MULTIPLE MEASURES - BACKGROUND NOTES

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These notes offer background reading and information for users of the Multiple Measures online tool and website, www.multiplemeasures.org.au.
For further detail, or with any questions, please contact the authors, listed above.

Q 1+2: STUDENTS

Q1. What level of expertise will students bring to their learning?
(y1 / y2 / y3 / hons / masters)

Q2. What range of expectations will students have of the learning culture? Use the sliders to show the range and style of learning expectations across the cohort.
(Low consensus > High consensus)

The student cohort may include students with different ways of engaging with content. Are students accustomed to receiving knowledge as information from educators, and is that knowledge hierarchical and cumulative (usual in 'hard/abstract' disciplines)? By contrast, are students more likely to engage in independent interpretation and construction of knowledge with tutor support (usual in 'soft/concrete' disciplines)? (Biglan, 1973a, 1973b; Kolb, 1981). This question asks you to consider the range of difference across the cohort.

KEYWORDS: Disciplinary distance, paradigm, hard/soft, abstract/concrete, life/non-life, cross-cultural

Your responses to questions via sliders / checkboxes in the tool will filter MM exemplars. These can match your interests for the benchmarking of your own completed units / subjects and will give you a set of similar comparators to inform this. Finding contrasting examples, by using the questions to filter differently, may offer new insights useful for design and development of new units.

Question 2 in the tool is designed to allow educators to identify both the range and the midpoint of learning approaches within the student cohort along a spectrum. Exemplars were assigned a value based on Kolb's (1981) classification, using the concrete-abstract axis values. This axis overlaps Biglan's (1973a; 1973b) hard-soft continuum and was used because it includes a wider range of disciplines (and the data that Kolb used to create his classification scheme came from a much larger population).

The range and midpoint of values serves to illustrate how different the learning approaches of the students in the cohort may be – MM1, for example, is open to students from the fine arts (strongly concrete) and engineering (strongly abstract), so the range is very wide. MM4 has a very narrow range and sits on the concrete end of the axis because it predominantly targets fine arts students albeit from a range of practice backgrounds. This question challenges users of the tool to consider their own perspective on this range, as they consider useful comparators for benchmarking or development.

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Notes

In questions 1-2 the focus is on students, the levels of expertise they may bring to planned interdisciplinary engagements, and the significance of their disciplinary and cultural backgrounds to the development of new interdisciplinary studies.

One simple means of locating where students currently sit on their learning journeys is by considering their year level. While it has limitations as set out below, we have used year level as a summary measure for the Multiple Measures project. Researchers have linked this to a linear progression from *novice*, to *advanced beginner*, and on to *competent* (Dreyfus & Dreyfus, 2005). A more holistic view of expertise in the creative disciplines, however, embraces personal development dimensions and engagement skills commonly valued in studio-based learning and teaching (de la Harpe & Peterson, 2008).

Students' expertise and maturity are also prominent concerns in inquiry-based approaches to learning (Healey & Jenkins, 2015; Hodge et al., 2008), which complement and inform the design of interdisciplinary engagements. The 'Student as Scholar' model (Hodge et al., 2008), for example, foregrounds 'frame of mind' – motivation, belief in the possibility of original scholarly and creative work, and self-perception in relation to peers – in order to achieve self-authorship of new knowledge. Both 'frame of mind' and 'level of expertise' may impact the level of self-direction that can be expected of students, as discussed in questions 5-6.

The significance of students' disciplines of origin can be productively understood via Biglan's (1973a; 1973b) enduring classification of discipline paradigms along three continuums: **hard/soft**, **pure/applied** and **life/non-life** (see question 2). Across disciplines, the degree of consensus about the theories and methods varies from high to low. Students in the 'low paradigm' arts ('soft-applied'), for example, are more likely to engage in earlier, independent knowledge construction than their peers in 'high paradigm' mathematics and chemistry ('hard-pure') (Robertson & Blackler, 2006).

A complementary view of disciplines and students' associated learning strategies – abstract or concrete – persists from Kolb's (1981) index of academic fields. In this index, mathematics is classified as abstract, and the humanities concrete. The abstract-concrete continuum suggests a need for mediating strategies where students come together to work on interdisciplinary tasks. In contemporary contexts, the relevance of these models is borne out in the distinctive ways of working by students from different disciplines (Bailey, 2010). In many cases today, students will be negotiating both disciplinary and cultural difference in interdisciplinary engagements (Morieson et al., 2012).

This pair of questions considers the **expertise,** viewed holistically, that students bring to an interdisciplinary engagement when selecting exemplars to inform the benchmarking of developing or delivered learning experiences. These questions challenge educators to develop awareness and responses to diverse student backgrounds in terms of **discipline and culture** and to identify learning opportunities and mediating strategies in that context.

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