately the performance of an organization across a wide range of performance criteria, including but not limited to financial, operational, ethical, and marketing effectiveness criteria.
3. (*Forecast*) Ability to utilize both quantitative and qualitative techniques and evaluations to forecast changes that will affect a business in the future.

4. (*Strategize*) Ability to identify, select, and justify strategies and courses of action at the functional, business, and corporate levels of analysis.
5. (*Plan*) Ability to develop effective plans for the implementation of selected strategies across a wide range of business domains and levels.
6. (*Communicate*) Ability to communicate effectively in a managerial role, including effective presentation of analysis, justification of recommended actions, and persuasive messages intended to affect the perceptions of others.
7. (*Negotiate/collaborate*) Ability to negotiate effectively, and to collaborate with others in situations characterized by differing interests and objectives.
8. (*Create Vision/Shared Values*) Ability to formulate strategies for creating workplace cultures characterized by a sense of mission, shared values, and high levels of commitment and motivation.
9. (*Evaluate Opportunities*) Ability to evaluate business opportunities.
10. (*Ethics*) Ability to assess and discuss the ethical and social implications of situations, actions, policies, and proposals.

(Source: MBA Programme. St Mary's College of California, 2004)

Does this list contain outcome statements at a programme level?

It is certainly. At first glance, when compared with outcome statements at a discipline level (e.g., ABET), they contain, to a greater extent, indications of the areas of study (in broad, general terms) to be included.

This is an exemplary and well-articulated list of outcome statements at a programme level. Why? We have discussed different outcome statements previously, at different levels and concerning different abilities, such as academic ones and generic ones. What kind of outcome has been illustrated in this list?

The action verbs are again highlighted and put into parentheses. The list is exemplary, articulates and focuses on the functioning abilities for the following reasons:
It represents professional competences with clear operational action verbs at the appropriate level of performance. In other words, the focus is functioning abilities, as opposed to academic abilities (please recall Figure 2-1 for their relationship)

1. It captures the key professional competences of managers
2. While the prime focus of this list is professional competences to be expected of graduates, instead of academic content, it links professional competences with the 'content' to be learned

Developing Subject Outcomes from Programme Outcomes

Table D below displays an example of an intended learning outcome for a programme offered by the School of Hotel and Tourism Management and two of its related outcomes at a subject level.

Programme Level	Subject Level
BA(Hons) in Hotel, Catering and Tourism Management Define and apply the manager's role in effectively organising, planning and controlling physical and financial resources, motivating human resources, and rendering customer-driven service quality delivery. (School of Hotel and Tourism Management, PolyU)	Front office and housekeeping management Describe the ways to motivate different levels of staff in the Housekeeping Department. Beverage operations and management in catering Identify the necessary procedures for effective beverage stock control, marketing and sales in restaurant, catering, and wine shop operations.

Table D: Exemplary Outcomes at Different Levels

In the example above, the intended outcomes at subject level relate to the programme outcome in the knowledge and skills (e.g. motivating staff, stock control etc.) that they describe. The knowledge and skills described in the programme outcome are put in the context of respective subjects (housekeeping and catering).

You would notice that while the two subject outcomes above are related to the programme outcome on the left, they are hardly the entirety of it. That is because they are just examples, but not a complete list, of related subject outcomes. In reality, each programme outcome should find itself adequately represented at the subject level. When that happens, you can say (with a smile on your face) that there is an alignment between your programme and subject outcomes. Curriculum mapping is a useful tool to help you accomplish that.

2.5 Examples of Learning Outcomes (for Your Discipline)

Before engaging in writing outcome statements, it is advisable to get some ideas from here and there and think about what outcomes your programme is trying produce. The Quality Assurance Agency for Higher Education (QAA) in UK is particularly resourceful in this respect. Listed below are the web location of the QAA and relevant documents (from QAA unless otherwise stated) from which you can find examples of outcomes statements for your discipline:

QAA subject benchmarking index -
http://www.qaa.ac.uk/academicinfrastructure/benchmark/honours/default.asp

Accounting	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/accounting.pdf
Architectural Technology	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/ArchitecturalTechnology.pdf
Art & Design	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/ADHA08.pdf
Biomedical Sciences	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Biomedicalscience07.pdf

Building and Surveying	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/construction08.pdf
Computing	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/computing07.pdf
Economics	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Economics.pdf
Education Studies	http://www.qaa.ac.uk/academicinfrastructure/benchmark/honours/Education07.pdf
Engineering	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Engineering06.pdf
English	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/English07.pdf
General Business and Management	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/GeneralBusinessManagement.pdf
Health Studies	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Healthstudies08.pdf
Hospitality, Leisure, Sports and Tourism	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/HLST08.pdf
Law	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Law07.pdf
Language and Related Studies	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/languages07.pdf
Mathematics, Statistics and Operational Research	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Maths07.pdf
Psychology	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Psychology07.pdf
Optometry	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Optometry.pdf
Physics, Astronomy and Astrophysics	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Physics08.pdf
Social Policy and Administration and Social Work	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/SocialPolicy07.pdf
Social Work	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/socialwork08.pdf
Town and Country Planning	http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/townAndCountryPlanning08.pdf

2.6 Principles for Effective Outcomes Statements

Now, let us look at some technicalities of writing statements for intended learning outcomes. It is really quite simple.

Outcomes are about performance, and this implies a few things:

1. There must be a performer - the student, not the teacher
2. There must be something performable (thus demonstrable or assessable) to perform
3. The focus is on the performance, not the activity or task to be performed
4. See the examples below:

Example 1
X To enhance students' teamwork skills (teacher-focused)

V To be able to work effectively in a team (student-focused)

Example 2
X Understand the a etiology of common diseases (not very clear what the student needs to perform)
V Students will be able to draw upon their medical knowledge and experience to diagnose the condition of their patients (clear in terms of what the student needs to perform)

Example 3
X Students will take part in the organisation of a fashion show (activity-focused)
V Students will be able to organise a fashion show (performance-focused)

Translating an Objective into an Outcome (Examples)

Most programmes have their set of objectives. If that is the case for you, you do not need to start from scratch (but it is a good chance to review and revise those objectives). Table E offers some examples of how an objective may be translated into an outcome.

	Objective	**Outcome**
Programme Level Example from ITC, PolyU	To stimulate the enquiring, analytical and creative ability of students, so that they can be sensitive to economic, technological, and political changes in the global environment, catch opportunities and develop the business.	Students will demonstrate sensitivity and an ability to analyse and enquire into the economic, technological, and political changes in the global environment to identify opportunities and creatively develop the business.
Subject Level Example from CSE, PolyU	To establish an understanding of the fundamental principles of fluid mechanics and to introduce their applications in situations that are of concern and relevance to a practising civil engineer.	Students will be able to apply the fundamental principles of fluid mechanics to situations that are of concern and relevance to a ractising civil engineer.

Table E: Objective vs. Outcome Translation

It may be useful to begin your outcome statement with this stem:
"*On successful completion of the programme, a student will have shown that he or she can…*"

Compiling your Set of Outcome Statements

In the previous sections, much has been said about how to write a good and effective outcome statement. This section looks at the complete set of outcomes as a whole.

- **Number of outcomes**: Keep your outcome set to a manageable size. For a programme, 10-20 outcomes are probably the acceptable range. Remember that these are the ultimate outcomes of the programme. Intermediate outcomes should be addressed at a subject level.
- **Check for overlapping**: Each outcome should be easily differentiable from each other. This is particularly important if you are going to map your curriculum.
- **Check for clarity**: A good set of programme outcomes should communicate clearly to students about what they need to achieve in the programme (i.e. it would give them a clear direction for their study) Check for representativeness It should tell those who read it what attributes they would find in a graduate from the programme.
- **The issue of alignment**: The rule of alignment is effective to the outcome set as well as to each intended learning outcomes. As a set of programme outcomes, it should be addressing the institution outcome adequate – in other words, will your programme (as depicted by your set of programme outcomes) produce all-round students with professional competence?

Final Words

Compiling the outcome set should be a collaborative effort of the programme team. A common understanding of what the programme is trying to achieve is important for the development of appropriate teaching and assessment strategies.

2.7 Checklist

Is your outcome statement a good one?

- Does it relate / contribute to (i.e. align with) your programme outcomes? ❑
- Is your outcome statement student-focused rather than teacher-focused? ❑
- Is your outcome statement focusing on the learning rather than the learning activity? ❑
- Is your outcome statement using verbs that are performable? ❑
- Does your statement give sufficient details for subject teachers to work on their teaching and assessment design? ❑

Is your set of programme outcomes a good one?

- Is it representative of a programme that develops all-round students with professional competence (i.e. is it in alignment with the University's objectives)? ❑

- Does it meet the requirements of relevant professional bodies as an accredited training programme to that profession? ❑
- Is it of a manageable size and there is no unnecessary overlapping among outcomes? ❑
- Can the list of outcomes be easily understood by those who may read it (teachers, students, employers, administrators etc)? ❑

3. Aligning Curriculum, Teaching and Assessment with ILOs

3.1 Aligning Teaching with Intended Learning Outcomes

Introduction

With your intended learning outcomes at hand, you have to plan your teaching and learning strategies to support the attainment of these outcomes. This section will guide you to devise your plan for teaching and learning using an outcome-oriented approach, or in other words, to select teaching and learning methods which align with your intended learning outcomes. It starts with discussing some important questions that you need to take into consideration when selecting your teaching methods. It then takes you through a range of teaching and learning methods, showing typical scenarios of the methods and diagnosing the intended outcomes with which the methods could possibly be aligned.

Designing a Plan for Teaching and Learning - Some Important Considerations

You are recommended to make a plan to illustrate the teaching and learning methods clearly with some indications of when and in what kinds of subjects such methods are going to be employed. Before we go into the specific teaching and learning methods, there are some important considerations when selecting teaching and learning methods. In light of this, three check questions are recommended for facilitating your plan.

Aligning Teaching and Learning Methods with Intended Learning Outcome

When selecting any teaching and learning method it is obviously important to ensure that the method will enable the students to achieve what are intended as learning outcomes. There are different kinds of methods available. Some of them are more effective in building up subject knowledge while some make more contribution to developing generic skills. For more details on learning outcomes, please see the section Defining Intended Learning Outcomes.

Recommended check question: What outcomes does it promote?

Developing All-Round Students with Professional Competence

The institutional outcome for PolyU is all-round students with professional competence. As explained in the section Defining Intended Learning Outcomes, professional competence

involves functioning abilities which are founded on a high level of understanding of academic knowledge and relevant procedural knowledge. Teaching and learning should be able to develop abilities to apply knowledge to solving real-life problems. It is crucial to encompass, in teaching and learning, elements of authenticity such as real-world examples, problems which resemble those in the professional world etc.

Recommended check question: How related is it to real life?

Key Features of the 'Active Classroom'

Additionally, the idea of the 'active classroom', which the PolyU advocates, entails educational concepts and strategies that are relevant to the development of a high level of understanding of academic knowledge and functioning abilities. The four key features of the 'active classroom' are (1) Thinking; (2) Task-Focused; (3) Teamwork; & (4) Transcendence (beyond the normal classroom).

Thinking

The methods are able to motivate students to think deeply with and about the important concepts and theories in their respective disciplines, and to apply the new understanding and skills in exploring and dealing with real-life problems in their future professions. We need to consider and whether they give students enough space to come up with their own 'burning questions' to which they want answers, and are interested and able to grapple with the questions put to them.

Task-Focused

The methods provide students with opportunities to engage themselves frequently in meaningful learning tasks where they are challenged to ask questions, think, discuss, apply and evaluate their new understanding and skills.

Teamwork

The methods require students to work with their peers in teams, both inside and outside the classroom. And the methods can encourage students to become active members of the wider learning community of the real world.

Transcendence (beyond the normal classroom)

The methods encourage students to learn not only through interacting with their teachers and peers in the scheduled face-to-face sessions, but also through interacting with other people in different kinds of out-of-class activities such as technology-enhanced discussions and forums, workplace and/or community-based experiences in workplace, partnership with professional, and international exchanges, etc. The teaching and learning methods should also encourage students to make connections with and appreciate a broader context of learning.

Recommended check question: How active is it?

Check Questions for Teaching and Learning Plan

- How active is it?
- How related is it to real life?
- What outcomes does it promote?

Teaching and Learning Methods

This section explores a total of 13 teaching and learning methods and uses the three check questions to discuss conditions justifying their use. Each method has three core elements: (1) A description of what this method looks like in practice; (2) Examples of how this method can be used; and (3) Review alignment using the 3 recommended check questions. The 13 methods will be presented in this sequence:

- Interactive Lecture
- Case-Based Learning
- Problem-Based Learning
- Simulation
- Role Play and Fish-Bowl Observation
- Tutorial
- Self-Directed Learning
- Experiential Learning
- Laboratory Work
- Fieldwork
- Peer Tutoring
- PISER
- e-Learning

3.2 Aligning Assessment with Intended Learning Outcomes

Introduction

Given that all-roundedness and professional competence are intended outcomes for all programmes:

- How do we assess professional competence?
- How do we assess the outcomes for all-roundedness set forth in the Strategic Objective 1?

This section attempts to guide you to:

- Appreciate how assessment design relates to curriculum design, as well as teaching and learning design in an outcome-oriented educational framework.
- Recognise a broad range of assessment options open to your selection.
- Make informed selection of assessment methods appropriate for your programme.

- Convincingly justify your assessment design to programme reviewers inside and outside PolyU.
- Formulate meaningful criteria to assess learning outcomes in various domains - professional knowledge, generic skills, and attitudes, etc.
- Design rubrics to provide feedback to students and to enhance the teaching and learning process.

Designing Your Assessment Plan

Effective assessment is inseparable from good teaching and learning. Just as a good teacher would use more than one method of teaching, a programme or a subject would normally employ more than one method of assessment. Furthermore, assessment activities, like teaching, are also carried out at different times throughout the semester so we can know how students are learning. An assessment plan lays out a well thought out selection of assessment methods that are aligned to the objectives and outcomes of the subject or programme. To help you evaluate your assessment plan, we suggest using the three check questions for exemplary assessment design.

Selecting Appropriate Assessment Methods for Intended Learning Outcomes

Not every assessment method is universally valid for every type of learning outcome. For example, if an intended outcome for a Computer Programming course is to 'be able to design and develop webenabled software components using Java,' you cannot measure this outcome by asking the student to write an essay. Similarly most generic outcomes, with the exception of language competencies, cannot be assessed by objective tests.

In order to align assessment with a particular type of learning outcome, you need to select an appropriate method of assessment. In the following we shall introduce a range of different assessment methods and discuss their appropriateness for different types of outcome.

A university education goes beyond mastering factual knowledge into higher order thinking skills and real world competencies. We want to develop a student's ability to think critically and creatively and to solve problems. Thus, assessment methods which focus on lower-cognitive skills like memory are far less justifiable here. Instead, we need to design tests, exams, or assignments that can engage our students in thinking and doing things that will be valuable beyond their academic lives.

Recommended check question: What outcomes (in terms of level of understanding) are assessed?

Using Assessment for Both Grading and Support Learning

Take a minute to consider: 'What is the function of assessment?' Many colleagues may immediately respond that it is for giving grades to students. Indeed, this is an important

function of assessment and educators call this 'summative' assessment. Summative assessment is usually carried out at the end of a subject or after the conclusion of a major topic. Therefore both the final examination and quizzes given during the term are summative assessments - as long as they are administered mainly for grading purposes.

Besides its grading function, assessment is a powerful instrument for learning. Recent research in education focuses a lot on using assessment creatively to enhance learning (Gibbs, 1995). The design of the questions asked in the assessment will send messages to the students about what kinds of learning are encouraged. For example, open-ended questions encourage students to move beyond book knowledge into the broader subject context. On the other hand, an over-dependence on objective tests promotes a culture of rote learning and memorisation.

Hence when designing your overall assessment plan, you should view it not only as building in check points to give grades to students, but to consider it integrally as part of the learning process for the students. It is important to see the assessment as an instrument for promoting desirable learning.

Recommended check question: What kind of learning is promoted?

Continuous Assessment or Terminal examination?

A common concern among colleagues when making decisions about the assessment plan is the percentage weightings to be assigned to continuous assessment (also called coursework) and to the final examination. The choice between continuous assessment or terminal examination should therefore be considered in the light of whether they are appropriate for the intended learning outcomes, whether they are appropriately scheduled for providing feedback etc.

Check Questions for Teaching and Learning Plan

In summary, keep asking the following questions about your assessment plan:

- What outcomes (level of understanding/ performance) are assessed?
- How authentic is the task?
- What kind of learning is promoted?

Assessment Methods

This section explores different methods of assessment and uses the check questions to discuss conditions justifying their use. Each assessment method has three elements: (1) A description of what this method looks like in practice and its major variations; (2) Examples of how this method can be used; and (3) Review alignment using the 3 check questions. The assessment methods will be presented in this sequence:

- Objective Tests

- Case Studies
- Essay Questions
- Projects
- End-of-Chapter Type Problems
- Reflective Journals and Critical Incidents
- Seminar Presentation
- Practicum and Clinical
- Portfolio
- Examinations
- Peer and Self-Assessment

3.3 Rubrics

Criterion-Referenced Assessment

The move from a **norm-referenced** to a **criterion-referenced** model of assessment is a significant change in the outcome-based approach. Norm-referenced assessment measures students against each other ('grading on a curve'). Criterion-referenced assessment measures student performance against an explicit set of standards. Norm-referenced assessment provides very little feedback for students to improve their performance. Consider this:

- Kin-Wah scored 70 out of 100 points for his Seminar Presentation assignment. What does the score tell him? Next to nothing, except where he stands in terms of the total number of points.
- Mei-Ling scored 75 out of 100 points for the same assignment. What does that score tell her? Not much more except that she did better than Kin-Wah.
- Can the scores and accompanying comments from the teacher (if any) help the students improve their next presentation? Not likely, because these comments seldom reveal everything the teacher is looking for in a good presentation.
- Even if a student is very industrious and reads all the feedback made by the professor to all the students, s/he will only get a fuzzy glimpse of what is considered a good seminar presentation.

As you can see, grades do not give students direction as to what to do next. Most will try to 'study harder' to improve their performance – whatever that may mean is all up to their own imagination. In other words, test scores and grades help professors and students to monitor learning, and to rank and to select students, but they do little to promote learning.

For example, if Kin-Wah were to improve on his next performance, he will need to know:

- What aspects of the presentation are important and being assessed, for example, aspects such as organisation, style, visual aids, content, use of language, personal appearance, and responsiveness to audience.

- What levels of mastery are for each aspect, for example, competent, acceptable, and incompetent.
- What competent, acceptable, and incompetent performance looks like, for example, an incompetent use of language may mean that the listeners are distracted by grammatical errors, use of slang, incomplete sentences, etc.
- What the consequences are of performing at each level, for example, a 'Competent' earns 3 points, whereas an 'Acceptable' means 2 points, etc.

If Kin-Wah has this information prior to the presentation, he will have a clear sense of what he is trying to accomplish. He will not have to second-guess what the professor is looking for. This information will help him to prepare his presentation properly and give him a means to assess his own work before, during, and after the presentation. The rubric brings all these useful pieces of information together.

What are Rubrics?

A rubric is a scoring scale used to assess student performance along a task-specific continuousness of criteria. It explains to students the standards against which their work will be judged. With key criteria made explicit, students can use the information to develop, revise, and judge their own work. Let's look at a simple rubric for evaluating literature research.

Research Rubric

Criteria	Weighting	Poor (1)	Good (2)	Excellent (3)
Number of Sources	x1	1-4	5-9	10-12
Historical Accuracy	x3	Lots of historical inaccuracies	Few inaccuracies	No apparent inaccuracies
Organisation	x1	Cannot tell from which source information came	Can tell with difficulty where information came from	Can easily tell which sources information was drawn from
Bibliography	x1	Bibliography contains very little information	Bibliography contains most relevant information	All relevant information is included

(*Source: http://jonathan.mueller.faculty.noctrl.edu/toolbox/rubrics.htm*)

Aspects of Quality

The rows of a rubric list the aspects of quality that are important in reaching the goal of the project. These have been targeted as important for giving feedback. For example, in the

research project above, it is important to include a sufficient number of sources, to have few historical inaccuracies, and so on.

Levels of Mastery

The columns in a rubric label the level of the student work relative to the intended outcome. In the example we have 'poor', 'good', and 'excellent'. Next to each label is the number of points a student can score as a result of performing at that level. In this way, students can easily calculate the score by multiplying the number of points with the weight assigned to each particular aspects of quality. In this example, 'historical accuracy' has a higher weighting (x3) than the other criteria.

Descriptors of Quality

The cell in a rubric provides a commentary describing the key features of work at each level of mastery. In the example, the professor describes what 'excellent organisation' means - in such a way that the reader can easily tell which sources the information was drawn from. The educational value and usefulness of a rubric is defined in terms of the richness of information in these cells. If the students read all of the information in the 'Poor', 'Good', or 'Excellent' columns, they have a clear concept of the standard of work they should strive to attain. The task they face may still be difficult, but knowing clearly what the standard is provides them with direction and with information to help them continually improve.

More Rubric Examples

Developing effective rubrics requires a lot of practice. However, you can speed up the learning process by studying rubrics created by others. The Student Learning Outcomes website at the California State University System is a good place to begin with: http://www.calstate.edu/acadaff/sloa/links/rubrics.shtml. You'll find that there are different presentation formats for rubrics.

Analytical vs. Holistic Rubrics

The most common types are the analytical rubric and the holistic rubric. Most rubrics, like the research rubric example, are analytical rubrics. An analytical rubric defines the performance standard for each criterion. The holistic rubric, on the other hand, does not list separate levels of performance for each criterion. Instead, a holistic rubric assigns a level of mastery (Poor, Good, or Excellent) across multiple criteria as a whole. For example, the analytical research rubric above can be re-written as a holistic rubric.

3 - Excellent Researcher • included 10-12 sources • no apparent historical inaccuracies • can easily tell which sources information

2 - Good Researcher • included 5-9 sources • few historical inaccuracies • can tell with difficulty where information came from • bibliography contains most relevant information
1 - Poor Researcher • included 1-4 sources • lots of historical inaccuracies • cannot tell from which source information came • bibliography contains very little information

Using Rubrics to Teach

Well-developed rubrics can accomplish two broad purposes - to educate students and to judge their work (Huba & Freed, 2000). Rubrics are more than just assessment tools; they are very powerful teaching tools that can educate students in a number of ways.

- We can use rubrics to reveal to students the standards of our discipline. By giving them clear information on what constitute excellence in a professional context, we help students internalise standards they can aspire to reach throughout their lifetime.
- Besides describing excellence, rubrics also inform students about the many qualities that constitute good, and poor, work. This is a valuable feedback mechanism that enhances the student's ability to self-assess and self-correct.
- You can involve students in setting standards. For example, before you finalise the scoring rubric for a certain assignment, have an open discussion with the class as to what criterion should be included; and what should characterise performance at each level. Ask them to give examples of poor, good, and excellent work, etc.
- The scoring rubric is also a good conversation piece that can open up meaningful dialogue with students about learning. As students are always concerned about their grades, the rubric allows us to tie together their concern with important learning issues of quality, professionalism, and so on.
- We can involve a variety of individuals to give feedback to students about their work by using a rubric. Besides their peers, you can involve other faculty members, employers, advisors, mentors, parents, and so on. Students will learn that different individuals have different perspectives and that their work will be judged in different ways throughout life.
- Rubrics can inform audiences off campus about our intended learning outcomes and standards. Professional bodies, the UGC, or foreign universities are interested at times in what we are doing or how to interpret our students' grades.
- Use the rubric to provide students with intermediate or formative feedback on their assignments. You may think that this is a time consuming; but the improvement a student can make by having his or her work assessed in progress may save you many hours of unfocused lecturing.

Steps in Constructing Rubrics

There are five questions that can guide the development of useful rubrics. Your answer to each of these questions is followed by an actionable task (Huba & Freed, 2000).

1. What criteria or essential aspects of quality must be presented in the student's work to ensure that it is high in quality? Include these elements in the rows of your rubric.
2. How many levels of mastery do I wish to illustrate for students? Include these as columns in your rubric and label them.
3. For each criterion or essential aspect of quality, what is a clear description of performance at each mastery level? Include descriptions in the appropriate cells of the rubric.
4. What rating scheme will I use in the rubric? Add this to the rubric in a way that fits in with your grading philosophy.
5. When I use the rubric, what aspects work well and what aspects need improvement? Revise your rubric accordingly.

3.4 Curriculum Mapping

Introduction

Programme outcomes give a programme its goals and directions. In principle, the curriculum, pedagogy and assessment should all support the attainment of this set of outcomes in order to make the programme a truly outcome-based one. Curriculum mapping is a tool for checking the extent to which this is achieved.

A curriculum mapping can be conceptualised as an analysis of the provision of opportunities for learning in a curriculum in relation to the curriculum's intended learning outcomes. By constructing a curriculum map, you will have an overview of how far and where in your programme each intended outcome is being addressed. You can then determine whether or not the learning opportunities provided are sufficient and in appropriate sequence so that adjustments can be made accordingly.

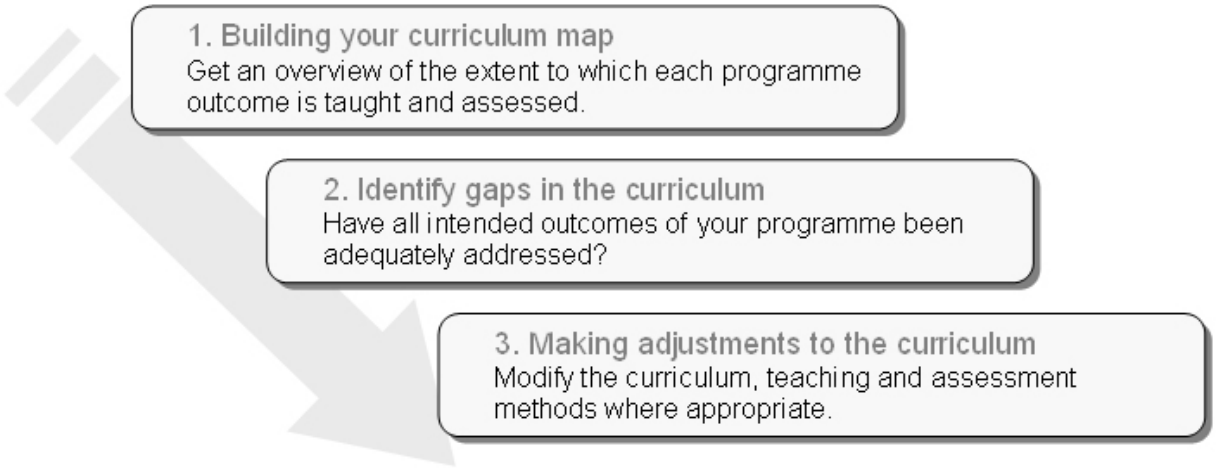
Before engaging into the process of curriculum mapping, you need to have these ready:

- Programme outcome statements
- Subject descriptions with outcome statements

The Process of Curriculum Mapping

Developing a successful outcome-based curriculum involves aligning teaching and assessment methods with the intended learning outcomes of the programme. Curriculum mapping provides a means to examine the extent to which these outcomes are being addressed and

assessed in the curriculum. In this section, we shall go through the entire process of curriculum mapping, from the construction of the map to using the map to identify gaps in the curriculum, as well as how these gaps can be addressed. This process is summarised in the diagram below.

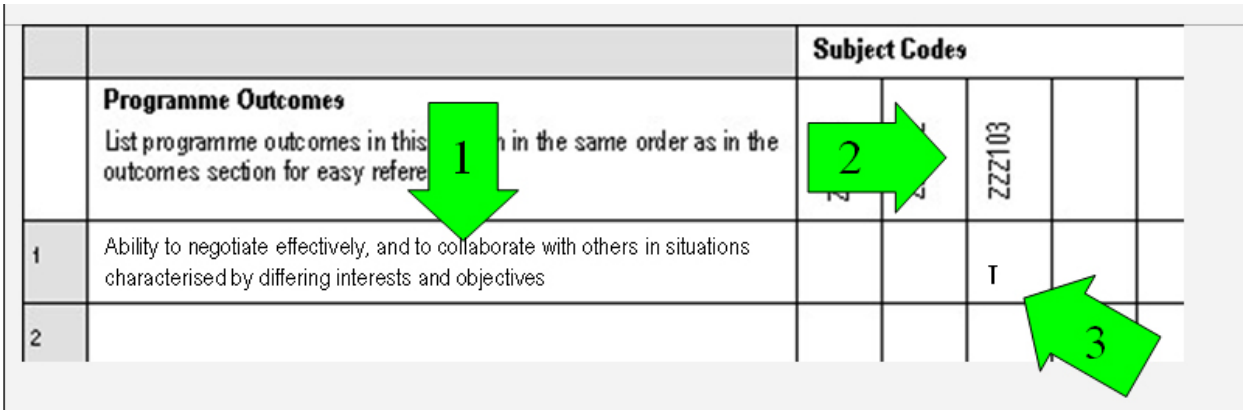


Building Your Curriculum Map

In the process of constructing the curriculum map, subject teachers will need to associate their subject outcomes with the programme outcomes. They must therefore understand the programme outcomes in order to communicate and explain how their intended subject outcomes relate to the programme outcomes. There are many ways to build a curriculum map. In this part, we shall look at two examples.

Example 1

In this example, subjects are mapped to programme outcomes according to their subject outcome statement. This allows you to see how each subject contributes to the programme outcomes and where in the curriculum each outcome is being addressed. Given the appropriate use of indicators, this map can also give you some ideas about the extent of development of each outcome enabled by the curriculum. This kind of map is suitable for programmes where most intended learning is expected to occur within the formal curriculum.



Basic steps to build this curriculum map:

1. List programme outcomes in the left-column.
2. Label the adjacent columns with the subject codes of the constituent subjects of the programme.
3. Judging by the subject outcome statements, indicate in the appropriate cell the extent to which the programme outcome is being addressed in the subject by inserting suitable indicators (alternatively, subject teachers can supply information about or complete the subject columns themselves).

Meaning of the indicators

I	(Introduced)	This subject offers learning opportunities for this particular intended outcome at an introductory level. On completion, students should have the foundational knowledge / skills / attributes to pursue this outcome further.
R	(Reinforced)	This subject will build upon student's existing knowledge / skills / attributes in this particular intended outcome to provide learning opportunities through which students can reinforce and/or further develop the knowledge / skills / attributes described in the outcome statement
A	(Assessed)	The attainment of this outcome will be assessed in this subject.

For a more elaborated map:

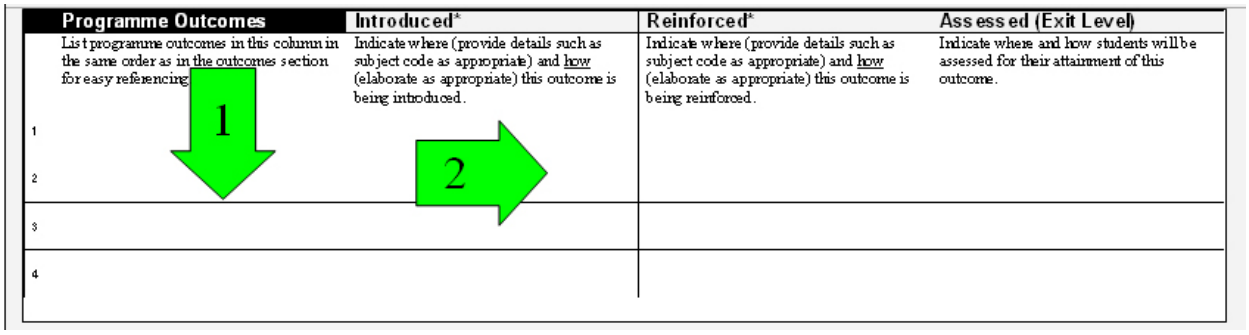
You may choose to include more information on your map, e.g. the teaching and assessment strategies employed in promoting the achievement of an outcome. Here is a simplified example of such a map:

	Subject A	**Subject B**	**Subject C**
Outcome #1	I: Lecture		RA: Case method
Outcome #2	IA: Project		
Outcome #3		IRA: Work placement	

In this example, Outcome #1 is introduced through lecturing in Subject A and reinforced and assessed in Subject C using a case method. This gives you some basis to judge whether or not the learning opportunities provided for each outcome are appropriate and sufficient.

Example 2

This map puts more focus on how an outcome is being addressed (where it is introduced, reinforced or assessed). This design takes into account co-curricular and extra-curricular learning opportunities that are available to students, of which they are expected to participate in at least some. This style of mapping is suitable for programmes in which co-curricular and extra-curricular activities form an integral part of learning.



Basic steps to build this curriculum map:

1. List programme outcomes in the left-column.
2. Indicate in the adjacent columns the subjects and/or activities where elements of the outcomes are being introduced, reinforced, and assessed respectively.

Below is an example of a simplified map. From this map you can see that opportunities to reinforce the development of Outcome #2 can be found in Subject D and Subject G and it will be given an exit level assessment in Subject H, which is the final year project. You can also see that while Outcome #1 is introduced and reinforced, it is not currently being assessed at an exit level.

	Introduced	Reinforced	Assessed (exit level)
Outcome #1	Subject A (Lecture)	Subject C (Case-based learning) Subject F (PBL)	
Outcome #2	Subject B (Interactive lecture) Subject C (Self-directed learning)	Subject D (Laboratory) Subject G (Placement)	Subject H (Final year project)
Outcome #3		Subject E (Peer tutoring) Programme A (organised by SAO)	

Identifying Gaps in the Curriculum

Now you have your curriculum map ready. It gives you an overview of the distribution of resources and opportunities. As you can see from the above examples, each row of the map tells you about where and how a programme outcome is being addressed in the curriculum. Following are some prompt questions to help you see if there are any gaps in your curriculum.

Gap analysis

Are all intended outcomes being adequately addressed?	See Case 1
Are there any outcomes addressed only in elective subjects that might, therefore, be neglected if the subjects were not chosen?	
Do the proposed pedagogy and assessment support such developments?	See Case 2
Does the curriculum provide multiple opportunities to develop each quality / ability / skill?	See Case 3
Are the development opportunities of an outcome concentrated in only one or two subjects (as a result of which students would have little chance to apply and practise what they have learnt in those subjects)?	
Are some outcomes being under- or over-represented by your curriculum?	See Case 4
Are the learning opportunities provided sufficient for the development of the intended outcomes?	

This list of questions is not exhaustive. You may think of other things that are relevant to your curriculum design process and include them in this review process.

It is important to share the results of the review among programme teachers for their comments and opinions on the appropriate actions to making the curriculum a better one. One should keep in mind that curriculum mapping is meant to be developmental and should be a collaborative effort of all teachers involved.

Making Adjustments to the Curriculum

Now that you have identified the gaps in your curriculum through the mapping exercise, you can make adjustments accordingly. Here are some common scenarios and what may be done to amend them.

Case 1: Problems with Addressing the Outcomes Adequately

There are times when the number of subjects contributing to a programme outcome is plenty, but the outcome is actually not being addressed adequately. This could happen when most of the relevant subject outcomes are written at a low level, requiring only skills like describe, name, list, outline etc. In such cases, try to re-orientate the subject learning to a higher level, demanding abilities like analyse, evaluate, design, solve etc. For example, instead of setting an outcome as 'ability to name the parts of a machine'', make it 'ability to analyse the structure of a machine'. This brings the subject outcomes closer to the functioning outcomes which the programme is trying to help students achieve. Of course, the teaching and assessment methods would need to be adjusted accordingly to support the new learning goals.

Case 2: Problems with Alignment

This issue arises when the kinds of teaching and assessment employed do not support the achievement of the intended learning outcomes (think about the example of teaching swimming by giving lectures). To amend this, consult "Aligning teaching with ILO" and "Aligning assessment with ILO" for details about choosing appropriate teaching and assessment methods.

Case 3: Regarding the Holistic Learning Experience

Most abilities develop over time. When the learning is concentrated within one or two subjects, the abilities developed tend to be out-of-context and short-lived because there is no chance to apply them elsewhere in the course. When the learning is widespread but unrelated, on the other hand, it becomes difficult for students to pull things together and integrate knowledge and skills learnt from different subjects to achieve the ultimate outcomes. In such cases, it is useful to look at the learning opportunities for an outcome as a total learning experience. Consider meaningfully combining and/or re-organising the relevant subjects as appropriate.

Case 4: Regarding Under- or Over-Represented Outcome

Both under- and over-represented outcomes point to a mismatch between what is intended to be developed and what is being developed. A typical example is one in which students are given too many opportunities to ‘get knowledge’ but too little chance to learn to apply the knowledge and develop the skills that are relevant to their professions. To change this, the programme team would need to rethink about the curriculum in terms of the outcomes to be achieved and tailor a quality learning experience for it instead of struggling for a perfect content list. Consider using subject matter as a vehicle to develop discipline-specific as well as generic skills relevant

to the profession. This approach is more preferable than cutting-and-adding subjects, because it not only restores the balance of the curriculum; it also tends to make the learning tasks more authentic.

While curriculum mapping reveals discrepancies between expectations and provision, one should also be beware of the possible discrepancies between the expectations of the programme and those of the discipline. Needless to say, the objectives and outcomes of a competent programme should always keep up with the changes in its discipline. Distribution of resources within the programme and the workload it imposes on both teachers and students are some other things to be considered when you refine your programme.

Managing the Mapping Process

Here are a few notes to ensure a smooth mapping process:

- Communicate with the teachers about the purposes and operation of the curriculum mapping exercise. Curriculum mapping is not the task of one or two individuals from the programme team, but a real team effort to understand the curriculum as it is and seek to improve it together.
- Collaborative efforts are particularly important when gaps are noticed and need rectifying.
- From subject to programme, start with subject teachers mapping their own subjects with the programme outcomes. Then put all the subject maps together to see the overall learning experiences provided by the programme as a whole.

Enhancing Teaching and Learning through Curriculum Mapping

<u>Facilitate Constructive Alignment in Curriculum Design</u>

In the process of constructing the curriculum map, subject teachers will need to associate their subject outcomes with the programme outcomes. They must therefore understand the programme outcomes in order to communicate and explain how their intended subject outcomes relate to the programme outcomes. This helps to create a shared vision among the teachers involved of what the programme is trying to achieve. The communication generated in the mapping process can also facilitate better collaboration among teachers because, as you may have already found out, seldom is a programme outcome addressed only in one subject; usually a few subjects contribute to the attainment of the outcome. Teachers from those subjects, now having become aware of their common goal, can work together to design more fruitful learning experiences for their students as far as each particular outcome is concerned. Some curriculum maps or mapping procedures also require teachers to indicate their intended teaching and assessment methods. This stimulates them to reflect on their teaching and assessment methods in relation to their intended learning outcomes, thus constructive alignment in their curriculum design achieved.

While curriculum mapping is clearly useful in reviewing a curriculum, it also creates an opportunity to review the objectives of your programme. There are times when the curriculum evolves more quickly than the programme objectives (and thus intended outcomes). In such cases, the existing curriculum may be a better representation of a good programme than the existing list of outcome statements. The point is that curriculum mapping is just a means to facilitate constructive alignment in curriculum design; it is not the end of, or any definitive criterion for, the curriculum development exercise. One should beware not to engage in the mapping process alone and forget about the actual purpose of reviewing the curriculum.

Help Students Manage Their Own Learning

Curriculum mapping is not really a painless task. The good news is that the product - the curriculum map - is not only useful to the programme team, but also to all students taking or thinking about taking the programme. One major de-motivator in learning is the confusion in learning objectives. A curriculum map clarifies learning goals for students and gives them a holistic picture of the programme. It also enables students to learn about the opportunities available in the programme through which they can develop academically, professionally and personally, so that they can manage their learning better.

4. Developing a Programme Learning Outcomes Assessment Plan

This session has been written for programme leaders and other staff members who are likely to have key involvement in developing a programme learning outcomes assessment plan (programme LOAP) at PolyU. It offers a simple explanation of and practical tips on what you can do to develop your programme LOAP. It is intended to be a guideline, with some suitable examples, rather than to be prescriptive.

4.1 What is a Programme Learning Outcomes Assessment Plan (LOAP)?

Put simply, a programme LOAP is a blueprint for finding answers to the following questions:

- What do we expect graduates from our programmes at PolyU to be able to do (i.e., the programmes' intended learning outcomes)?
- How will we know if they can actually do it?
- What changes will need to be made to the programme to enhance our effectiveness in helping our students to achieve the intended learning outcomes?

A successful implementation of an effective programme LOAP should be able to provide us with credible evidence to tell:

- What proportion of our graduates is able to achieve the professional and generic competencies at a standard appropriate for an entry-level professional in their chosen field?

- Which of the learning outcomes of our programme have been achieved satisfactorily and which outcomes need improving?
- What improvement actions should we take to enhance programme effectiveness? What data can we use to inform the decision, and how?

In a programme LOAP our focus is on evaluating the overall effectiveness of the programme, rather than assessing the performance of individual students.

4.2 Why do We Need a Programme LOAP?

The following extract from an email circulated to PolyU staff by the Vice President (Academic Development) and Chairman of LTC in May 2008 tells us why it is important for the University to develop a LOAP.

> The LOAP is important in that it ensures the systematic collection of assessment data for improving the effectiveness of our programmes, and demonstrates to our stakeholders, including employers and UGC, how well our students are performing with regard to the learning outcomes.

Outcomes assessment is an integral part of an outcomes-based approach to teaching, learning and assessment, and is a useful vehicle for continuously improving our programmes. The relationship between outcomes assessment and outcomes-based approach to teaching and learning is shown diagrammatically in Appendix 1.

Why is it necessary to develop LOAPs at programme level?

Ultimately our goal is to use the LOAP to improve student learning. We can do this most effectively at **programme level** because this is where we can make the best use of the data gathered to make any necessary improvements to curricula, teaching and learning that are identified. Below is a list of the ways in which a LOAP can bring benefits to your programme:

- It enables you to review and improve the effectiveness of your programme, based on evidence of learning outcomes actually attained by the students.
- It gives you documented evidence of your students' learning and achievement, based on the actual outcomes they have achieved, for accreditation or accountability purposes.
- It showcases the quality of your programme and your graduates to appeal to prospective employers, students, collaborators and donors.
- It contributes to the University's overall LOAP

Differences between subject grading and programme learning outcomes assessment

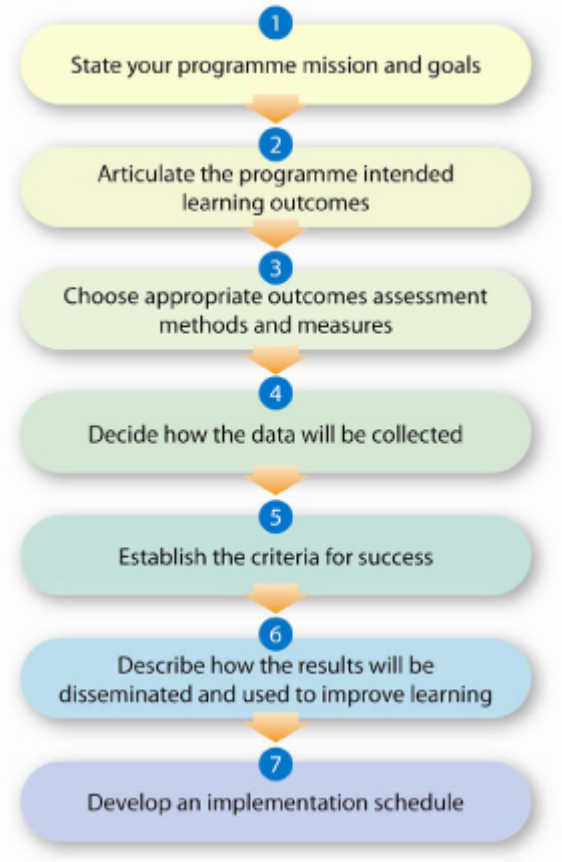
As teachers we regularly assess students' performance in individual subjects and assign grades. However, subject grades alone often cannot help to assess whether the programme as a whole is effective in achieving its stated learning outcomes. This is because:

- Subject assessments focus on measuring the performance of individual students, not the overall effectiveness of the programme.
- In subject assessment, we measure how well students are doing in a particular subject, focusing on the subject knowledge and skills rather than on the broader programme objectives, which often require students to integrate and apply learning from multiple subjects within the programme.
- The one single grade which we normally assign to students in subject assessment often does not indicate separately how well students have attained the different generic graduate outcomes such as critical thinking, creative problem solving or teamwork skills, even if such skills are assessed.

Given the differences in purpose and focus, it is necessary to use different processes to collect different types of data for assessing programme learning outcomes, rather than relying on the routine subject assessments and grades alone. The different types of data to be collected and the processes to be used are explained in the sections below.

4.3 The 7-Step Approach to Developing a Programme LOAP

Having, we hope, convinced you that a programme LOAP is an important tool for you to assess and improve the effectiveness of your programme, we will now take a look at some suggestions for developing your own programme LOAP. Based on the experiences of others who have gone through this exercise, we have prepared some guidelines that you might find useful to guide your planning. Immediately below is a brief overview of the steps that others have found useful to follow.



The 7-step approach to development a programme LOAP

4.4 A Step-by-Step Guide to Developing Your Programme LOAP

In this section we will take you through each of the above steps in more detail. Below is a snapshot of a suggested template, which is shown in full in Appendix 2. The superscript numbers adjacent to some of the entries in the template correspond to the steps outlined in the previous section. You might find this template serves a useful starting point for the development of your programme LOAP, since it includes the essential components that are commonly included in LOAPs. However, you might wish to adapt or modify it as appropriate to suit the contexts and needs of your particular department or programme.

Department/School/Faculty:

Name of Programme:

Programme Mission/Goals [1]:

Part I: Programme learning outcomes assessment methods and procedures

Programme Intended Learning Outcomes [2]	LOA methods and measures [3]	How the data will be collected [4]	Criteria for success [5]	How the data will be disseminated and used for improvement [6]
1				
2				
3				
4				

Part II: Implementation schedule and responsibility

LOA methods or activities	Implementation schedule [7]			Person(s) responsible
	2009-10	2010-11	2011-12	
1				
2				
3				
4				

A suggested template for a programme LOAP

In the sub-sections that follow, we will take you through each of the essential components of a programme LOAP and elaborate on what is expected/required and why, and provide you with some useful tips to make your task smoother. In some places we have also included some references and links that might be useful if you would like to go into more detail. The specific examples of a hypothetical programme LOAP shown in Appendix 3 might be useful to clarify your understanding further.

1. *Programme Mission and Goals*

What is expected or required?

- Include a brief statement of the overarching mission and goals of your programme, and ensure that they are aligned with PolyU's mission and goals.
- If you would like to see an example of this, please refer to Note 1 in Appendix 3.

Why?

- Successful programme outcomes assessment begins with clarifying what the programme aims to accomplish or deliver.

How?

Tips

- All undergraduate programmes have already done this in the 2005 Curriculum Revision Exercise, so it can be as simple as copying directly from your existing programme document.

- On the other hand, it may also be useful to use this opportunity to review and further refine your programme goals.
  - Look at whether you have actually covered all the important goals as expected by the key stakeholders.
  - Check whether the goals are broad enough for a holistic university education in addition to professional training.
  - Examine the extent to which they embed PolyU goals (because programmes are expected to do this).

Useful References

- PolyU 2005 Curriculum Revision Handbook
- Appendix 3 Note 1

- University of Central Florida (2005), Chapter 3
  p.18: Examples of poor and good mission statements p.21: The 'ideal student' approach p.24: Four questions for reviewing your program goals
- University of Massachusetts Amherst, (2001), Chapter 2: Examples of where to start with program goals and objectives

2. *Programme Intended Learning Outcomes*

What is expected or required?

- Articulate clearly the major intended learning outcomes (ILOs) of your programme in terms of the desirable qualities of graduates that you aspire to produce. This means what your graduates are expected to be able to do or demonstrate on completing the programme.
- If you would like to see an example of this, please refer to Note 2 in Appendix 3.

Why?

- Doing this ensures that the goals you value for your programme are addressed adequately, and guarantees that the important knowledge, skills and attitudes are appropriately introduced, reinforced, and assessed through the curricular and co-curricular activities of your programme.
- A clear description of what your students should be able to do or demonstrate on exit will also enable you to select appropriate measures and methods to assess the extent to which your students have achieved each of the outcomes, and to evaluate the effectiveness of your programme in achieving its stated outcomes.

How?

Tips

- In the 2005 Curriculum Revision Exercise all programmes have articulated ILOs, so it can be as simple as copying directly. However, to ensure that the outcomes assessment exercise will not create excessive workload on staff, you may wish to **concentrate on a smaller number of key programme outcomes** that are of greatest interest/concern to the programme team or other stakeholders, or those that are more likely to sustain under the new 4-year undergraduate degree structure.
- Again, it may be useful to use this opportunity to review and further refine these. In this case, the following three points might be useful for you to consider:
  - Check whether the stated ILOs cover both profession-specific and generic outcomes.
  - Don't try to include too many programme learning outcomes. About 12 is a good number to give you a comprehensive overview of your programme without making the exercise unwieldy.

Useful References

- PolyU 2005 Curriculum Revision Handbook.
  - Appendix 3 Note 2
- Examples of intended programme learning outcomes
- University of Central Florida (2005) Chapter 4
  p.40: Examples of good and poor outcome statements
  Appendix 4A: A useful checklist of points to be kept in mind when developing student learning outcomes for your programme

- Keep them realistic: if you are too ambitious in setting learning outcomes that might be difficult for undergraduate students to attain, you will then be accountable and need to explain why they might not have been achieved. On the other hand, if you set outcomes that are too easily attainable you will not be offering your students the opportunity to extend themselves.

- Nichols & Nichols (2000), pp.21-23: How high should intended educational (student) outcomes be set? (See Appendix 4)

- Note that, although you <u>are</u> not required to do so in this LOAP exercise, for the purpose of accreditation or accountability audit, your programme might be expected to demonstrate:
  - How these ILOs actually align with your programme missions and goals, and
  - How these ILOs will be realized through your curricular and co-curricular activities.

- Examples of mapping of ILOs with programme mission and goals:
  California Polytechnic State University: Examples of goal and mission statements; learning objectives; and a matrix to summarise the relationship between these

Curriculum maps that show the relationship between programme goals and programme ILOs, and between programme ILOs and where in the programme each ILO is to be introduced, reinforced and assessed is a useful tool to accomplish this.

- The example from California State University, Fresco on curriculum mapping may be useful in deciding where in the programme each objective is to be met:
  Programme purposes
  Curriculum map

3. *Learning Outcomes Assessment Methods and Measures*

What is expected or required?

- For each of the intended learning outcomes of your programme listed in your LOAP, describe specific method(s) and measure(s) you will use to assess the overall programme effectiveness with respect to that particular outcome.
- If you would like to see an example of this, please refer to Note 3 in Appendix 3.

Why?

- Appropriate methods and measures are needed to ensure that the data collected are credible and trustworthy, and useful for identifying the strengths as well as areas in your programme that need improvement.

How?

Tips

- You may need to include both **direct** and **indirect** measures i your programme LOAP.
- **Direct measures** are based on direct assessment of students' work, performance or behaviours. The list below describes sc common examples of direct measures. If you wish to find out more about any of these methods, more detailed description references for further reading can be found in Appendix 5.
  - *Course-embedded assessment*: This uses assessment tasks th are used in existing subjects. As well as assessing the task for purpose of giving student grades, the same task is used to as what percentage of the students have achieved the program learning outcome in question. For example, to assess written communication skills a research report that the students are required to produce for, say, a disciplinary subject can be evaluated using an assessment rubric for the purpose of programme outcomes assessment.
  - *Capstone experience or project*: This kind of experience draw all of the knowledge, concepts and skills covered in the whol programme – the students are required to combine various aspects of their experiences throughout the programme. If th outcome of interest is, for example, critical thinking, suitable rubrics can be developed to evaluate how well the students h achieved and demonstrated critical thinking in their capstone experience paper or project report.
  - *Portfolio assessment*: A portfolio is usually a collection of sele student work that demonstrates the student's progress and achievement in certain areas.
  - *Performance assessment in WIE or placements*: This can be a effective way to assess students' practical knowledge, skills a attitudes in a workplace context. Clinical or workplace superv can use specially-designed assessment forms and rubrics to a outcomes such as interpersonal, communication, critical thin

Useful References

- Appendix 3 Note 3
- Appendix 5
- Examples
- 8 steps for creating and designing course-embedded assessment
- Capstone course/embedded assessment
- Portfolio assessment
- Performance assessment

and/or problem-solving skills.

- *Tests and examinations*: These can be either tests that you ha developed to measure your students' knowledge and skills, o commercially produced ones (e.g., the California Critical Thin Test, the Collegiate Learning Assessment, the Major Field Tes specific discipline). They are usually used to measure process content-related knowledge. One way in which tests can be us to measure how well your students have learned something have taught is to use a pre-test/post-test model.

- Use of standardised test
- Use of value-added assessment
- Major field tests

- **Indirect measures** normally involve stakeholders' perception how well the students have attained the learning outcomes a thus, are relatively more subjective in nature. Below are som examples of indirect measures that are used often. Again, yo find some more detailed information about these in Appendi you would like to read more.

- Indirect outcomes assessment me

- *Alumni surveys or interviews*: These are a good way to collect information about graduates' views of their preparation for professional work, satisfaction with the programme or the relevance of the curriculum.
- *Employer surveys or interviews*: Asking employers about thei levels of satisfaction with recent graduates is a good way to g another view of your students' attainments.
- *Student surveys or interviews*: One of the best sources of dat the students themselves. They can give us perceptive insights about their attainment of outcomes. These can either be conducted to collect formative information during the studer course, or as an exit survey to collect their reflections.
- *External reviews*: Peer review of academic programmes or students' work is a widely accepted and useful way to benchi the quality of the programme and graduates against external standards.

- Direct measures are more costly to collect. However, they ar more authentic and credible, and therefore are needed for th more important/prioritized/most essential outcomes, particu for accreditation and accountability purposes. Indirect measu on the other hand, are easier to collect, but are less objective credible as evidence of actual learning outcomes achieved by students.

- Try as much as possible to make use of course-embedded assessments (see description in Appendix 5) to collect direct evidence of student learning outcomes from existing assessm tasks that are being used to grade students. Since students a simply fulfilling normal course requirements, it does not becc an add-on task; there are no issues of motivating students to the task/s and the results can provide useful additional information for the subject teachers.

- **Focus on the most important outcomes**: Most programmes h many learning outcomes, but there is no need to consider all them in this exercise unless you are specifically required to d for professional accreditation. You may focus, instead, on the most important outcomes that are of the greatest interest/concern to the programme team or other stakehold particularly those that are more likely to sustain under the ne year undergraduate degree structure. One possibility is to de a multi-year rotation plan so that you will address different outcomes each year and thus cover all of them over a few ye

- The best starting point is to find out what you already have in place rather than re-inventing a completely new set of assessment activities or tools (e.g. you may already have appropriate course assignments or exam components that yc can use to assess certain programme outcomes, or feedback/surveys on students' learning process or outcomes

- It is useful to check out and include existing surveys conducte SAO and EDC that can provide useful (indirect) data for asses your programme outcomes (e.g. SAARD [Self Assessment of A Round Development] questionnaire, graduate employment survey, alumni survey).

- Pros and cons of different types o outcomes measures

4. *How the Data Will be Collected*

What is expected or required?

- For each ILO included in your LOAP, explain how the outcomes data or evidence will be collected (i.e., how, when and by whom).
- If you would like to see an example of this, please refer to Note 4 in Appendix 3.

Why?

- It is important to communicate clearly to all those involved what their respective responsibilities are, and the specific instrument, protocol and timeframe for conducting the outcomes assessment activities, to ensure that the activities will be carried out as planned.

How?

Tips

- For each assessment activity, describe:
  - Who will be responsible for collecting the data.
  - How the data will be collected.
  - When and how often.
  - The instrument/method to be used.

Useful References

- Appendix 3 Note 4

5. *Criteria for Success*

What is expected or required?

- State how the data collected will be interpreted, including the criteria to be used for judging your programme's effectiveness in achieving each of the intended learning outcomes.
- If you would like to see an example of this, please refer to Note 5 in Appendix 3.

Why?

- It is necessary to state clearly the criteria and standard to be used for judging the extent to which the programme has succeeded in achieving its intended outcomes. Without specific criteria for success, this can become a meaningless data collection exercise.

How?

Tips

- For programme learning outcomes assessment purposes it is sufficient to have broad categories of measurement rather than very precise measurement of the performance of each individual student, for example:
  - Student's performance far exceeded the required/ expected standard.
  - Student's performance basically met the required/ expected standard.
  - Student's performance was at a level below the required/expected standard
- The criteria should be determined and agreed upon by the programme team, taking into consideration the views of the external stakeholders.
- Think of ways to benchmark the outcomes assessment results with appropriate internal/external standard.
- It is important to recognize that you do not necessarily need to expect 100% of your students to be able to achieve the intended learning outcomes - there is always going to be some variations in the quality of student intake, graduates' aspirations and measurement errors.

Useful References

- Appendix 3 Note 5

6. *How the Data Will be Disseminated and Used for Improvement*

What is expected or required?

- Explain how the outcomes assessment processes and results will be incorporated into your Department's generic Quality Assurance processes, and how it will be used for systematic programme review and improvement purposes.
- If you would like to see an example of this, please refer to Note 6 in Appendix 3.

Why?

- The ultimate goal of learning outcomes assessment is to improve student learning through evidence-based programme review - failing this, assessment becomes another meaningless bureaucratic chore.

- You can use your outcomes assessment results/report for multiple purposes, such as for accreditation, as well as curriculum review and improvement.
- Secondary uses of the results may include recruitment, alumni newsletter, publications and sharing with other universities, career services and securing grants.

How?

Tips

- Assessment information is of little value unless it is shared with appropriate audiences and used in meaningful ways. The best use of learning outcomes assessment results is to share them with your colleagues and use the assessment data to aid **evidence-based decisions or improvements** at the programme and departmental level.
- One way to achieve this is to incorporate programme outcomes assessment into the regular programme review process, and report the outcomes assessment data and improvement actions resulting from it in the Department's Business Plan and QA Report.
- Describe clearly who will receive the outcomes assessment results by when and for what purpose, and how the results will be acted on to improve students' learning.

Useful References

- Appendix 3 Note 6
- See other examples

7. *Develop an Implementation Schedule*

What is expected or required?

- List the programme outcomes assessment methods or activities proposed in Part I of your programme LOAP, and indicate for each: the academic year(s) during which it will be conducted, and the name of the person(s) who will take primary responsibility for implementing the assessment activity.

Why?

- Assessment takes up valuable staff time and effort; we need to ensure that the assessment plan is feasible and affordable with given resources, and will not create excessive workload on staff.

How?

Tips

- It is more meaningful to conduct systematic assessment on the key learning outcomes in rotation than trying to cover all of them every year in a superficial manner.
- Schedule your outcomes assessment activities to align with internal QA (e.g., triennial business planning, Departmental Assessment, etc.) and/or external accountability processes (e.g., professional accreditation or other external reviews) to minimize duplication of effort.

Useful References

- Appendix 3 Note 7

4.5 Checklist

The list below helps you to check that the most salient features of a programme LOAP have been covered. It is also useful in giving Faculty/School Boards a framework on which to base their endorsement of the Departmental/ programme LOAP.

Programme Mission and Goals

1. Are the programme mission and goals clearly stated? ❑
2. Are the mission and goals appropriate and worthwhile, and include all the important goals as expected by the key stakeholders? ❑

Programme Intended Learning Outcomes

3. Are the intended programme learning outcomes clearly articulated? ❑
4. Are they aligned with stated mission and goals of the programme? ❑
5. Is the number of intended programme outcomes about right (not too many or too few)? ❑
6. Are the intended programme outcomes realistic? ❑

LOA Measures and Methods

7. Are the assessment methods adequate and appropriate for measuring the specific student learning outcomes? ❑

8. Are multiple (direct and indirect) measures used? Is there over-reliance on a particular type of measure? ❑
9. Does the plan make good use of existing subject assessments? ❑
10. Is it clear what will be done to collect the data, when, how and by whom? ❑

Criteria for Success

11. Have the criteria to be used and expected levels of achievement been indentified? ❑
12 Are the results benchmarked against appropriate internal/external standards? ❑

Dissemination and Use of the Data for Improvement

13. Is the programme learning outcomes assessment appropriately integrated with the Department's generic quality assurance and programme review processes? ❑
14. Does it clear how the data will be to inform the Department and programme for possible improvement? ❑

Other Issues to be Addressed

15. Does the plan appear to be feasible, practicable and affordable, given the resources available? ❑
16. Is staff time/workload appropriately addressed? ❑

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