

The Development of an Outcomes-based Approach to Teaching and Learning at The Chinese University of Hong Kong

Overview of work to date

Background

Since its inception, The Chinese University of Hong Kong (CUHK) has adopted measures to ensure that its students receive an education which can demonstrably be called a quality university education. For example, the external/visiting examiner system was expressly designed to ensure that the learning outcomes of graduates are commensurate with the standards expected by each academic discipline or profession.

The meaning ascribed to ‘learning outcomes’ has clearly changed over time – from a tacit understanding that subject knowledge should be the central focus of a university curriculum to a broader, more inclusive educational philosophy where the task of a modern university is seen as producing graduates who have depth in a specialty, breadth in general knowledge, biliteral/ trilingual proficiency, cross-cultural sensitivity, a basket of learning skills, and personal attributes including honesty and integrity. The basket of learning skills includes numeracy, analytic skills and IT capability appropriate to the modern age, and above all the ability to continue with life-long learning and professional development. This interpretation of learning outcomes is clearly described in the University’s Strategic Plan (February 2006) which was the culmination of detailed consultation across the University.

The evolution of CUHK’s quality assurance system in teaching and learning is congruent with this broad interpretation of learning outcomes. For the last three years CUHK has moved through a number of phases in the development of its current approach to quality assurance in teaching and learning along outcomes-based lines. Three phases can be identified.

Phase 1: Development of a coherent teaching and learning policy based on explicitly articulated principles

The ‘Integrated Framework for Curriculum Development and Review’ (Integrated Framework) was launched in March 2004 after wide consultation. Its main objective is “to ensure that teachers and programmes engage in *reflection* about teaching and learning, that such reflection is rooted in *evidence* and leads to *action* for improvement, and that *incentives* be provided for such efforts” (Section 3.1.1).

The five integrated or aligned curriculum elements of the framework are learning outcomes, content, learning activities, assessment and feedback for evaluation (see Figure 1). The processes of programme and course planning and review that are outlined in the Integrated Framework have been crafted to support programmes in the process of defining appropriate learning outcomes, designing suitable teaching and learning environments, and then monitoring students’ attainment of the desired

learning outcomes. The whole policy thus has a clear outcomes-based approach (OBA).

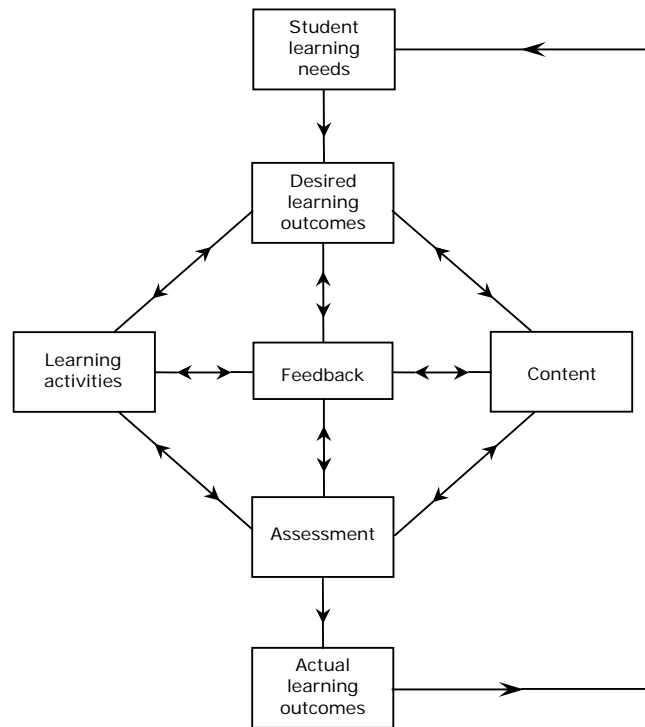


Figure 1. A model of an aligned curriculum

Phase 2: Implementation of this policy through a number of strategies

These strategies are congruent with each other but are still relatively self-contained. Strategies include:

- Comprehensive **undergraduate programme reviews**. Each review involves a panel of senior CUHK teachers and a visiting examiner who examine evidence of teaching and learning quality, and interview teachers, students and alumni. For example, the consistency between assessment schemes and intended learning outcomes is carefully scrutinized; also, alumni are interviewed about how the learning outcomes they achieved during their studies at CUHK have served them in the workplace.

Ten reviews were conducted during 2005 and 2006. Fourteen reviews are scheduled for 2007. The process begins with the programme's own evidence-based self-evaluation report. The review panel considers all the evidence and produces a report documenting strengths and challenges. After discussion, the programme then produces an explicit action plan to guide work during a six-year cycle before the next formal review. There are financial incentives to ensure that the review process is taken seriously.

The rolling pattern of reviews is seen as an evolving process of reflection and learning, and the University has taken steps to continually refine the process. All review reports are considered by the Senate Committee on Teaching and Learning (SCTL). Through this process small changes were incorporated after reflection on the first set of reviews. Further, the evidence of the reviews is disseminated to all programmes to assist them in preparing for the review process. For example, an analysis of the documentation for the first ten reviews resulted in a document 'Instances of good practice in teaching and learning noted in programme reviews 2005 and 2006'. This document was disseminated to programmes, and is used in professional development activities.

- The use of a programme-level evaluation instrument: the **Student Engagement Questionnaire (SEQ)**. This questionnaire focuses attention on how certain features of the teaching and learning environment support the development of a number of desired student learning outcomes – critical thinking, creative thinking, self-managed learning, adaptability, problem solving, communication skills, interpersonal skills & groupwork, and computer literacy. The data from the SEQ emphasize that outcomes are more than subject knowledge. The administration of the SEQ began in 2003 and so programmes now have access to a growing set of longitudinal data.
- The design of **professional development** courses (PDCs) and materials that emphasize the importance of clear articulation of learning outcomes, an alignment of teaching and assessment with these outcomes, tools to gather relevant evaluation data, and a culture of evidence-based self-reflection leading to improvements – in short an OBA to professional development. All new teachers of junior rank and all teaching assistants (TAs) undergo mandatory professional development along these lines. Since 2003 there have been 17 12-hour PDCs for teachers, with 324 teachers completing the course. There have been 81 PDCs for teaching assistants, with 1,929 TAs completing a course. Each TA course is customized for the needs of the department concerned.
- Building careful consideration of learning outcomes into the **detailed planning for the four-year normative length undergraduate programme (3+3+4)**. This detailed planning is overseen by an institutional Task Force to Prepare for a Four-Year Normative Curriculum. The work of this Task Force is to support and guide faculties in the iterations of curriculum design that will occur in the lead-up to 2012, and to ensure sharing of experience across the University. Integration of an OBA into the 3+3+4 planning process was a key feature of the University's progress report to the UGC in May 2006. As noted earlier, the University-wide articulation and adoption of learning outcomes has been a feature of strategic planning for the last few years.
- **Capacity-building in OBA across the University**. The use of Teaching Development Grants (TDGs) is a good example of how capacity-building is being achieved. The first round of the TDG allocation process for the 2005–08 triennium at CUHK took place in 2005. The 14 projects that were funded in the first round focused on enhancements to teaching and learning in the areas of content, learning activities and assessment. In 2006, the growing OBA maturity across the University resulted in many more projects focusing more explicitly on learning

outcomes. In this second round, 13 projects were funded. Five faculties are represented in projects with an explicit emphasis on articulating and supporting the development of desired learning outcomes. In addition, two projects have a clear focus on programme-wide evaluation. In the third round (see phase 3 below) this trend is continued; of the nine projects funded, six projects have an explicit focus on learning outcomes, four of which also focus on programme evaluation. The role of students is also more central than in earlier TDGs. The shifts in the nature of TDG projects are portrayed in Appendix 1. The positioning of each project is intended to portray the central thrust of the project, though clearly there are other curriculum elements involved.

- **Development of a network to support OBA.** Since its inception in November 2003, the SCTL has met regularly (ten times to date) to review progress on all teaching and learning matters at CUHK. This is a senior academic committee – all of the Pro-Vice-Chancellors are members of the Committee. Each faculty is represented by a Dean or Associate Dean (Education) and students are also represented. This group has formed a strong network and is the key group to champion OBA at CUHK. Both of CUHK’s members on the inter-institutional Task Force on Promoting Outcomes-based Approaches in Student Learning are active members of the SCTL.
- It should be noted that at CUHK we tend to **focus at programme level more than on the individual courses that constitute different programmes.** We do this in order to engage whole departments in discussion about OBA and thus avoid the atomization and fragmentation that can occur with a total focus on innovation and change at the level of courses. The combination of preparation for programme reviews, planning for 3+3+4, and strategically designed TDGs has created a considerable culture shift at CUHK. The forthcoming quality assurance audits will no doubt strengthen this focus. However, it is important to keep the synergy between a holistic curriculum view at programme level and strengthening the design of individual courses to align with this view. To that end, CUHK has also instituted a Course Outline Service to give advice to teachers and departments on how to develop and articulate an OBA at course level; 526 courses have received feedback thus far through this service.
- **Positioning of students as central to the process of curriculum alignment.** Educational reform is occurring in Hong Kong schools but it is probably more difficult to achieve a high level of success in the school system than it is to change higher education because of the scale of the school system. As a result, at this time, many students who enter higher education may know quite a lot of content but have been schooled in a way that focuses on ‘model answers’. Asking students to let go of the certainty of ‘right’ answers and pursue their studies in a more open outcomes-oriented fashion does not occur easily. So, we need to concentrate on supporting students in exploring the meaning and processes of an OBA as much as we need to support teachers. CUHK has been aware that students need to be engaged in the dialogues about the meaning of OBA as much as teachers do. Consultation with students is normal in all departments; it is also part of the follow-up strategies programmes use with the SEQ; students sit on the SCTL and on Senate; and students are actively involved in the TDGs listed in Appendix 1.

Phase 3: Consolidation of initiatives by focusing on explicitly on an OBA in all Units

We have now reached the phase where individual faculties and the Office of University General Education (General Education) are increasingly interested in, and willing to, take ownership of the outcomes-based philosophy. This means that each faculty (including the School of Law) and General Education can take on the task of producing its own roadmap for the interpretation and implementation of an OBA. This will not happen overnight but the 2006–07 academic year has been an apt time to begin. The strategies noted in phase 2 are well understood and it is timely for faculties to begin to frame strategies and timelines which work best for them. This is entirely consistent with the culture of CUHK as a collegial university with a strong focus on the comprehensive range of disciplines represented in the faculties. General Education acts as a unifying feature of students' curriculum experience at CUHK and the Colleges are a strong feature of the community orientation of CUHK. So, the University plans to support the development of an OBA within each faculty and within General Education. These OBA initiatives will be coordinated centrally so that the faculties and General Education can learn from each other and optimize their own initiatives.

Phase 3 has begun in the 2006–07 academic year. One intention in the allocation of projects in the **third round of the TDG funds** was to ensure that the momentum developed in phase 2 could be maintained. Each Unit (the seven faculties, the School of Law and General Education) at CUHK now has at least one major project which has a clear OBA focus. In some cases, other faculty funds have strengthened the TDG plan; this shows the commitment to an OBA approach. This plan for TDG funding also acts as a clear bridge into the work of the new inter-institutional Task Force on Promoting Outcomes-based Approaches in Student Learning. This plan is consistent with the criteria for TDGs which are clearly aimed at system-level improvements in teaching and learning activities of the University (70%). Further, as the criteria also include an emphasis on achieving identifiable outcomes and evaluating the impact on teaching and learning (30%), a scheme that foreshadows the additional OBA funding is strategically sensible.

Some examples of these projects which we have termed 'pilot OBA' projects are:

- exploring the articulation of programme-level learning outcomes is some creative way through demonstrations of student work;
- development of assessment matrices (or grids) which show how assessment is linked to learning outcomes across a whole programme. Changes to assessment would be expected in order to achieve (better) alignment;
- looking at evaluation evidence, bearing in mind that course evaluation questionnaires are only one measure in a set of learning-focused evaluation strategies; and
- development and implementation of the structure for an internal quality assurance system within a Unit.

Each Unit now has a suitable project that addresses an aspect of OBAs in teaching and learning not currently being addressed by the Unit. The coordination of these projects between faculties, the School of Law and General Education is important so that the

experience is shared across the University. Strategies planned for ongoing coordination to ensure that the experience is a ‘whole University’ one include: workshops conducted by Centre for Learning Enhancement And Research (CLEAR); a website; a series of seminars to report, discuss and showcase the experience; and a collection of papers about the experience.

The process of faculty ownership of an OBA is thus clearly underway as the work of the new inter-institutional Task Force begins.

Summary of work to date

CUHK has an established history of seeking evidence about the quality of its graduates. This culture of quality has crystallized over the past five years into the University being in a position where an OBA is widely accepted and interpreted in the University as meaning that students graduate from CUHK with a broad and well integrated set of learning outcomes. Further, there have been concerted moves towards capacity-building in all elements of curriculum design through a range of initiatives including programme reviews, reflection on the SEQ data, professional development courses, a carefully orchestrated planning process for the four-year normative length undergraduate programme (3+3+4), increasingly strategic alignment of TDG funding, development of an appropriate collegial network, and increasing involvement of students in curriculum matters. On the basis of all that has been accomplished/ planned to date, CUHK has positioned itself well with respect the adoption of an OBA in its teaching and learning. It can thus maximize benefit from extra funding in the years 2007–2012.

Plan for utilization of the time-release funding

By 2012, CUHK will have in place a four-year normative curriculum that stresses desired outcomes which, in addition to intellectual depth in at least one subject, also include breadth of knowledge across disciplines and a basket of skills appropriate to the modern age. These outcomes will be achieved through a balanced curriculum in which language enhancement and General Education, for example, play important roles, and where room for free electives will be protected and can be used for possible double majors or double degrees. Opportunities for research experience as well as participation in non-curricular enhancements are designated as educational goals. These plans were described in detail in the University’s progress report to the UGC in May 2006.

In the triennium 2009–2012 CUHK students will benefit as departments and programmes refine their thinking about OBA and incorporate various aspects into existing programmes and courses. The processes described under phase 2 have already made significant impacts on several programmes, and this momentum will be maintained.

CUHK is aware that the period around 2012 will be especially challenging with students exiting from both forms 6 and 7 to enter the University. The University already has a number of committees and groups working at both University and Faculty level who have begun to address this complex planning issue.

The SCTL will oversee and direct all aspects of the OBA projects which utilize this funding. Further, SCTL members will support the two CUHK members on the inter-institutional Task Force in their work within CUHK and across Hong Kong.

In this plan there are nine Units: the Faculties of Arts, Business Administration, Education, Engineering, Medicine, Social Science and Science; the School of Law; and General Education. Once a top-slice is taken for partial time-release of the two CUHK members on the inter-institutional Task Force, the vast majority of the remaining funding will be allocated to Units involved directly in teaching students. The suggested process will follow the same model as the 'pilot' projects using TDG funding which are currently being enacted. A 'whole University' experience is essential if synergy between local ownership and institutional-level claims about quality is to be achieved. Further, the Director of CLEAR is one of CUHK's members on the inter-institutional Task Force and will be closely involved with the whole project.

In the first year, each Unit will be asked to consolidate all their ongoing initiatives into a strategic OBA roadmap. This roadmap will indicate how an OBA will be implemented into all programmes of the Unit. (While the emphasis will be on UGC-funded programmes, Units could reasonably be expected to extend the approach into their self-funded courses but this will not be monitored in the first instance.) The roadmap should include:

- programme-level descriptions of desired student learning outcomes. This might be articulation in discipline-specific terms of the more generic learning outcomes listed above in the 'background' section and in the description of the SEQ;
- an analysis of the strengths and challenges that the Unit faces with respect to adopting an OBA;
- how an OBA has been built into the Unit's 3+3+4 plans;
- details of specific strategies that are gauged to capitalize on the strengths and address the challenges so as to achieve an OBA;
- a prioritization of these strategies. For example, as the first task, a Unit might wish to articulate a Unit-wide assessment policy, or examine the value of a strategy such as case-based learning, or investigate diagnostic testing, or develop mentoring schemes to assist student learning, etc. The work of the pilot TDG should inform this prioritization process;
- a detailed proposal for work on the strategy with priority number one;
- clearly defined and described monitoring mechanisms to use during the further implementation of an OBA during the period till 2012; and
- plans for addressing the time around 2012 when students will exit from both forms 6 and 7 to enter the University.

The roadmap needs to indicate how the Unit envisages its curriculum to look in 2012 and how it plans to prioritize its work in this intervening time. Time-release funding

will be provided for all Units in this first year. Guidelines and seminars will be provided both across the University and within Units.

In the subsequent years, funding will be negotiated with each Unit, and will be available on an annual basis. Funding for Year 3 (and subsequent years) of the plan will be conditional on brief reporting on the progress to date. The role of central coordination is vital in maintaining the momentum of the process.

It may be that some Units require longer for the refinement of their roadmaps. Such shifts in level of activity between Units should allow reasonable time-release funding for each Unit.

The work undertaken by General Education will be supported in the three years 2009–2012 by three Fulbright scholars who will work at CUHK under the auspices of the Fullbright Hong Kong General Education Program, supported by a generous donation. Conversations about the development of a set of goals for this initiative have already taken place and have a clear OBA orientation.

As with the pilot phase 3 project, the role of central coordination will be to provide support through consultations; a website; events to report, discuss and showcase the experience; and/or a collection of papers about the experience. Further, an ongoing analysis of the initiatives in all the Units will strengthen CUHK's awareness of its strengths and challenges in this area, and will provide the data on which regular reporting can be made to the UGC.

It should be noted that CUHK does not intend to rely heavily on external consultants. The University has chosen to establish a strong academic teaching and learning unit, CLEAR. Members of CLEAR work closely with the senior academics who are members of the SCTL and, indeed, with all department chairs and programme directors. The University believes that this is a more effective strategy for developing sustained expertise in teaching and learning across the University. Where consultants are considered useful, the funding will be made available by the University.

Proposed nature of periodic reporting on the implementation of an OBA

Table 1 provides an overview of the implementation of OBA at CUHK through a series of progressive projects framed around clearly prioritized strategies. The Table also indicates how the Units might report internally and how progress might be reported to the UGC and shared with sister institutions.

Table 1: Activity and proposed reporting plan

Year	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	
	Pilot TDGs						
	Time-release funding for OBA work in each Unit – seven faculties, School of Law and General Education						
Activity		Each Unit develops an OBA roadmap. Most Units will complete this during the year. For many Units, this will dovetail with their programme review cycle. Students are integral to this process.	Unit works on priority strategy No. 1. The period may be 1 or 2 years for each priority. Reporting on each priority negotiated with Unit ¹				
				Unit works on priority strategy No. 2.			
					Unit works on priority strategy No. 3.		
						Unit works on priority strategy No. 4. <i>Etc.</i>	
Reporting internally from each Unit			Pilot TDG	Roadmap	Negotiated brief priority strategy report		
					Internal CUHK event	Consolidated report on all work	
Suggested reporting to the UGC			Final TDG report (2005-08) due at the end of 2008 ²	Roadmap report ³		Hosting an event for all HK institutions	Final report on CUHK's position with respect to implementation of an OBA

¹ Examples might be policy documents, evaluation reports of trials with students of certain teaching and learning strategies, online resources with reports of evaluation evidence, reflective portfolios on mentoring schemes.

² This will include reports on the efficacy of the pilot TDGs as an OBA strategy.

³ Analysis of scope and diversity of roadmaps; cross-Unit collaborations; discussion of implications

Appendix 1. Central curriculum focus of the CUHK TDG projects in the 2005–2008 triennium

Curriculum elements for planning and review within programmes					Across the University
Learning outcomes	Content	Learning activities	Assessment	Evaluation	
<i>First set of TDGs granted in 2005 – experience with enhancements to teaching and learning</i>					
	Simulations for acute medicine		Diagnostic mathematics testing in engineering		Modules for professional development of teachers
	Two approaches to case-based learning in nursing		Extended matching questions (medicine)		An eLearning Service across CUHK
	Discovery-oriented organic chemistry laboratory experiments.		Engaging science students in assessment		Outcomes-based approaches at course level
	Case-based teaching and learning on Chinese society				
	Games in Law				
	Establishing and trialing a set of case-based eLearning resources in Chinese Medicine education				
	Survey research platform	Teaching and learning designs in Mathematics			Total of 14 projects
<i>Second set of TDGs granted in 2006 – stronger focus on an outcomes-based approach</i>					
Self-reflection in clinical nursing practice courses			Case-based assessment in medicine	Self-reflection on the new Law programme	Use of eBooks at CUHK
Research-based and data-driven approach to student-teacher development					Innovative eLearning strategies
Universities–schools partnership in architecture					
<i>Science learning outcome statements & measurement instruments</i>	VR in anatomy & surgery			<i>Science learning outcome statements & measurement instruments</i>	
Professional learning outcomes in engineering	eLearning objects for English language				
Student learning outcomes in medicine	Virtual patient environment in medicine				Total of 13 projects

<i>Third set of TDGs granted in 2006 – a continued strong focus on an outcomes-based approach</i>					
Learning outcomes	Content	Learning activities	Assessment	Evaluation	
	OBA in Teacher Education				
<i>General Education</i>				<i>General Education</i>	
<i>Skills-related outcomes in Law</i>				<i>Skills-related outcomes in Law</i>	
	Illness scripts for developing clinical reasoning				
<i>Literacies in the humanities</i>			<i>Literacies in the humanities</i>		
<i>Sociology curriculum</i>			<i>Sociology curriculum</i>	<i>Sociology curriculum</i>	
	Support for IELTS				
	Case-based Centre in Business				
	English pronunciation				Total of 9 projects
					Total of 36 projects