Australian Council of Deans of Science

QUALITY AND STANDARDS FOR WORK INTEGRATED LEARNING

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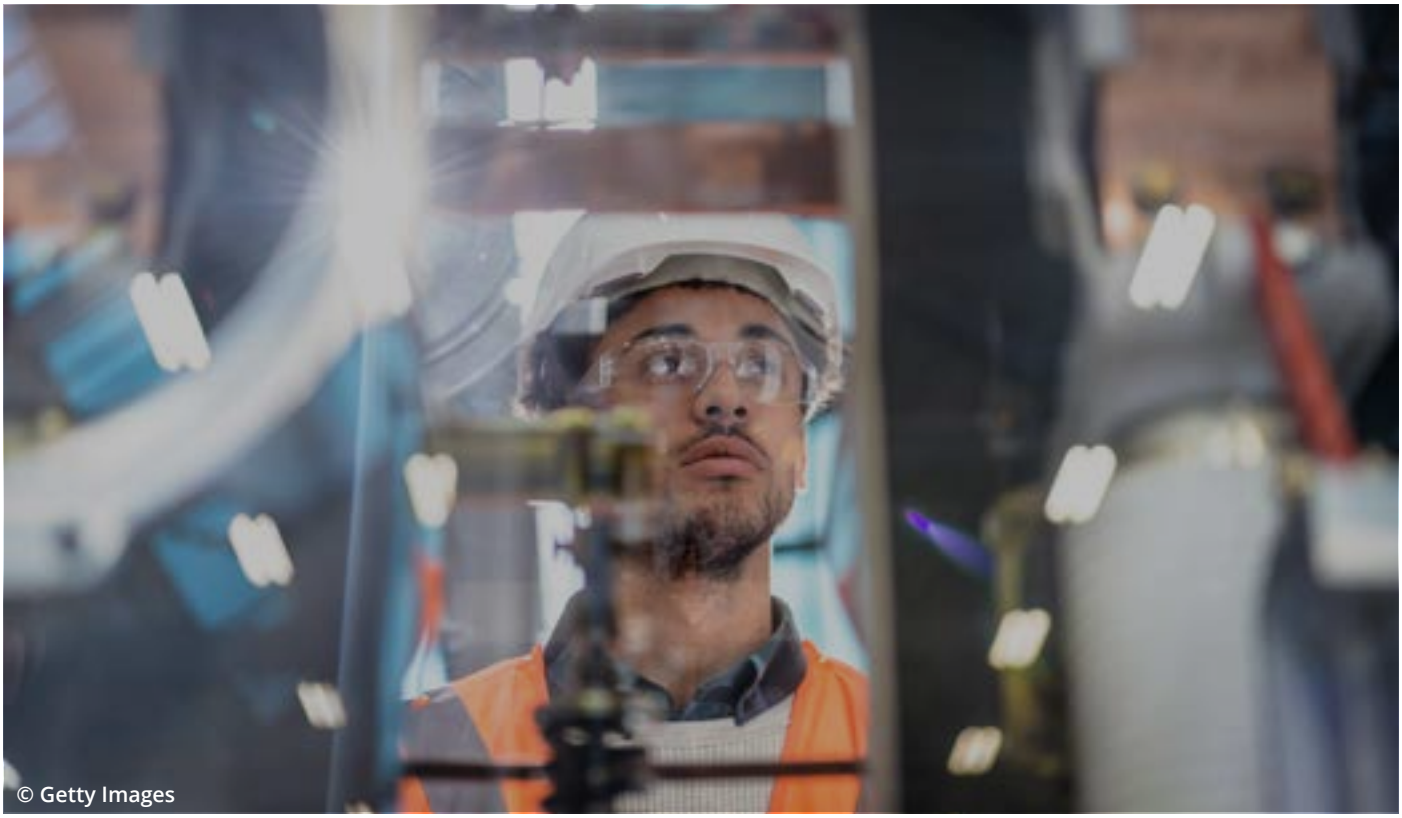

Background and context

Few would disagree with the idea that education in Australia should be of high quality. It is important to students and their families, to universities, to government, to employers and the community. There is much less agreement about how one might define quality.

In recent years there has been a renewed interest in 'understanding, measuring and improving quality in higher education' (Pattison, 2017, p. 102). This is largely driven by the costs of providing higher education and the accountability for public money this inevitably involves, increasing participation rates by a more diverse cohort of students (Pattison, 2017), and by the needs of employers and the community for students with specific skills, values and knowledge.

The desire for assurance of quality stems from many quarters including inter alia: governments who need to make higher education institutions accountable for public money; universities wishing to ensure they are fulfilling their missions; professions needing to set and assure standards for graduate entry to jobs; or university programs and individual subjects seeking to improve their effectiveness. These are all valid and important reasons to collect data of all kinds in order to assess quality of education.

Thus, there are many different facets that can be explored when thinking about and measuring quality. The particular aspects to be measured, as well as the evidence, methods and tools chosen can vary widely and are influenced by the kind of outcomes that are sought, the time and resources that are available, and who is included in the data for example students or other stakeholders.

In Australia, three different federal bodies currently work together and regulate higher education, with the aim of assuring quality across the sector. These are:

Australian Qualification Framework (AQF), which sets out the learning outcomes at each qualification level, and policy requirements etc for all education providers from Certificate 1 to Doctorates

Higher Education Standards Framework (HESF), which sets out minimum standards for all components of higher education

Tertiary Education Quality and Standards Agency (TEQSA), which is the body that regulates and assures the quality of the Higher Education providers.

Compliance with the Australian Qualification Framework and the Higher Education Standards Framework is a requirement for registration as a higher education provider. Details of the history and functions of these agencies are discussed in recent papers by Professor Belinda Probert, *The quality of Australia's higher education system: How it might be defined, improved and assured (2015)*, and Professor Pip Pattison, *Standards and Quality in Australian Higher Education (2017)*.

Evidence for quality indicators is collected through national surveys commissioned by the Australian Government that provide data on student, graduate and employer feedback. In an effort to publicly report on quality across the Australian Higher Education sector, the Federal Government has created a public reporting website *Quality Indicators for Learning and Teaching* (QILT) which collates data from the national surveys.

Data is derived from four different surveys:

- **Student Experience Survey** (SES) – a 'comprehensive survey of current higher education students'
- **Graduate Employment** – which combines data from the Graduate Destinations Survey and the Graduate Outcomes Survey
- **Graduate Satisfaction** – from the Course Experience Questionnaire (both undergraduate and postgraduate)
- **Employer Satisfaction** – linking students experiences and views of direct work supervisors.

Descriptive standards for learning and teaching have also been developed for the Australian context. Discipline-specific Threshold Learning Outcomes have been established through national consensus projects across Australian Universities, including a statement for science, the *Science Threshold Learning Outcomes*. These statements are equivalent to the *Subject Benchmark Statements* of the Quality Assurance Agency in the UK. Many professional bodies have developed accreditation standards that determine whether a program in higher education institution meets the requirements for graduates to be a registered practitioner or a recognized professional in that profession.

Finally, Higher Education providers must also have their own internal systems to measure and assure quality as required by the Higher Education Standards Framework. Quality assurance systems vary between institutions and some include external peer review of assessment to ensure achievement standards are comparable across the sector.

What is 'quality' in Higher Education and how do we recognise it?

Clearly a lot of effort is being expended in Australia and internationally on measuring and reporting on quality. However, a universally agreed definition of quality remains elusive due to the differing interpretations by stakeholders and the fact that it is a multi-dimensional, dynamic concept (Schindler et al, 2015). Schindler et al (2015) go on to suggest that there are four main conceptualisations of standards:

- **purposeful - where the service conforms to a set of standards**
- **exceptional – where services achieve or exceed the highest standard**
- **transformative – where services effect a positive change in students**
- **accountable – where institutions are accountable for optimal use of resources and delivery of services.**

Quality can also be defined by identifying specific indicators for required inputs and outputs (Schindler et al 2015). Inputs are the elements provided by Higher Education institutions and include such things as student support services, adequate resources for learning, competent instructors, and programs that prepare students for employment or citizenship. Outputs may be observed during or after study, including aspects such as student engagement with their studies, high student satisfaction, graduate employment and achievement by students of their intended learning outcomes, although Pattison (2017, p. 103) suggests that this last is often missing from lists of quality indicators.

Many approaches to finding such indicators have been tried globally; some examples are listed below:

1. Benchmarking through discipline-specific descriptors and tools
    - Quality Assurance Agency Subject Benchmark Statements (UK)
    - Learning and Teaching Academic Standards (Australia)

2. Comparison of design and resources for learning and teaching
    - VALUE rubrics (US): consensus student assessment rubrics
    - TELAS (Technology Enhanced Learning Accreditation Scheme) (Australia) rating the quality of online learning resources and design
    - Quality Matters (US) external course and program review for online education

3. Comparison of student work submitted for assessment
    - Achievement Matters (AMA): group moderation of submitted assessments for accounting to calibrate reviewers
    - peer institutional review of student assessment (as reviewed by Bedford et al., (2016))

4. Student feedback and outcome surveys
    - Student Experience Survey, Course Experience Questionnaire Graduate Outcomes Survey (Australia) (QILT website)
    - National Survey of Student Engagement (US)
    - National Student Survey (UK)

In a review of literature on quality in Higher Education, Pattison (2017) found that most commentators agreed that 'at the heart of the concept is the notion of the educational impact of an institution relative to its educational purpose' (p. 103). Finding indicators that robustly measure such impact is difficult as they must address both what the institution and its teachers intend, and what students actually need for their future lives. Indicators might include employment outcomes, short and long-term, as well as broader social impacts such as 'contributions to society' and 'responsible judgement' (Pattison, 2017, p. 103). These outputs are often difficult to measure, for example in maintaining contact with graduates for surveys (Rowe et al., 2018), or may be considered inadequate as they fail to account for the many complexities involved (Rowe et al., 2018). For these reasons many quality frameworks concentrate on inputs to learning (what teachers and institutions do) rather than outputs (what students do).

Probert (2015), however, contends that 'what is most important for quality improvement is that an institution takes data as a starting point for questioning and analysing its own performance and engaging teachers in the process, even if that data is flawed'. Understanding and measuring quality is only one side of the equation; being able to improve quality should be the ultimate aim. Sachs (1994) presents a comprehensive overview of the differences between Quality Assurance and Quality Improvement and points out that the two processes can be sequential or cyclical and used in a complementary way.

Work-Integrated Learning (WIL) quality descriptors

Although there are many attempts to collect data and measure quality for Higher Education, few of the existing large-scale options specifically examine Work-Integrated Learning (WIL). We can gain some insight into effectiveness of the courses and programs through student satisfaction surveys and graduate employment and destination instruments, but these are not granular enough, or timely enough, to understand and measure the quality of WIL programs and courses, especially for improvement purposes. Nonetheless, we can use the existing systems to think about the best ways to approach this task.

There has been some focus on quality and standards for WIL over the past decade or so. Most reports focus on distilling the key aspects, attributes and elements that characterize successful or quality WIL. Others specify quality indicators, also referred to as quality criteria or quality dimensions, and some attempt to set standards for quality practice. Tables 1 and 2 outline selected examples of the major approaches, although there are also many others. The following points describe the key characteristics of these studies and reports.

- **Edwards et al (2015)** is the only study that specifically focuses on WIL in science. Its approach is based on a literature review to 'highlight some core themes relating to good practice in WIL' (p. i) considered in relation to the specific context of STEM in Australia. Aspects covered include; engagement with industry, safety and learning of students, admin and other processes as well as leadership within universities.
- **Orrell (2011)** conducted a study commissioned by the Australian Learning and Teaching Council (ALTC) with the aim of identifying good practice in WIL. It was based on a review of 28 ALTC-funded studies, fellowships and projects and covered aspects of practice at the institutional and educational levels as well as partnerships. Orrell also set out a review framework with domains and dimensions to 'map the WIL landscape' (p. 1).
- **Sachs et al (2016)** conducted a subsequent study commissioned by the Office of Learning and Teaching building from the work of Orrell. The authors discerned *Common Elements of Successful WIL*, drawn from review of literature and case studies of various institutions and individual programs. The elements outlined in this study cover aspects of partnerships, WIL experiences and student learning, and ensuring inclusive approaches.
- **Higgs (2014)** developed an extensive list of standards for what she termed 'Professional and Practice-Based Education'. These standards were based on a review of literature and a benchmarking event at Charles Sturt University by WIL Program Managers. The standards cover all aspects of WIL including what should be learned by students, the actual learning and teaching activities, and supporting infrastructure.

- **Smith et al (2016)** focus exclusively on WIL curriculum, with findings based on a survey of over 3,000 students in 13 universities. This empirical study was based on student self-reporting of their WIL experience and identified six dimensions of a quality WIL program directly linked to the work readiness of students.
- **McRae & Johnston (2016)** proposed a global WIL framework that analyses the different models of WIL, based on the *Comparative Matrix of Co-operative Education* developed in British Columbia. This framework considers aspects such as the WIL experience, curriculum integration, student outcomes and reflection.
- **Stirling et al (2016)** developed a guide for teaching of WIL for the Higher Education Quality Council of Ontario with an extensive list of quality criteria. It covers most of the criteria as other reports listed here but often uses different language.
- **Brightwell (2015)** is an example of the many quality standards that are common in health-related disciplines. It is a holistic, comprehensive approach that covers most aspects of service provision by both universities and placement sites.
- **Shardlow (2015)** produced findings based on a survey by consultants that identifies *Factors that Enable Quality*, and concentrates on clinical placement.

In 2016, the Australian Collaborative Education Network (ACEN) and Universities Australia (UA) partnered with employer and industry groups to develop the National Strategy on Work-Integrated Learning in University Education. This laid out enabling approaches and proposed actions in eight key areas related to WIL. Although not intended as a quality framework, it covers most of the areas that would need to be covered in such a framework.

This snapshot reveals a variety of methods used to ascertain overall quality and standards for WIL in the last decade including recommendations and good practice principles (Edwards, et al 2015; Orrell, 2011; Sachs et al, 2017; IRU, 2008). Taken together, these studies and reports provide clues as to the significant aspects of WIL that need to be considered, including: administration & governance, funding & leadership, partnerships, support systems for staff & students and, not least, questions about effective learning and teaching. It makes a useful start in contemplating what should be included if you were to develop a comprehensive and holistic quality framework.

Table 1a: Selected examples of of key aspects, attributes and elements that characterize successful or quality WIL. Text has been slightly edited from the original for brevity.Please consult the original reports for the full wording.

Edwards et al (2015) Key Aspects of Good WIL	• is clearly linked to theoretical aspects of courses, ideally providing an 'ah-ha' moment to the student when the practical and theoretical merge; • has strong engagement with industry; • has well articulated expectations of both students and industry partners; • has clear induction processes at the beginning and facilitated
Orrell (2011) Essential elements for successful WIL	**Institutional:** • Shared vision of WIL across university • Provision of adequate resources • Recognition of complementary roles of university and workplace • Engaging enabling services **Educational:** • Adequate induction and preparation of students • Structured, critically reflective learning • Element of risk in student learning • Using technology-based tools for alternative or supplementary WIL experiences **Partnerships:** • Ensure supervisors understand student prior learning • Induction and professional development of supervisors • Include all stakeholders in development of WIL • Robust and mature partnerships
Sachs et al (2016) Common Elements of Successful WIL	**Mutual benefit** – all stakeholders gain reciprocal and mutual benefit **Reciprocity and trust** – partnerships developed and sustained on the basis of trust and respect **Authentic** – students are involved in experiences that replicate workplace requirements and expectations **Inclusive** – all students have equal access to full participation **Applied learning** –links campus theoretical learning to workplace requirements and practices **Integration** – activities can be integrated into the curriculum through clearly established objectives and outcomes to ensure consistent application of theory into practical situations in the workplace
Higgs (2015) Standards for Professional and Practice-Based Education)	**Standards for:** *Graduate Attributes* (Examples: professional judgement, communication, work readiness) *WIL Learning and Teaching Activities* (Examples: place in curriculum, program design and evaluation risk management, assessment,) *Learning and Teaching Infrastructure* (Examples: staffing, staff and student support, workplace learning environments

Table 1b: Selected examples of key aspects, attributes and elements that characterize successful or quality WIL. Text has been slightly edited from the original for brevity. Please consult the original reports for the full wording.

Smith et al. (2016) Quality Dimensions of WIL Curriculum	**Authenticity** of the WIL Experience, including appropriate levels of autonomy, responsibility and meaningful consequence **Supervision** from both university and workplace **Preparation** both psychologically and educationally **Debrief** - looking back and making sense of the experience **Activities focussed on Integration** of theory and practice **Assessments focussed on integration** of theory and practice
McRae & Johnston (2016) Key Attributes of WIL	**Experience:** • Direct hands-on experience • Meaningful and substantial • Linked to curriculum **Curriculum Integration:** • Learning outcomes identified • Assessment by institution and workplace • Integration back to curriculum **Student Outcomes:** • Knowledge skills and attributes (employability) • Knowledge of discipline and workplace • Capacity to contribute to workplace **Reflection:** • Formalised, ongoing, integrated
Stirling et al (2016) Quality Criteria	1. **Deliberately structure** the work- integrated learning programme. 2. **Empower the learner with autonomy** in the structured work experience. 3. Provide students with **relevant challenges** in the workplace. 4. Consider the **learning environment**. 5. **Work in partnership** with students and the workplace organization. 6. Ensure **continual assessment of student learning** and **evaluation of** the work- integrated learning **programme**.

Table 1c: Selected examples of key aspects, attributes and elements that characterize successful or quality WIL. Text has been slightly edited from the original for brevity. Please consult the original reports for the full wording.

Brightwell (2015) Quality standards for clinical practica	**Standards for**: *Placement site* examples: trained clinical educators, student support and orientation *University* examples: suitable placements; staff career progression; student support *Relationships between agency and university* Examples: information exchange; critical incident notification; feedback on student performance and issues *Resources* Examples: adequate sites and supervisors available; input from all stakeholders for evaluation of curriculum *Participants* Examples: student orientation; monitoring of student workload, safety and well-being; *Supervision* Examples: training; student feedback; monitoring of students *Evaluation* of programs, placements, effectiveness
Shardlow (2015) Elements of Quality	**Factors enabling Quality**: *A culture for quality* -develops positive relationships, actively supports learning, and rewards best-practice. *Effective supervision* - a good supervisory supervisor development, and appropriate recognition and reward of desirable supervisor behaviours. *Learning opportunities* - that are diverse and appropriate for students, *Effective communication and collaboration* between students, academic institutions, and placement sites to adequately prepare for the placements *Resources and facilities* sufficient to conduct placement activities. (based on Siggins Miller Consultants 2012)

Quality dimensions for WIL curriculum

Whilst administration, governance, resourcing and the development of robust partnerships are extremely important for the smooth operation of WIL, it is essential to remember that WIL is first and foremost a learning activity for students. Curriculum design and teaching practices have a profound influence on WIL outcomes. In perusing the studies and reports listed in Tables 1 and 2, it is obvious that some aspects of WIL curriculum feature frequently. Considering that these are highlighted despite very different methods and approaches to uncovering quality, they clearly play an important role and should be included in any endeavours to define or measure quality and standards. Few of these dimensions have quality indicators and standards already developed. The material in this section seeks to point out some factors that could and should be considered as quality indicators.

These include:

1. **Authenticity of experience** - Sachs et al. (2017); Higgs (2014); Smith et al. (2016); McRae & Johnston (2016); Stirling et al. (2016)
2. **Being embedded in curriculum** – Orrell (2011); Sachs et al. (2017); Higgs (2014); McRea & Johnston (2016); Stirling et al. (2016); Brightwell (2015)
3. **Student Preparation** – Orrell (2011); Smith et al. (2016)
4. **Supporting learning activities** – Edwards et al. (2015); Orrell (2011); Sachs et al. (2017); Higgs (2014); Smith et al, (2016)
5. **Supervision, including feedback** – Smith et al. (2016); Stirling et al. (2016); Brightwell (2015); Shardlow (2015);
6. **Reflection** – Edwards et al. (2015); McRae & Johnston (2016); Stirling et al. (2016)
7. **Debriefing** – Smith et a.l (2016); Orrell (2011); Billett (2011)
8. **Assessment** – Higgs (2014); Smith et al. (2016); McRae & Johnston (2016); Brightwell (2015)
9. **Inclusive approach to WIL** – Orrell (2011); Sachs et al. (2107)

Authenticity of the experience

According to Smith et al. (2016) authenticity refers to the 'degree to which a placement offers to the student the opportunity to do meaningful professional work', and they then go on to suggest that this should be 'with appropriate levels of autonomy and responsibility and which has meaningful consequence' (p. 199). Sachs et al (2017) suggest that the experience should 'replicate workplace requirements and expectations' (p. 5) while McRae and Johnston (2016) discuss 'direct hands-on involvement' and 'contributing to the host organization' (p. 342).

For some professions there is a requirement and necessity for the student experience to be at a workplace for the experience to be authentic and to do 'meaningful professional work' (Smith et al., 2016, p. 199). In others, however, this may not be as necessary. With the nature of work and workplaces constantly changing it is still possible for some meaningful work to be done 'off-site'. Student projects, for example, that are hands-on and devised by and done for a client, with supervision or mentoring by the client, can still fulfil the definitions and requirements of authenticity, albeit not in the 'full immersion' sense (Sachs et al., 2017). Billet (2011) suggests that different approaches bring different benefits, and such approaches may also address the needs of our diverse cohort of students, as well as the needs of workplaces including small and medium enterprises and community groups (Mackaway et al., 2013). The quality of the experience relies on how well the experience can replicate workplace requirements and expectations, while also fostering learning for all students.

Embedded in curriculum

Most research and evaluation studies suggest that having WIL embedded and integrated into curriculum, rather than as a co-curricular or extra-curricular experience has many advantages for the learner.

These advantages Include:

- being intentionally designed and linked to program curriculum (Higgs, 2014; McRae & Johnston, 2016; Stirling et al 2016)
- having learning outcomes aligned with the WIL experience (Sachs et al., 2017; McRae & Johnston, 2016; Smith et al 2016)
- linking classroom learning and theory with practice (Sachs et al., 2017; McRea & Johnston, 2016)
- having a clear emphasis on learning (Stirling et al., 2016).

Some researchers suggest that having several experiences is better than a single experience and that experiences should be carefully sequenced to build on learning (Billett, 2011; Higgs 2014).

Student preparation

One curriculum dimension that can be directly linked to student-work readiness is student preparation (Smith et al., 2016). This includes preparing the student for learning in a very different environment and to face the new challenges of the 'job'. Billett (2011, p. 25; p. 43) outlines several elements that should occur before the practice-based experience:

- orientation to the workplace and its requirements
- developing student capacity for their practice-based experience
- clarifying student expectations about support available and their own responsibilities
- informing students of roles and expectations of all parties
- preparing students for learning
- preparing students for an 'contestations' that may arise.

Some WIL experiences can bring significant personal challenges for students, for example, experiencing confronting situations with clients and work colleagues (Billett, 2011). Adequate preparation (as well as support during the placement and afterwards) is an important part of the university's duty of care (Smith et al., 2016).

Supporting learning activities during and after the WIL experience

Although models of WIL vary, research consistently shows that activities designed to support learning before, during and after WIL experiences confer significant benefits to students. These should include 'structured, critically reflective self and peer learning processes' (Orrell, 2011, p. 3) and 'activities to ensure consistent application of theory into practical situations' (Sachs et al., 2017, p. 5) or 'learning activities that integrate theory and practice' (Smith et al., 2016, p. 198).

Billet (2011) stresses the importance of providing supporting pedagogic activities for effective integration of theory and practice.

Consideration should be given to: sequencing of activities, active student engagement, and effective peer interaction. Activities that are useful after the WIL experience include:

- sharing of student experiences (comparing and contrasting)
- making explicit links between what is learnt in the classroom and what happens in the workplace (and helping students reconcile the two)
- helping students generate critical perspectives on work and learning processes (Billett, 2011, p. 43).

All workplaces and WIL experiences are different, and universities often have little control over what actually occurs. Students may or may not have the understanding and maturity to make complete sense of their own experience, so it is imperative that students are able to share experiences and learn from each other. This should also be mediated by workplace supervisors and by university staff to maximise student learning (Billett, 2011) and reduce student confusion and anxiety.

Carefully designed support activities both during and after the WIL experience should also enable effective monitoring of learning and progress, and, importantly, student wellbeing. This is emphasized in the TEQSA Guidance Note (2017) that specifies the need to 'monitor the wellbeing of students who are engaged in WIL' (p. 5).

Supervision

'Quality supervision and support is central to a positive WIL experience for students' (Ferns et al 2015, p. 171). In many senses this is one of the most difficult aspects of WIL in which to specify 'quality' and 'standards'. In its broadest sense WIL supervision involves four main roles: administration and management, education, support, and gatekeeper (Rowe et al, 2012). These roles can be complex with multiple expectations and, consequently, some lists of WIL quality indicators include support and training for supervisors.

For learning and teaching, supervision is often conceived of as 'oversight' of students or groups of students in a placement by a supervisor, and with the purpose of guiding, providing feedback, and assessing personal, professional and educational development (St Vincent's Hospital Sydney, 2012). Monitoring student performance and progress feature in the deliberations on supervision of Smith et al. (2016) and Brightwell (2015).

Much work has been undertaken in health-related disciplines on supervision of students and this can be mined for information about expectations for quality supervision elsewhere (for example, see the *STAR Clinical Supervision Handbook* from St Vincent's Hospital, Sydney). The STAR program suggests that 'providing constructive feedback and effective debriefs', 'facilitating reflective practice' and 'peer and group mentorship' are important components of supervision (p. 6).

University staff also supervise students and this role is complementary to that of workplace supervisors (Winchester-Seeto et al., 2016). An important consideration in terms of quality is that both supervisors have a clear understanding of the other's roles and responsibilities so that student learning and wellbeing is fully supported and nothing 'falls through the cracks'. Rowe et al. (2012) have development a framework to address this challenge; *Clarifying the role of the host supervisor: an analysis and reflection tool.*

Reflection

Reflection has been viewed as an essential component of experiential learning since Dewey's (1938) first work in this area. Orrell (2011) called for 'structured, critically reflective learning' and Edwards et al. (2015) sees 'facilitated opportunities for reflection on experiences at the end' as a key aspect of good WIL. Harvey et al., (2010) suggest that there are three roles for reflection in cooperative education (and WIL): academic learning, skills development and lifelong learning (p. 144). Ascertaining whether reflective activities are designed to foster learning in these areas (as well as aligning with learning outcomes) would be a useful way of considering the quality of reflection.

Other aspects to consider are:

- the presence of ongoing formative and summative reflection processes (McRae & Johnston (2016) p. 342)
- whether these are designed to facilitate students' understanding of their skills, knowledge and capacity to contribute (McRae & Johnston (2016) p. 342);
- whether these are designed to facilitate integration of learning from workplace and academic program and career transitions to the workplace (McRae & Johnston (2016) p. 342)
- whether the activities encourage independent reflection (Stirling et al., 2016, p.).

Inclusion of reflective activities that are designed to stimulate reflection on some or all of these aspects is important for quality. There are also other considerations, such as the degree of support provided for students to learn this practice – as this is most definitely a skill that can be learnt (Harvey et al, 2010). What is not captured, however, by this focus on inputs is the effectiveness of reflection for learning which is prompting further research.

Debriefing

Smith et al., (2016) point out that debriefing is a significant factor in assisting students to be work-ready and this is echoed in several empirical studies (Winchester-Seeto & Rowe, 2018). The definition of debriefing is still being debated, as is its exact relationship with reflection. In general debriefing is viewed as: occurring after an experience, facilitated via guidance and questioning sometimes with feedback, and is used for sharing, unpacking and making sense of an experience (Winchester-Seeto & Rowe, 2018).

The effective mechanics of debriefing and the best alternative approaches are still largely unknown, although there are clues from literature in medicine and health-based disciplines that may be successfully transplanted into other areas. There appear to be some advantages for group debriefing which could address the ideas presented by Billett (2011) to promote sharing of student experiences enabling students to learn from each other and contextualise their own experience.

Assessment

As noted by many authors (see Tables 1, 2 and 3), assessment is viewed as an important quality dimension of WIL. In the last decade a plethora of papers and reports about WIL assessment have appeared. Assessment of WIL is widely viewed as being particularly difficult due to complexity and holistic nature of the learning, and relationships between achievement and its particular context (Yorke, 2010). Winchester-Seeto et al (2010) note '[t]here are also tensions around finding assessment strategies that are reliable, produce consistent and objective results, that also measure what is truly valued in experience-based education'.

There are two primary areas that need to be considered in determining the quality of assessment for WIL: what should be assessed, and how should it be assessed. Winchester-Seeto et al (2010) identified six key aspects of learning in WIL that, depending on the learning outcomes of the subject, may need to be assessed:

- discipline-specific academic skills and theoretical knowledge
- 'hard' professional skills and knowledge – e.g. technical skills and competencies
- 'soft' professional skills and knowledge – e.g. interpersonal and communication skills
- graduate capabilities/attributes – related to employability, life-long learning and citizenship
- application of theory to practice
- personal development and transformative learning.

Choosing which learning outcomes to assess will depend partly on the purpose of WIL in the study program. While it is easier to assess the technical skills and performance, this leaves the question of whether and how to assess the more difficult outcomes such as interpersonal skills, that are arguably more important to student employability. Considerations of quality should address this challenge and the capability of staff to assess complex outcomes.

Smith (2014) presents a comprehensive overview of questions of validity and reliability that are vitally important in determining the quality of WIL assessment. If assessments are not valid (assessment actually measures what it purports to measure) or reliable (the same result would occur with different assessors or on different occasions) (Smith 2014), then quality cannot be appropriately measured. Smith (2014) goes on to argue that testing the integration of theory and practice is a particularly important aspect of WIL and is often not assessed rigorously. He suggests that students should be asked to make interpretations, predictions and justifications based on integration to fully demonstrate their understanding and presents a possible rubric outlining relevant dimensions and standards.

A different approach is presented by Bosco & Ferns (2014) who developed a matrix to map assessment tasks against their authenticity. Although designed as a tool for engaging staff in decision making, it may also help considerations of the appropriateness of assessment tasks.

Other areas that may need to be considered in thinking about quality in WIL assessment are the role and support of workplace supervisors in assessment and feedback to students, and the reliance on reflection as an assessment tool (Mackaway et al, 2011).

Inclusive practice

Despite the myriad benefits, it is still clear that many students for a diverse range of reasons are unable to access WIL, a point emphasized by both Orrell (2011) and Sachs et al. (2017). In any quality framework, ensuring inclusion of all students who wish to take part is an important dimension.

This problem was tackled by an OLT funded project that developed a series of *Principles, Guidelines and Strategies for Inclusive WIL* to support higher education institutions in making WIL accessible (Winchester-Seeto et al., 2015).

Existing quality frameworks for WIL

Some existing frameworks address quality and standards in WIL or could be adapted to do so. The sample presented below is not a comprehensive list, but it does illustrate different approaches and purposes that may be helpful.

WIL Review Scoping Matrix (Orrell, 2011) presents a guide for a holistic review of WIL. This matrix scopes out the main ***WIL dimensions*** (purposes, curriculum, pedagogy, legalities and ethics, infrastructure, quality assurance, student matters, staff matters) and ***domains*** (leadership & management, education, partnerships, context) (p. 1). At the intersection of the dimensions and domains are potential WIL activities (Appendix A p. 81). These may provide a good starting point for determining quality dimensions and indicators for inputs into WIL.

Evaluative Framework (Smith, 2012) outlines a quantitative evaluation approach based on surveys of student experiences. The Framework is based on six domains or constructs of WIL curriculum: authenticity, alignment of teaching and learning activities with learning objectives, alignment of assessment with learning objectives, integrated learning support, supervisor access, and induction and preparation processes.

Global Standards Framework and Quality Evaluation Model (Khampirat & McRae, 2016) was developed to assist with examining the effectiveness and efficiency of CWIE programs (Cooperative and Work-Integrated Education). The paper describes the process of development of the quality standards framework matrix. This matrix sets out processes, procedures, outcomes and assessment against the higher education institution, employer and student at three different junctures (before, during and after the WIL experience). It also proposes a multi-level measurement model. The paper also shows an example of how the framework in action for the Canadian Cooperative Education Program.

Matrix of purposes and processes (Billett (2011, p. 18) sets out a matrix which focuses on educational purposes versus curriculum and pedagogy, specifically for integrating practice-based experiences. This matrix aims to match the particular educational purpose e.g. learning about the occupation, building occupational expertise etc to the curriculum and teaching practices. Although primarily concerned with curriculum design, it could be adapted to examine quality, especially to test if the curriculum design is fit for purpose.

Work Skill Development Framework (Bandaranaike & Willison, 2014) looks at a very different facet of WIL, that of the actual development of student employability skills, particularly related to the extent of student autonomy in WIL. This matrix facilitates a measure of the level of student competence and can also be used to assess the level of operation of a particular project or placement, and its suitability for students at different levels.

Graduate Employability Indicators (Oliver, 2015) focuses on the perceptions of a range of stakeholders of attainment of graduate capabilities. Surveys are undertaken of graduates of up to five years, employers and course teams, of their perceptions of the importance of 14 capabilities and the extent to which students display these capabilities. A visualization tool allows comparison of the stakeholder data that enables one way of thinking about whether the WIL subjects (and the programs in which they are embedded) are successful at meeting employer requirements.

Quality Enhancement Framework for Outbound Student Mobility (Tan et al. 2015) covers specialist programs where students undertake international fieldwork. It was developed via an expert panel and includes three dimensions of quality: preparation requirements, supervision, and key assessment criteria. Each section has recommendations, guidelines and advice.

Each of these approaches use different instruments and measures and consequently examine different aspects of WIL, but all tap into notions of quality. Although not about WIL, one very comprehensive example of determining quality and standards is the Sessional Staff Standards Framework (Harvey, 2014). This framework was developed over several years and has been comprehensively tested and validated. It lays out principles, criteria, standards and levels of responsibility. It includes an interactive self-assessment tool that also provides a report and action plan. This framework is used for evaluation and benchmarking purposes, operates at different organizational levels (faculty, department, individual), and provides an informative model for quality assurance in other fields of teaching and learning.

Evaluation

Determining the quality of any educational endeavor relies on careful, planned and often ongoing evaluation. Ideally, evaluation strategies should be planned at the same time as the development of a quality frameworks, and this includes evaluation of the framework itself.

'Evaluation is the collection of, analysis and interpretation of information about any aspect of a programme of education or training as part of a recognised process of judging its effectiveness, its efficiency and any other outcomes it may have.' **(Ellington, Percival & Race, 1988)**

In the design of any evaluation process there are several questions that need to be considered, including:

1. What is the purpose of the evaluation? Why is it being done? Who is audience? Is the aim quality assurance and reporting, quality improvement or both?
2. What is the aspect of the activity/resource/project etc to be evaluated? The evaluation might determine if the inputs are appropriate, or if the outcomes match the original purpose or aim (for example, producing employable students, having efficient administrative processes, robust partnerships with industry), or it may examine the student or partner experience
3. At what level will the evaluation take place, or should it address multiple levels?
    - individuals - teachers, students, administrators, workplace supervisors, or workplaces etc
    - subjects
    - programs – efficiency and effectiveness
    - faculties
    - whole of institution
    - cross institutions.
4. Who should be included in data collection? For WIL, a case can usually be made for including a range of stakeholders and, depending on the purpose, perhaps all stakeholders (Smith, 2014)
5. What artefacts or processes will be examined? Options include inputs/processes or outputs (Rowe et al., 2018), or whether design is appropriate for outcomes (Smith, 2014)

Once these parameters have been determined the most appropriate methods and data can be selected. Ensuring the measures are valid and fit-for-purpose is important if the results are to be meaningful, but it is not always simple and straight-forward to undertake the 'best' approach. There are many different evaluation strategies, and each has its advantages and disadvantages. Detailed, longitudinal studies may yield valuable information, but are often resource intensive to run and have logistical and practical challenges. The same can be said for any large-scale approach and it is worth remembering that careful statistical sampling resulting in a smaller study that does not include every member of a stakeholder group can also provide useful information.

Rowe et al. (2018) provide a summary of a range of evaluation studies in WIL and a variety of measurement techniques used in these studies. The summary below provides a list of examples from this paper and some mentioned previously in this review. These are by no means the only strategies that can be used.

Examples of evaluation strategies and sources of information for data collection may include:

- *Surveys* – stakeholder self-reporting, stakeholder perceptions, student experience questionnaires, stakeholder satisfaction
- *Qualitative approaches* - interviews, focus groups, which are 'useful in generating rich insights' (Smith 2014, p. 249)
- *Measurement against agreed standards or principles*
- *Benchmarking* – within faculties, between institutions, across disciplines, cross-institutional

- *Peer review* – e.g. academic staff of each other's teaching or materials, of programs, within institutions or cross institutional
- *External referencing* – usually involves experts from outside an institution undertaking an evaluation
- *Impact* – which may be measured by changes in attitude, learning, career readiness etc (Rowe et al., 2018).

For examples of useful approaches to evaluation studies see: Sturre et al, (2012) who examine the effectiveness of placements; Venville et al. (2018), who use a systematic approach to evaluation of the student experience; and Rowe et al. (2018), who outline a comprehensive, multi-modal set of strategies for a whole of university program.

Smith (2014) exhorts us to see that evaluation 'needs to be multi-dimensional and incorporate feedback of all stakeholders'. WIL is complex and has 'contextual challenges' (Rowe et al. 2018) when it comes to evaluation, especially across a university or program. Designing an effective evaluation is necessary to measure, capture and celebrate the quality of our WIL programs.

Conclusion

Although deliberations on quality and standards can be largely aimed at quality assurance, compliance and reporting, it is equally true that the same processes can also assist with quality improvement (Sachs, 1994). Given that WIL is such an expensive and resource-intensive endeavour, and that evaluation used to determine quality is likewise expensive to undertake, it would be a great pity if such efforts were not also used to ensure the continued enhancement of WIL.

Quality assurance and quality improvement, although important, are not the only outcomes from such efforts. Large-scale data sets that are gathered for these purposes can also be used to uncover new understanding about students and their learning. For example, 'high impact educational practices' were detected in studies based on the US based National Survey of Student Engagement given to thousands of college students over a decade (Kuh, 2007). These high impact practices included service-learning, community-based learning, internships, co-op, field-placements and projects that integrate and apply what they have learnt. Many of these practices fall within Australian definitions of Work-Integrated Learning (WIL), thus reinforcing the fundamental and important role of WIL in student education.

Careful and creative design of evaluation can produce data that has the potential to address many questions in higher education and student learning and teaching.

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