Building Academic Cultures of Evidence: A Perspective on Learning Outcomes in Higher Education **by Dr Peter Ewell**

My intent this morning is to open the Symposium by presenting a broad overview of concepts associated with outcomes-based approaches and their principal applications in higher education settings. The use of outcomes-based approaches is now worldwide and their salience is growing at both the institutional and national levels in designing curriculum and teaching approaches, and in helping to determine their effectiveness.

The notion of "student learning outcomes," of course, has always been at the heart of university teaching and learning. But it is only comparatively recently that extensive and visible attention has been paid to identifying in *operational* terms what students at various stages of their educational careers should know and be able to do. Although progenitors go back to the turn of the last century, the conversation about outcomes and assessment in higher education began in earnest about twenty-five years ago in the U.S., about fifteen years ago in Australasia, and somewhat more recently in Europe with the emergence of the Bologna process. This has led to two important trends. First, evidence of the attainment of important learning outcomes—increasingly aligned to global or cross-national standards—is becoming a central element of national accreditation or quality assurance mechanisms. Equally important, an institution's capacity to harness evidence about student learning outcomes that go beyond individual classrooms is critical to self-improvement and curricular alignment. This is what is meant by an "academic culture of evidence" as referenced by my title. Universities and university systems worldwide are reaching the conclusion that this kind of intentionality about student learning is increasingly necessary in today's world.

Because this is the kickoff session for the Symposium, I want to begin with a few general points about learning outcomes terminology and applications so that we are speaking the same language. I would then like to talk a bit about some of the challenges involved in creating "cultures of evidence" based on notions of learning outcomes, and how institutions and national systems have tried to meet these challenges.

Cultures of Evidence. Given this plan, it seems fitting to begin by looking quickly at the core concept of a "culture of evidence." What does creating one require? My answer is based on the conviction that it requires more

than just measuring things. In addition, it demands a particular *attitude* toward academic decision-making. In my view, six attributes are required, three about evidence and three about acting on knowledge:

- Shared recognition that many (but not all) things are knowable. Above all, building a culture of evidence requires respect for the facts. Academic cultures, though they are centered on verifiable knowledge, are to a remarkable extent based on anecdote. Building a culture of evidence thus first demands recognizing empirical questions about learning when they come up, and determining if and where evidence is available to address them.

- A comprehensive framework for thinking about learning outcomes. This is enacted most frequently in a list of learning objectives applied at the course, program, or institutional level framed as statements of graduate abilities—what graduates or completers should be expected to know and do in each subject area.

- An accessible store of information about student learning and how it was fostered through the institution's teaching and learning processes. This collective knowledge about learning is the result of student assessment at all levels, assembled in a manner that academic leaders and teaching staff can access it to help improve what they do.

- An attitude toward problem-solving that minimizes "finger-pointing" at institutions and individuals. A great and justifiable fear of teaching staff and institutional leaders under an outcomes-based regime is that evidence of less-than-optimal achievement will be used to punish them. Instead, it must be used to identify and fix the underlying problem.

- Clear follow-through on decisions made and the evidence used to make them. Evidence is not credible if it is not used, and transparent decision-making requires all involved to know and discuss the relevant evidence. In a culture of evidence, this is the *behavioral* counterpart to respecting the facts.

- Willingness to scrap things when they don't work. This is probably the hardest attribute of evidential culture for universities to adopt

because so much of what we do is embedded in habit and tradition. To build an intentional culture centered on improving teaching and learning, we need to get beyond this.

These six attributes are easy to articulate but hard to enact. They require a good deal of discussion among academic leaders and teaching staff at all levels, and they take time to develop. But experience suggests that it is time well spent.

Concepts and Language. Understanding and working with outcomes-based approaches requires a common language. One way to make sense of this topic conceptually is to think systematically about each component of the core concern "student learning outcomes." Doing so yields a number of important distinctions:

- "Outcomes" vs. "Outputs." Numbers of graduates, numbers of teaching hours generated by a faculty, or types of service or research products are clearly results of what an institution of higher education does. But they are more commonly defined as *outputs* of higher education. Other dimensions of institutional or program performance like efficiency or productivity are equally the results of what an institution does, and assessing them may be important for some evaluative purpose. But they are not the same thing as outputs. For purposes of this discussion, therefore, an "outcome" can be most broadly defined as something that happens to an individual student (hopefully for the better) as a result of her or his attendance at an institution of higher education and/or participation in a particular course of study.

- "Learning" as a Special Kind of Outcome. Similarly, relevant and valuable outcomes are not confined to learning because students can benefit from their engagement in postsecondary study in many other ways. Additional *behavioral outcomes* or *experiences* that may result include employment and increased career mobility, enhanced incomes and lifestyles, the opportunity to enroll for more advanced educational studies, or simply a more fulfilled and reflective life. Student *satisfaction* with the university experience should also not be confused with learning. Student learning outcomes, then, may be properly defined by this tradition in terms of the particular *levels of knowledge, skills, and abilities* that a student has attained at the end

(or as a result) of her or his engagement in a particular set of teaching/learning experiences.

- Learning as "Attainment." Defined in terms of the levels of *attainment* achieved, however, requires learning outcomes to be described in very specific terms. This requires institutions or programs to define *learning goals* or *learning objectives* as guides for instruction and as benchmarks for judging individual student attainment. Expressed in terms of *competencies* or *qualifications*, moreover, such goals describe not only what is to be learned but also the specific levels of performance that students are expected to demonstrate.

- "Learning" as Development. In many cases, institutions and programs describe student learning not just in terms of attainment, but in terms of *growth* or *enhancement*. *Value added*, "*before-after*," and *net effects* are terms that are frequently used to describe such longitudinal ways of looking at development.

- Assessment and Outcomes. *Assessment* refers primarily to the methods that an institution or program employs to gather evidence of student learning and/or to certify attainment. Assessment may yield aggregated information about an institution or program or information about the performance of individual students. And it may be used in a "formative" manner to improve performance, or in a "summative" fashion to determine a current level of performance.

- Evidence and Outcomes. Evidence can embrace the results of both quantitative and qualitative approaches to gathering information. The term evidence also suggests both the context of "making and supporting a case" and the need to engage in consistent investigations that use multiple sources of information in a mutually reinforcing fashion. But to count as evidence of student learning outcomes, the information collected and presented must go beyond self-reports provided by students and graduates through such means as surveys and interviews or employment placements to include the direct examination of student work or performance.

Advantages and Drawbacks. It is also important to be aware of the claimed advantages and perceived drawbacks of adopting an outcomes-

based approach. Among the most general claimed benefits are the following:

- Clarity. Using the language of learning outcomes can help focus sharper attention on the objectives of the teaching-learning process. The clarity of a learning outcomes approach also has considerable appeal to external stakeholders like policymakers and employers who, by nature, are inclined to judge the effectiveness of an enterprise in terms of its results.

- Flexibility. Learning outcomes specify the intended ends of instruction but leave open the means to attain these ends. This accords considerable flexibility for instructional provision. Very different instructional designs and learning environments can be configured to foster the same learning outcomes. Very different kinds of students can also be accommodated through an outcomes-based approach to suit the individual needs of learners.

- Comparison. Credible learning outcomes can establish comparable standards through which to benchmark and evaluate the performances of institutions, programs, courses, or individual students. Such comparisons can be applied to support summative assessments of program performance for accountability purposes, or to chart progress.

- Portability. Credible learning outcomes can similarly form the basis for a system of credentialing student learning that can transcend established programmatic, institutional, and national boundaries. Diplomas or degrees representing the completion of particular courses of study can be mapped to appropriate arrays of competencies at various levels to establish comparability despite differences in nomenclature, program design, or length of study.

Despite these many potential advantages to adopting an outcome-based approach, experience in many settings suggests a number of cautions. Among the most prominent of these drawbacks are the following.

- Definition. All of the advantages noted above are premised on the establishment of meaningful, clear, credible, and assessable

statements of learning outcomes. This is not easy to do for many abilities, and it has proven nearly impossible for some.

- Legitimacy. Just as important as definitions of learning outcomes are accompanying *perceptions* of these definitions—especially on the part of members of an academic community. A first challenge here stems from the skepticism of many academics who believe that learning is not able to be meaningfully captured by simple learning outcomes statements. A second related difficulty is language, because the terms and concepts underlying outcomes based approaches come from business, education, and the social sciences. Together, these perceptions mean that the initial legitimacy that any outcomes based approach will command will vary significantly by discipline.

- Fractionation. By their very nature, outcomes schemes tend to break down holistic conceptions of learning. The level at which learning is assessed may become too narrow, missing the essence of the integrated "ability" that is supposed to unite many discrete skill elements into expert practice. This tendency may also privilege an "additive" over a "developmental" view of the learning process—one that looks at learning largely as a process of incrementing a student's current inventory of knowledge and skills with new elements one at a time, rather than one that emphasizes cognitive reorganization at a higher level.

- Serendipity. Establishing a particular array of learning outcomes, no matter how well crafted, leaves out the unexpected. The approach therefore presumes that all of the valued and important ways that a learner can construct meaning in the context of a particular discipline or ability are known in advance.

These advantages and drawbacks are the main drivers of any initial conversation among academic administrators and teaching staff, so they should be anticipated and addressed specifically.

Applications of Outcomes-Based Approaches. Learning outcomes approaches have been used at many levels, ranging from that of instructional design where the individual student is the object of interest, through institutions and programs where the prominent concerns are evaluation-based improvement and quality assurance. Many of the applications

described can be deployed at multiple levels, but they are discussed under the heading at which they most commonly occur.

Institutional Level. Institution-level applications of student learning outcomes concepts began in U.S. institutions under the auspices of the "assessment movement." Similar efforts have emerged more recently in other English-speaking countries including Australia, growing out of widespread use of Outcomes-Based-Education (OBE) models in secondary schooling.

- Program Evaluation and Improvement. Under this application, teaching staff develop formal statements of student learning outcomes for each degree program and for general attributes and skills assumed to be common across all baccalaureate or associate degrees, then design their own methods for assembling evidence around these local definitions. Types of evidence vary considerably across institutions, but typically include special examinations, student work samples, observed and rated performances and demonstrations, portfolios of student work, and surveys of students, alumni, and employers.

- Competency-Based Instructional Designs. At the other end of the applications spectrum, some institutions and programs incorporate instructional designs that are entirely or partly based on the demonstrated achievement of specified student learning outcomes. Designs of this kind are usually termed "competency-based" or "mastery" programs and are most often encountered in applied fields of study where definitions of competency are clearer and the development of performance assessments more straightforward. This means that students can complete programs at their own pace and, in principle, need not attend classes at all.

- Managing Student Transitions. In some institutions or jurisdictions, student movement into more advanced levels of study requires a direct demonstration of a particular level of mastery through assessed performance. Other applications of outcomes based approaches to student transitions are designed to address the growing phenomenon of student transfer from one institution to another. Under these arrangements, common outcomes are identified for transferable blocks of prior work that are certified by the sending institution using

mutually agreed-upon standards certified by direct assessment or a periodic audit/review process. .

National or State Level. There are many examples of applications of the learning outcomes concept at the national or sector level. Many of these incorporate learning outcomes concepts in broader funding, accountability, or quality assurance processes.

- Institutional or State Performance Indicators. Indicators of student learning outcomes are most frequently deployed as part of the larger accountability framework based on statistical performance indicators. Virtually all of these indicators in the realm of student learning outcomes are derived from standardized examinations—either administered especially for the purpose of grounding overall judgments of quality, or derived from the many licensing examinations administered to govern individual entrance into professional practice.

- Resource Allocation and "Institutional Steering." Information about student learning outcomes is only rarely used by states and nations to inform the process of providing resources to support institutions and programs. But in some jurisdictions, institutional eligibility for the receipt of public funds is made contingent on institutions engaging in the assessment of student learning or on actual performance on assessments.

- Alignment of Standards. Learning outcomes frameworks have become increasingly prominent in national efforts to ensure that the degrees and other credentials granted by different institutions and programs are of comparable quality. Resulting "qualifications frameworks" generalized to all fields of study have emerged in most of the English-speaking world outside the U.S. including England, Scotland, Ireland, Australia, South Africa, Namibia, New Zealand, and Hong Kong. In general, qualifications frameworks comprise a matrix where one axis consists of a set of generic abilities or traits that are expected as a result of postsecondary study while the other axis consists of a hierarchy of levels or standards at which the particular ability or trait is manifest.

- Accreditation. Accreditation has become a world-wide mechanism for certifying the basic acceptability of an institution or program based on self-study and peer review. The role of student learning outcomes has become increasingly prominent in accreditation at both the institutional and programmatic levels, partly through the stimulus provided by national governments. Specialized accrediting organizations such as those in engineering and business are now heavily oriented toward outcomes and are increasingly being applied internationally.

- Quality Reviews (Audit). A parallel method for assuring institutional or program quality evolved in the late 1980s and early 1990s in Europe and Australasia centered on quality process reviews. The two rounds of Teaching and Learning Quality Process Reviews (TLQPR) recently completed by the UGC in Hong Kong were classic examples of this approach, and entailed significant examination of teaching goals and assessment methods.

One way of conceptually summarizing these diverse applications is to consider how outcomes approaches can be used on two dimensions. One axis distinguishes the primary purposes of undertaking an assessment of learning outcomes: its results can be used primarily for improvement ("formative") or for making consequential judgments ("summative'). Another axis distinguishes the unit of analysis about which conclusions will be drawn: for individual learners or for aggregations of individuals like institutions, academic programs, or demographic groups. Each cell of the resulting matrix thus defines a particular type of application. The "summative-individual" cell addresses the certification or ratification of individual student competencies within any instructional setting. The "formative-individual" cell represents similar applications that are designed to provide students with feedback about their learning. The "summative-group" cell embraces applications of assessment results directed at making judgments about institutions and programs. The "formative-group" cell, in contrast, is centered on the use of this information to inform continuous improvement in teaching and learning—the hallmark of an authentic "academic culture of evidence."

Challenges and Stakeholder Reactions. A number of issues can be anticipated in the early stages of implementing any learning outcomes based approach. They include:

- Unclear Motives. Like any innovation, a proposal to adopt an outcomes framework or approach generates uncertainty about consequences. Proponents tend to over-claim the benefits of the approach while potential opponents, lacking much information about it, imagine the worst possible case. Often this is because the agency proposing adoption has not been very clear about why it is doing so and has not delimited the consequences very well.

- Philosophical Objections. The language of learning outcomes is alien to most faculty and is initially associated with "administrative" or "business" settings which may be seen as innately suspicious. Furthermore, many academics will initially take the position that outcomes language narrows and trivializes learning, the results of which are considered "ineffable" (this may be particularly the case for "generic" outcomes like critical thinking, teamwork, or empathy).

- Challenges of Implementation. Actually implementing an outcomes-based approach involves a number of practical challenges, some of which are common to any academic innovation. Building a culture of evidence is no different. In addition to these more general challenges, implementing an outcomes-based approach within this broader culture of evidence must overcome a number of more specific obstacles.

Experience derived from many institutions and jurisdictions across the world has resulted in a rough body of "good practice" designed to address these implementation challenges and thereby further the development of a culture of evidence. Proven strategies for addressing *unclear motives* include:

- Consciously delimit the initiative. One way to mitigate inevitable "worst possible case" perceptions is to establish "boundary conditions" that explicitly govern what will be done. Sometimes this is accomplished by developing a set of formal principles that spell out basic motives and values associated with the effort. Occasionally these include specific statements of what will *not* be done (for example, that learning results will not be used in the evaluation of teaching staff).

- Involve stakeholders early and often. Most efforts of this kind are formally governed by a steering committee or council (at the institution and/or system levels) comprised of senior academics considered "opinion leaders" in their communities. These individuals should be "generalists," not specialists in educational measurement. Frequent public forums or symposia to examine strengths and challenges associated with the approach have also proven effective.

- Take an incremental approach. Adopting a learning outcomes approach is not something that happens all at once for either institutions or systems. Different disciplines and programs are at different stages of readiness for moving in this direction and the process should not be forced. Time is also needed for staff development efforts to be put in place and to have an effect, and for institutions to become accustomed to learning a new language.

- Adopt a consciously experimental approach. This may involve the use of funded pilot programs or other demonstrations involving limited investments and an explicit commitment publicly share results. It may also include a commitment to formally evaluate the effort after a designated period and abide by what the evaluation finds.

- Limit consequences. If the approach involves consequences for individuals, units, or individuals, this means committing to the principal of "hold harmless" during the early part of the implementation period—that is, allowing the approach to unfold under essentially the same conditions of consequentiality as before the innovation.

Proven strategies for addressing *philosophical objections* include:

- Adopt the language and stance of scholarship. All documents and policies associated with implementing a learning outcomes approach need to be couched in the language of teaching and learning, consciously avoiding "business-like" terminology and concepts. This applies particularly to the "grammar" of learning outcomes statements, which should flow naturally and genuinely out of each disciplinary context rather than being governed by a standard format or formula.

- Encourage faculties to reflect on how they are already embodying and assessing "learning outcomes." Everyone who teaches has some notion of what he or she expects students to learn, and teaching staff evaluate student performance according to some criteria all the time. One promising way to proceed is to examine the basis on which student assignments are currently marked and how consistency of standards is maintained.

- Inventory existing "outcomes-like" practices. Many disciplines already employ outcomes-based approaches of one kind or another and many institutional or programmatic documents implicitly contain claims about what students are supposed to learn. Institutions and systems should take stock of these and disseminate them to a) indicate that adopting this approach is not something entirely new and different and b) use these existing opportunities as the basis for further refinements.

- Recognize that some learning results are easier to frame than others. Some kinds of abilities are more amenable to an outcomes approach than others—for example, what constitutes specific professional or disciplinary content knowledge, or written communications skills. These areas where immediate agreement is present should be the starting point for any outcomes approach, leaving until later more complex abilities where agreement is difficult (if not impossible) to achieve.

Proven strategies for *building a culture of evidence* generally include:

- Start small with some "easy wins." Outcomes-based approaches are difficult for people to comprehend in the abstract. It is therefore important to have a complete and functioning example or two present early in the process of implementation so participants can actually see how the approach works. This might be in a limited set of courses or modules, in a single discipline, or in a single institution acting as a demonstration site.

- Emphasize positive and collective incentives. Many teaching staff believe initially that a formal outcomes framework will be used to

"discipline" deviants and sanction low performers. This makes it imperative to emphasize positive incentives—especially in the early stages of an initiative. Incentives, moreover, should reward active and committed participation as well as results achieved.

- Adjust the approach to fit important differences in context. Institutions and programs differ appropriately in their purposes and in the types of students they serve. They also vary in their familiarity with outcomes-based concepts and their amenability to narrowly-specified constructions of mastery. Without sacrificing the power of a common language that an outcomes framework provides, implementation should be flexible enough to accommodate such differences.

- Share approaches across institutions and faculties. In the press to implement outcomes-based approaches, institutions and faculties can tend to work in isolation from one another. It is therefore important to share emerging practices early, in the context of positive incentives. Websites with trial materials, "buddying" departments or programs to share and critique proposed practices, and large-scale retreats or symposia to showcase successes are all useful devices to achieve this.

- Involve "middle managers" and hold them accountable. Deans and heads of department will be the people who will ultimately have to convince faculty that this is a good and workable idea. They should therefore be involved in planning and given a good deal of flexibility in executing these plans. But they must also be held formally accountable for keeping the process moving within their schools and departments.

Proven strategies for addressing key *difficulties in implementing outcomes-based approaches* within a wider culture of evidence include:

- Keep the outcomes framework simple. It is tempting to go on elaborating statements describing abilities to the point that there are simply too many of them to be meaningfully taught or assessed. While there is no magic number governing how many outcomes statements a module, program, or institution-level general education component should have, establishing scores of such statements can be counterproductive because they cannot be managed or communicated.

- Think constantly and explicitly about performance. Outcomes statements are only words. What makes them meaningful as guides to teaching/learning, certification, or evaluation is the student *performance* that convinces stakeholders that the ability is present. This requires multiple opportunities for faculties to think about and articulate the kinds of student work and performance that would provide convincing evidence of mastery.

- Use multiple forms of assessment. Methods of gathering evidence about the attainment of student learning outcomes are far from perfect. As a result, experience suggests triangulation through the use of multiple and mutually reinforcing methods of assessment.

- Articulate assessment as fully as possible into the curriculum and the everyday "rhythms" of teaching and learning. Outcomes frameworks and their associated assessments can easily become "trains on their own track" and fail to engage teaching staff if they have little apparent connection to the curriculum in which faculty do their daily work. Engagement in outcomes approaches tends to be greater when staff design their own methods for gathering evidence and embed them fully in the teaching/learning experiences for which they are responsible.

Permeating all these recommendations is a single theme: outcomes-based approaches should as far as possible be designed to challenge excellence rather than mandate adequacy. Experience has shown that higher education institutions are at their best when they pursue the best. They are at their worst when they are asked to respond to narrowly-specified definitions of performance supplied from outside the academic arena. In challenging institutions to better articulate and maintain a defined set of learning outcomes, governing authorities should be fully aware of both the opportunities and the limits that these conditions imply.

To reinforce this central theme, I would like to conclude with a few reminders about what building an academic culture of evidence is ***not*** about. I consciously choose the negative voice here because it more forcefully illustrates the kinds of mistakes that can unconsciously be made if outcomes-based approaches are taken too literally and are applied to higher education

institutions too rigidly. In short, building an outcomes-based culture of evidence means:

- ***Not*** measuring everything that it is possible to measure. Instead, it means measuring the things that are important—the key student abilities that we want all of the graduates of a given university or program to have mastered.

- ***Not*** just "checking up after the fact." Although outcomes (quite properly) do come at the end, the end-point of a course of study comes too late for us to be able to make changes to improve a given student's performance. Also, we need information about both outcomes *and* teaching/learning processes in order to fix anything that we find is not working well.

- ***Not*** searching for "final" answers. In contrast, the *questions* generated by gathering evidence of student academic achievement using an outcomes approach are frequently the most valuable result of the process. Evidence raises questions for further investigation, which in turn results in a richer body of evidence.

- ***Not*** always being as "precise" as possible. Again, it is all too easy to turn outcomes-based approaches into a narrow measurement exercise which seeks ever greater precision. Of course, we want our evidence to be sound and this is not an admonition for bad data. But what we really need is for the evidence to be as precise as *necessary*, given the question we want to address. The real test of precision is whether the evidence is good enough for us to risk changing what we do.

- ***Not*** ever expecting to be finished. Like the process of scholarship, which it ought to resemble, an outcomes-based culture of evidence is based on continuous inquiry. As a result, it is never really "finished" and if it is working properly, we should not expect it to be.

Outcomes-based approaches are being used ever more frequently in higher education throughout the world because these approaches provide a way to establish aligned standards of achievement consistent with an increasingly globalizing economy and civil society. At the same time, through their incorporation in authentic academic cultures of evidence in individual

university settings, they provide a way to continuously improve our processes of teaching and learning. The real challenge, though, is to implement them properly. My experience suggests that we have enough knowledge from institutions in many countries to do this effectively. But the process takes time, flexibility, and above all, genuine respect for disciplinary and academic values.