# ASSESSMENT FOR INTEGRATING LEARNING

## An interim review of relevant literature in higher education For the Hong Kong Institute of Education

**Dr Gordon Joughin**
**University of Wollongong**

# ASSESSMENT FOR INTEGRATING LEARNING
## An interim review of relevant literature in higher education

## INTRODUCTION

This literature review is designed to draw attention to fields of study that are central to the notion of integrated learning and its assessment. While the notion of 'integrated curriculum' is familiar to educators and teacher educators in relation to the school sector, integrated learning and its assessment are comparatively recent foci of attention in higher education. Consequently, the literature that directly addresses integration is limited, while the literature that addresses related issues may be almost limitless.

The project for which this review is conducted commenced with a focus on assessment, specifically seeking to identify ways of assessing the extent to which students had integrated learning across their modules of study. This was soon seen to be an unnecessarily restrictive perspective, since it led to two fundamental issues which broadened the scope of the project.

Firstly, assessment should not only concern judgements about students' integration of learning, but also actively promote that integration.' Integrative assessment' thus functions as an active element of teaching and learning, with the assessment supporting or promoting what would naturally be termed 'integrative learning'. Integrative assessment and integrative learning need to be considered side-by-side. Successful integrative assessment will be assessment that engages students in integrative learning. Consequently, a significant part of this review presents literature on integrative learning, an understanding of which is essential in informing integrative assessment. On the other hand, the methods of assessment which emerge from a consideration of integrative learning need to be methods that support integrative learning processes. It would be misleading to specify particular assessment methods that will tend to achieve this – this is the task of the educator familiar with a wide range of assessment methods and able to adapt those methods to the demands of integrative learning and assessment. This is a complex, professional task.

At the same time, it must be noted that some forms of assessment are frequently mentioned in the context of integrative learning, viz. practicums (or teaching practice in the context of teacher education), performance assessment, authentic assessment, portfolios (often e-portfolios) and reflective commentary or essays. The concept of 'rich assessment' has also come to the fore, though more often in school rather than higher education contexts. The literature associated with these kinds of assessments is extraordinarily extensive and a review of this seems to be beyond the scope of this particular review.

Secondly, the project turned to the question, What does integration look like? What is this construct we seek to promote and assess? While a partial answer is suggested in terms of broad learning outcomes such as communicative abilities or social responsibility in the

context of specific modules or collections of modules, a more compelling answer seems to lie in the world of practice – the world to which graduates are moving and the activities, ways of acting, thinking and being they will need to engage with as teachers. If 'practice' provides a basis for consideration of integration, recent work on how practice can be understood as a unitary whole provides insights into holistic understandings of learning outcomes and assessment.

## INTEGRATIVE LEARNING

The 'Integrative Learning: Opportunities to Connect' project sponsored jointly by the Association of American Colleges and Universities (AAC&U) and The Carnegie Foundation for the Advancement of Teaching has generated a series of papers which outline the nature of integrative learning and its implications. An overview of these papers may provide useful insights into how integrative assessment might be best understood in the context of the HKIEd project.

### Integrative learning: Mapping the terrain

The lead paper, titled *Integrative Learning: Mapping the Terrain* (Huber & Hutchings, 2004)[1] was written to provide a conceptual foundation for the project. The opening paragraph not only sets the scene for the American project but highlights the very issue behind the Institute's project:

> One of the greatest challenges in higher education is to foster students' abilities to integrate their learning across contexts and over time. Learning that helps to develop integrative capacities is important because it builds habits of mind that prepare students to make informed judgments in the conduct of personal, professional, and civic life; such learning is, we believe, at the very heart of liberal education. (p1)

This challenge is extended later in the paper:

> Fostering students' ability to integrate learning-across courses, over time, and between campus and community life-is one of the most important goals and challenges of higher education. The undergraduate experience can be a fragmented landscape of general education courses, preparation for the major, cocurricular activities, and the 'real world' beyond the campus. But an emphasis on integrative learning can help undergraduates put the pieces together and develop habits of mind that prepare them to make informed

[1]This article can be accessed online at http://www.carnegiefoundation.org/programs/index.asp?key=24)

> judgments in the conduct of personal, professional, and civic life. (p.13)

The paper asserts the need to integrate knowledge with the skills and dispositions that will allow graduates to operate effectively in the workplace, though this is far from a simple instrumental approach to learning. Rather, the authors see the notion of 'vocation' as providing the theme that links the student's various experiences as they move forward towards the world of practice. 'vocation' as an integrating theme – linking knowledge with skills and dispositions required in the workplace. "Several core insights lie at the heart of this conviction. Intentional learners have a sense of purpose that serves as some sort of 'through line', as playwrights might call it, connecting the sometimes far-flung and fragmentary learning experiences they encounter. They approach learning with high levels of self-awareness, understanding their own processes and goals as learners and making choices that promote connections and depth of understanding" (p.p. 5-6).

*Student agency* is at the heart of integration. The student is seen as the key agent of integration, with the authors arguing that "students today would benefit from taking a more intentional, deliberative, and reflexive stance towards vocation, which requires integrative learning during and beyond their college years, as well as toward other parts of their lives" (p. 3). 'Intentional learning' is in fact a cornerstone of integrative learning, with students consciously coming to accept increasing responsibility for their learning as they develop their awareness of their own learning processes. Self-directed learning, metacognition and reflection are core concepts here, with the authors arguing for more research into them. They also raise the question of how students develop the capacity for making connections, and how this capacity may be developmental, noting the work of writers such as Perry (1970) with his stages of intellectual development.

*Intentional teaching*. It could be tempting to see students as exclusively responsible for integrating learning, and this is probably a traditional view in contexts where teaching and course structures are essentially 'disintegrating'. The authors clearly reject this view and posit 'intentional teaching', paralleling 'intentional learning', as a focused, scholarly approach whereby teachers explore how their students make connections while they themselves develop capstone modules, 'service' or community based learning opportunities, and reflective processes. The development of 'learning communities', scaffolding that applies across courses, such as the use of portfolios, and learning outcomes that cut across modules are also aspects of intentional teaching in support if integration.

*Forms of integrative learning*. Integrative learning comes in many varieties: connecting skills and knowledge from multiple sources and experiences; applying theory to practice in various settings; utilizing diverse and even contradictory points of view; and, understanding issues and positions contextually. Significant knowledge within individual disciplines serves as the foundation, but integrative learning goes beyond academic boundaries. Indeed, integrative experiences often occur as learners address real-world problems, unscripted and sufficiently broad to require multiple areas of knowledge and

multiple modes of inquiry, offering multiple solutions and benefiting from multiple perspectives."

*Assessing integrative learning*. Given the centrality of assessment to learning, the authors' limited consideration of assessment is somewhat disappointing, though it does perhaps indicate that this is an area in which little work has been done. They note that "... the challenges of assessing integrative learning run deep and will not be easily overcome. They are both technical and political, both theoretical and practical" (p.11). In terms of method, they simply note the importance of self-assessment and the use of portfolios and capstone experiences. Perhaps reinforcing the limited literature in this area, they also underline the importance of educators working together to build knowledge of integrative learning and how it is fostered and assessed.

## 'Opportunities to connect': The *Peer Review* papers

With *Integrative Learning: Mapping the Terrain* as its starting point, the Integrative Learning project has spawned several other papers, published in a special edition of *Peer Review* (Summer, 2005).

*Integrative learning for liberal education* (Huber, Hutchings & Gale) introduces the collection of papers. They argue for integrative learning as preparation for both the interdisciplinary challenges that will be faced in the workplace, and for civic life, since citizens of the world must be "aware of complex interdependencies and able to synthesize information from a wide array of sources, learn from experience, and make connections between theory and practice" (p. 2). They cite a number of examples of integrated learning in action: courses requiring students to take different perspectives on important issues; capstone projects that draw on learning from previous courses; experiences that combine academic and community-based work; and reflective systems such as portfolios. However, they note that these can be isolated experiences and highlight the need for integrative learning to be "a regular part of academic life" (p. 3).

*Integrative learning nationwide: Emerging themes and practices* (DeZure, Babb & Waldman) is an interesting summary of project proposals from 139 universities. Since the proposal required each university to specify its current accomplishments in integrative programming, to propose a project, and to nominate the questions of concern that the project would address, this paper gives a unique overview of integrated learning based on a relatively large sample of 139 universities for whom this was already a high priority. The foci of the proposed projects gives some insight into how integrative learning was perceived, and what aspects of integrative learning were seen to be either problematic or to be fertile grounds for growth. The foci of the139 proposals, many of which had multiple foci, were as follows:

- assessment (70%)
- staff development (63%)
- curriculum development (37%)
- capstones (30%)

- first-year experiences (30%)
- self-assessment and portfolios (29%)
- civic engagement (18%)
- learning communities (16%).

The assessment foci included measuring student learning as well as programme outcomes, rubrics, and portfolios, with an emphasis on e-portfolios.

The authors also note four emerging themes from the proposals:

- The institutions involved were all already engaged in innovation and reform of their undergraduate programmes, with many seeking to document student learning outcomes in particular.
- With a multiplicity of rich student learning experiences already in place, the institutions were seeking to provide much greater coherence to the student experience.
- While noting that adding a capstone course or an e-portfolio can simply add another requirement without leading to integration, such innovations can also have an integrating effect if they are accompanied by or act as a trigger for significant change in other parts of the programme curricula.
- A compelling need for staff development was noted, highlighting the need for staff to develop new ways of thinking.

Finally, the proposal process identified common questions which applicants sought to address, with many posing a series of fundamental questions: "What is integrative learning? How do you teach for it? How do you assess it? How do you prepare faculty to teach and assess it?" (p. 26).

*Making connections: Integrated learning, integrated lives* (Arcario, Eynon, & Clark) reports on a first year initiative with three elements: (i) E-portfolios provided students with a new way to collect their work across subjects, reflect on it, and share it with fellow students. Reflective essays and the e-portfolio seek to help students integrate experiences in the context of personal, career and educational goals, so that integration is concerned with both integrated learning and more integrated lives. (ii) Curriculum and learning support are integrated through 'first year academies' designed as learning communities. (iii) Each student participates in a weekly 'studio hour' in which they work on their portfolio as a means of showcasing their work in all of their classes.

*Integrative learning, E-portfolios, and the transfer student* (Flower & Rhodes) presents a short case study of a university which has developed integration foci in its first and final year of its four-year programs. The first year integrative mechanism is an e-portfolio which provides a framework for integration and reflection, while the fourth year mechanism is a capstone project.

In *Integrative learning and interdisciplinary studies*, Klein traces the notion of integration from the middle of the nineteenth century to the present day, noting a focus on personal integration based on students' concerns in the 1930s, problem-centred curricula

in the 1940s, and a move from teaching methods to integrative learning processes in the 1960s. In the present Hong Kong context, it is interesting to note the argument of outcomes-based advocates that sophisticated levels of learning could not be achieved through studying subjects separately. This leads to the concept of 'integrative interdisciplinary pedagogies'. Whereas interdisciplinary learning is based solely on disciplinary perspectives, integrative learning draws additionally on life perspectives and cultural and sub-cultural factors. Klein suggests a number of teaching and learning strategies associated with this approach:

- team teaching and planning
- clustered courses and learning communities
- interdisciplinary core seminars
- thematic or problem foci in courses
- proactive attention to integration, including process models
- collaborative learning in projects and problem-based case studies
- integrative learning portfolios.

Klein argues that the intersection of the concepts of integrative learning and interdisciplinarity leads to the ability to:

- "ask meaningful questions about complex issues and problems" (p. 9)
- locate multiple sources of knowledge and perspectives
- create integrative frameworks and holistic understandings.

While not relating this approach to notions of practice, Klein does point out the importance of contextuality, including the fact that integrative interdisciplinary thinking is required for solving problems in a number of contexts beyond university.

*Integrative learning and assessment* (Miller) includes a number of assessment practices associated with integrative learning. Beginning with the proposition that "if work is assigned to students with integrative outcomes as an expectation, instructors must have thought through what those outcomes will 'look like' in enough detail to be able to separate the high-quality work from the lesser, and to explain their judgments in ways that will help students to improve" (p. 11). Miller notes that the assessment in relation to integration must follow the same expert practice that applies to assessment of other kinds of student achievement. His argument leads us to consider many aspects of integrative assessment, and is worth noting in detail in the following summary statement:

> Evaluation experts pursue reliability in measurement through clear definitions, training of evaluators, and well-designed problems that elicit evidence of learning. Approaching the intentional achievement and assessment of integrative learning (or any other complex learning outcome) requires similar care. Those fostering the learning should agree upon clear definitions and desired outcomes and share their expectations with learners; create engaging authentic assignments ripe with integrative possibilities to gather evidence of student accomplishment; and hone their skills of discrimination and explanation to provide meaningful formative and summative feedback

> to students. As with any complex learning, repeated experiences over time, with expert formative feedback, are likely needed to foster integrative learning. (Teachers will also benefit from repeated experiences in assessment, which over time will improve the validity and reliability of integrative learning assessments.) (p. 11)

Miller notes that integrative learning (and, by implication, its assessment), can involve different kinds of activities, including drawing together knowledge from different disciplines in a learning community; applying theory in clinical and other practice settings; applying multiple perspectives in collaborative capstone projects; applying skills learnt in one context to problems in another; and reflective essays in multiyear portfolios.

Miller notes that since integrative learning can take so many forms, for any institution an essential "first step toward assessment of student outcomes must be to define what a particular campus or program actually expects students to do as integrative learners" (p.12). For example, professional programmes may see integration primarily in terms of 'putting theory into practice'.

**Fostering integrative learning through curriculum, pedagogy and staff development**

A further set of contributions from the 'Integrative Learning: Opportunities to Connect' project are worth noting briefly. A series of short essays was prepared for the project's public report and are available on the project website (http://www.carnegiefoundation.org/elibrary/integrativelearning), including papers on pedagogy, curriculum, staff development and assessment.

- In relation to *pedagogy*, Gale proposes that the 'signature pedagogies of the professions' described by Shulman (200%) may equally well apply to integrative learning. Such pedagogies are pervasive, routine, habitual and deeply engaging. For Gale, they include such methods as the interdisciplinary seminar, problem-based learning, online learning communities, and e-portfolios.

- Huber considers *curriculum* in terms of students' opportunities to connect pieces of learning, and to make connections between their academic, personal and community lives. Some of these opportunities are often field based (eg, practicums, field experience, volunteer work), need to be developmentally sequenced, andmay utilize well known methods such as capstone projects, learning communities, and 'general education' programmes. She notes that the application of skills and abilities that cut across curricula (such as broad-based generic learning outcomes) has particular appeal as an integrating mechanism, while the flexible opportunities for reflection offered by e-portfolios are also particularly useful and increasingly common.

- Hutchings, in considering *staff or faculty development*, notes the importance of workshops and resources being available to staff, but in the context of curriculum design. Thus staffs who are engaged in developing what she terms 'cross-

disciplinary literacies' which elsewhere may be termed 'generic learning outcomes' can use this opportunity to apply these literacies in integrative ways. Similarly, learning about integrative approaches can be well applied to developing learning opportunities at critical points in the curriculum, often in the first and final years of a programme.

## 'PRACTICE' AS INTEGRATION

The starting point for the literature noted above is the typical lack of integration of courses in higher education, reflecting the fact that universities, not least through their departmental structures, deal with knowledge in compartmentalized ways. This creates the need for students to perform acts of integration, and for teachers to work intentionally to create contexts for integration to occur. Assessment in itself may provide this context when it is designed to integrate learning, or it may create imperatives for integrative approaches to learning and teaching.

There is an alternative point of departure that is not 'disintegrated', namely the world of practice. This section of the review draws attention to recent representations of practice as holistic, along with the argument that assessment in higher education should be shaped by this.

Our starting point is found in Boud's depiction of practice as "a holistic conception that integrates what people do, where they do it and with whom. It integrates a multifaceted range of elements into particular functions in which all the elements are needed" (Boud, in press). Boud notes a number of aspects of recent theorizing about practice, leading to five features of practice that need to be considered in assessment:

- In practice, the knowledge and skills that are used depend on the context or setting
- In this context, knowledge and skills are brought together in order to serve a particular purpose. Moreover, context and purpose operate together.
- The practitioner has the disposition to use his or her knowledge and skills for the practice purpose.
- Practice often entails working jointly with others who have different knowledge and skills.
- Practice needs to take account of and involve "those people who are the focus of the practice".

In an earlier essay, Shulman (2005) relates university learning to such practice by noting that novice/student development needs to be in relation to three fundamental dimensions of professional work: thinking, performing and acting with integrity. Boud has extended these dimensions, placing them in context and introducing notions of collaboration and co-creation of practice.

When we turn to look at assessment from the practice perspective, we are interested not so much in assessment which integrates learning than in assessment which is consistent with the integrity or the holistic nature of practice. Such assessment, if undertaken

seriously, will inevitably support integrative practices in learning, as Boud's summary of the implications of a practice perspective of assessment make quite clear. He sets out ten issues for assessment which arise from this perspective:

1. locating assessment tasks in authentic contexts
2. establishing holistic tasks rather than fragmented ones
3. focusing on the processes required for a task rather than the product or outcome per se
4. learning from the tasks, not just demonstrating learning through the task
5. having consciousness of the need for refining the judgements of students, not just the judgement of students by others
6. involving others in assessment activities, away from an exclusive focus on the individual
7. using standards appropriate to the task, not on comparisons with other students
8. moving away from an exclusive emphasis on independent assessment in each course unit towards development of assessment tasks throughout a program and linking activities from different courses
9. acknowledging student agency and initiation rather than have them always responding to the prompts of others
10. building in an awareness of co-production of outcomes with others. (Boud, in press)

Boud cites with approval Schwandt's article "On modeling our understanding of the practice fields' (Schwandt, 2005) and presents Schwandt's views of 'practice' in some detail. These views are central to our understanding of integration. According to Schwandt's '$model_1$', for example, "knowledge is organized in an atomized, sequential and hierarchical manner" (p. 319), and exists independent of practice to which it is then applied. '$Model_2$', on the other hand, sees knowledge quite differently, as embodied, situated, and incorporating "wise judgment", so that learning too is "situated, activist, constructionist" (p. 321). Underpinning Schwandt's work is a concern for "the kinds of inquiry, teaching and learning appropriate to practices", and it is apparent from his work that the highly integrated approaches to learning and assessment advocated by Boud are essential when $model_2$ is accepted.

Boud also points to the work of Schatzki and his associates (Schatzki, Cetina & von Savigny, 2001) who draw together recent perspectives on practice from a wide range of fields including philosophy, psychology, anthropology, cultural studies, history and science. The embodied nature of practice is only one of a number of ideas that are emphasised within this emerging body of thought.

**Elements of integrated practice**

The elements of integrated practice outlined by Boud in the context of the HKIEd project – subject knowledge/skills; profession (peers; standards); community (public,

workplace, clients); learning (continuing learning, meta-learning), and self (management, care of self, development) – are derived in part from the above work of Boud, Schwandt and Schatzki. Further sources for this framework will be discussed with Professor Boud and incorporated in the final report.

## INTEGRATING ASSESSMENTS AT ALVERNO COLLEGE

The HKIEd project already has strong links with Alverno College and project participants will be familiar with the core assessment literature which has emerged from Alverno. Notwithstanding this, the final version of this review will present the key concepts concerning the highly integrated approach to assessment developed at Alverno over the past thirty years, principally as these have been expressed in *Assessment at Alverno College* (Alverno College Faculty, 1979/1985) and *Learning that Lasts: Integrating Learning, Development, and Performance in College and Beyond* (Mentkwski & Associates, 2000).

## REFERENCES

Arcario, P., Enyon, B., & Clark, J. E. (2005). Making connections: Integrated learning, integrated lives. *Peer Review, 7*(4), 15-17.

Bond. (2008?). "Toward a framework for the assessment of integrative learning." Retrieved 14 March 200-8, from http://bondessays.carnegiefoundation.org/?p=14.

Boud, D. (in press). How can practice reshape assessment. In G. Joughin (Ed.) *Assessment, Learning and Judgement*. Springer: London.

DeZure, D., Babb, M., & Waldmann, S. (2005). Integrative learning nationwide: Emerging themes and practices. *Peer Review* 7(4), 24-27.

Faculty, A. C. (1985). *Assessment at Alverno College*. Milwaukee: Alverno College.

Flower, M. J., & Rhodes, T. L. (2005). Integrative learning, e-portfolios, and the transfer student. *Peer Review* 7(4), 21-23..

Gale, R. A. (2006). Fostering integrative learning through pedagogy. Retrieved 14 March 2008, from http://www.carnegiefoundation.org/files/elibrary/integrativelearning/uploads/pedagogy_copy.pdf.

Huber, M. T., Hutchings, P., & Gale, R. (2005). Integrative learning for liberal education. *Peer Review, 7*(4), 4-7.

Huber, M. T., Hutchings, P., Gale, R., Miller, R. Breen, M. (2007). Leading initiatives for

integrating learning. *Liberal Education 93*(2): 6.

Huber, M. T. H., P. (2005). Integrative learning as an intellectual art. *Association of American Colleges and Universities Network Conference on Integrative Learning*. Denver, Colorado.

Huber, M. T. H., P. (2005). *Integrative learning: Mapping the terrain*. Washington: Association of American Colleges and Universities.

Huber, M. T. H., P. (2006). *Fostering integrative learning through the curriculum*. Retrieved 14 March 2008, from http://www.carnegiefoundation.org/files/elibrary/integrativelearning/uploads/curriculum_copy.pdf.

Hutchings, P. (2006). *Fostering integrative learning through faculty development*. Retrieved 14 March 2008, from http://www.carnegiefoundation.org/files/elibrary/integrativelearning/uploads/facultydevelopment_copy.pdf.

Klein, J. T. (2005). "Integrative learning and interdisciplinary studies." *Peer Review 7*(4): 3.

Mentkowski, M. A. (2000). *Learning that Lasts: Integrating learning, development, and performance in college and beyond*. San Francisco: Jossey-Bass.

Miller, R. (2005). Integrative learning and assessment. *Peer Review, 7*(4), 11-14

Miller, R. (2006). *Fostering integrative learning through assessment.* Retrieved 14 March 2008, from http://www.carnegiefoundation.org/files/elibrary/integrativelearning/uploads/assessment_copy1.pdf.

Perry, W. G. (1970). *Forms of intellectual development in the college years.* New York:Henry Holt.

Schatzki, T. R., Cetina, K. K., & von Savigny, E. (Eds.) (2001). *The practice turn in contemporary theory*. London: Routledge.

Shulman, L. S. (2005). Signature pedagogies in the professions. *Daedalus, 134*(3), 52-59.