# The place of higher education institutions in assessing student engagement, success and retention: A maturity model to guide practice

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The perennial issues of student engagement, success and retention in higher education continue to attract attention as the salience of teaching and learning funding and performance measures has increased. This paper addresses the question of the responsibility or place of higher education institutions (HEIs) for initiating, planning, managing and evaluating their student engagement, success and retention programs and strategies. An evaluation of the current situation indicates the need for a sophisticated approach to assessing the ability of HEIs to proactively design programs and practices that enhance student engagement. An approach—the Student Engagement Success and Retention Maturity Model (SESR-MM)—is proposed and its development, current status, and relationship with and possible use in benchmarking are discussed.

**Keywords:** maturity model, student engagement, institutional capability

## Higher education: How is it placed?

Higher education institutions (HEIs) operating in the current Australian socio-political context are under pressure to widen the participation of traditionally under-represented student groups as a consequence of the government response (Australian Government, 2009) to the Bradley Report  (Bradley, Noonan, Nugent, & Scales, 2008). This pressure manifests as indicators of participation and social inclusion which include performance measures linked to funding. Natural and welcome consequences of these developments are increased student diversity and a trend towards Trow's (1974) notion of universal higher education which nevertheless present challenges to institutions seeking to meet the needs of their student population.  The concomitant stress on institutions will be to maintain or increase student engagement, success and retention in the midst of increasing cohort mass and diversity. To address this complexity, institutions, irrespective of whether they aspire to optimize student experience or, more pragmatically, to conform to a new phase of regulation and accreditation, need baseline data that provides some indication of both student experiences and the institutional determinants of and responses to those experiences.

The current situation concerning student experience data is that Australian and New Zealand HEIs have been well served by sector-wide surveys, particularly in recent times by the *Australasian Survey of Student Engagement* [AUSSE] (Australian Council for Educational Research [ACER], n.d.). This has been used annually to collect data since 2007 (see ACER, n.d., for the annual AUSSE reports and information on other sector-wide instruments such as the *Course Experience Questionnaire* and the *First Year Experience Questionnaire*). Recently, the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) committed to introducing a suite of government endorsed surveys covering the student life cycle (DIISRTE, n.d.).

While these instruments provide both a means to measure and opportunities to benchmark *student experiences* and *engagement*, currently there is no comparable comprehensive approach for assessing the *capability* of institutions to design and manage the student experience. What is reported here are the development and current status of such an approach—the Student Engagement, Success and Retention Maturity Model (*SESR-MM*).

## Students and institutions

### Student characteristics: Engagement, success and retention
There is a large body of national and international work reporting the characteristics of engagement, success and retention experiences of students in higher education. Locally, in Australasia, there is a strong and growing research involvement in this field. For example, from Aotearoa (New Zealand), see Zepke and Leach (2005, 2010) and Zepke et al. (2005) and from Australia, see the quinquennial reports on the first year experience out of the Centre for the Study of Higher Education at the University of Melbourne (Centre for the Study of Higher Education [CSHE], 2012). In addition and reflecting the increasing tendency for cross-Tasman collaboration, there are the annual AUSSE reports (ACER, n.d.) and a recent comprehensive review of Australasian literature by Author 2, Author 1, Kift and Creagh (2011).

Beyond Australasia, in the United Kingdom, see, for example, Harvey, Drew, and Smith (2006) and Yorke and Longden (2007, 2008). And finally, in North America, relevant literature can be found at the NACADA clearinghouse (NACADA, 2012) and, for example, in Pascarella and Terenzini (2004) and Ruiz, Sharkness, Kelly, DeAngelo, and Pryor (2010).

Accepting the caveat of cultural idiosyncrasies, the consensus inherent in this work is that student engagement includes both the academic and non-academic activities of the student within the university experience (Krause & Coates, 2008; Tinto, 2010). Further, it is seriously accepted as an important indicator of the quality of higher education (ACER, 2008) and is a key factor in student achievement and retention (Harvey et al., 2006; Krause & Coates, 2008; Tinto, 2010; Upcraft, Gardner, & Barefoot, 2005). However, there is also increasing evidence that factors beyond the control of individual students influence retention and success (Gale, 2009).

As a consequence, the place that HEIs have to occupy is one of providing students with the opportunity to make the most of their higher education experience—that is, to engage them. Trowler (2010) expresses the shared responsibility for engagement as

the interaction between the time, effort and other relevant resources invested by both students and their institutions intended to optimise the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution. (p. 3)

Similarly, for Kuh, engagement is "the time and effort students devote to activities that are empirically linked to desired outcomes of college *and what institutions do to induce students* [italics added] to participate in these activities" (Kuh, 2001, 2003, 2009a, cited in Trowler, p. 7).

HEIs therefore should assume responsibility for providing the necessary "conditions, opportunities and expectations" for engagement to occur (Coates, 2005, p. 26). To achieve this—a challenge as responsibility is often distributed and isolated across functional areas— HEIs need to initiate, plan, manage and evaluate their student engagement, success and retention programs and practices But how best to do this?

### Institutional characteristics: Policies, capability, maturity

For HEIs operating in the current environment, it is reasonable to assume that they are organisations with goals and objectives related to student engagement, success and retention and implement a variety of strategically aligned policies, programs and practices; and that these policies, programs and practices will vary in complexity, quality, explicitness and effectiveness depending on each institution's context and strategic framework; or, to use terms relevant to concepts to be explored here, will vary in *capability* and *maturity.*

The *capability* of a process used by an organisation is an indication of how well it does what it is designed to do; while the collective impact of the capabilities on a given aspect of that organisation is an indication of *maturity* (Rosemann & de Bruin, 2005). An aspect can be "more" or "less" mature (Iversen, Nielsen & Norbjerg, 1999) and by becoming more mature in its processes, an organisation can *improve* or *evolve* its capability. If a *model* is defined as a "theoretical representation that simulates the behaviour or activity of systems, processes or phenomena" (Theoretical model definition, n.d., para 1), then by ordering all of the theoretically possible incremental improvements into a continuum, it is possible to generate a *model* that summarises the maturity of the capabilities for that organization. Integrating the ideas of *capability, maturity* and *model* produces the concept of a *capability maturity model* which, summarising the notions above, represents a continuum of incremental improvements, evolving from a less to a more mature or effective level.

## Some key characteristics of capability maturity models

A history of the development of the maturity model industry is available in Paulk (2009) and Phillips (2008). In order to contextualise the model being discussed here, the *SESR-MM*, it is necessary to précis that history by initially discussing the characteristics of what could be called a *traditional view* of maturity models. Reflecting this view, Becker, Niehaves, Pöppelbuß, and Simons (2010) claim that maturity models are based on the premise that "predictable patterns exist in the evolution of organisations" (p. 2). In an undated document, circa 2010, Pöppelbuß and Röglinger (n.d.), citing Gottschalk (2009) and Kazanjian and Drazin (1989), build on this idea, arguing that, "based on the assumption of predictable patterns, maturity models basically represent theories about how organizational capabilities evolve in a stage-by-stage manner along an anticipated, desired, or logical maturation path" (Section 2.1, para 1). Becker et al. add to this, indicating that "these *distinctive* [italics added]

stages provide a roadmap for improvement to organisations" (p. 2) because later stages are superior to previous stages and are characterised by a distinctive set of descriptors or benchmark variables.

Amalgamating these ideas: A *capability maturity model* consists of a continuum of incremental improvements clustered into a series of stages or *levels* where *process capability*—how *capable* a *process* is of achieving what it is designed to do—can be described *within* each level in terms of key processes and *between* levels as a logical maturational development from one level to the next. The dominant level provides the global indicator of maturity. *Capability maturity model* and *maturity model* are both used in the literature. *Maturity model* and acronym *MM* are used henceforth unless referring to a proper name.

The early models, reflecting this *traditional view*, were associated with the IT industry, particularly software development, and the rigid, hierarchical, sequential nature of the *levels* suited the lock-step approaches to information systems and technology environments. The dominant *level* was used to indicate the current maturity level of the organization. The *Capability Maturity Model (CMM)* (Paulk, 1999) is a classic example of such a model. As the application of models expanded into more flexible organisational environments, the *levels* concept became less viable. Marshall and Mitchell, in developing and implementing their e-Learning Maturity Model (*eMM*) adopted an *evolving view* and replaced *level* with *dimension* (Marshall, 2010). The rationale for the change is provided in Marshall (p. 149) where he makes the important distinction between (i) the rigid, linear and strictly hierarchical nature implied by the *maturity level* concept where maturity is indicated by one dominant level and (ii) the synergistic and holistic nature of the *dimensions* concept where maturity is interpreted as a complex interactive product of all of the dimensions (see Marshall, 2010 for examples).

## The Student Engagement, Success and Retention Maturity Model (*SESR-MM*)

### Overview

HEIs which are responsible for initiating, planning, managing and evaluating their student engagement, success and retention policies, programs and practices, need access to an approach that will assess their capability to do so. The approach would need to include a comprehensive set of information about potential programs and strategies; and some way of estimating how prevalent and accessible those programs and strategies are. The model being reported here is the Student Engagement, Success and Retention Maturity Model (*SESR-MM*). Its genesis lay in the innovative application of maturity model theory and practice to tertiary student engagement behaviour by Nelson (Nelson & Clarke, 2011; Nelson, Kift, Humphreys, & Harper, 2006). Those initial ideas continue to influence the development of the model. The aims of the model are (i) to enable institutions to assess the *capability* of their current student engagement, success and retention (SESR) programs and strategies to influence and respond strategically to evidence of the student experience within the institution; and (ii) to provide institutions with the opportunity to share information about what the *SESR-MM* classifies as *mature* programs and strategies, with a view to improving those programs and practices. In essence, it will indicate the *capability* of HEIs to *manage* and *improve* SESR programs and strategies and, because it identifies strengths and weaknesses, it has the synergistic benefits of maximising effort and deployment of resources to institutional priorities.

**Structural features of the *SESR-MM***
All maturity models have three essential structural features:
- the *focus* indicated by the discipline content;
- the maturity status, indicated by *levels* or *dimensions*; and
- the *quality* of the content (Clarke, Stoodley, & Nelson, 2013).

These features as they exist in the *SESR-MM* are discussed next.

*Content*
The content in the *SESR-MM* is made up of the practices associated with the policies, programs and activities related to SESR, reflecting Trowler's (2010) notion of shared responsibility. The basic units of content are specific *practices* (e.g. *The institution provides financial services*). For convenience and parsimony, other practices about support services can be synthesized into a more general *process* (e.g. Services and resources). This process can then be coalesced with other similar processes (e.g. Information about services) into a broader *category* (e.g. SUPPORTING). It is important to understand that while the practices-processes-categories synthesis is mainly for convenience (Nelson, Clarke & Stoodley, 2013), it does form the foundation for the reporting process. The *practices* are the essential focus of the model as they provide a basis to gather evidence of institutional processes. This evidence, based on the quality of the practices, provides an indication of the maturity of the institutional processes (Clarke et al., 2013). The practices-processes-categories synthesis is essentially a cognitive map of the field or discipline.

As a starting point in model development, an extensive theoretical and empirical literature review was carried out. This served to situate the emerging model into an appropriate theoretical and societal context. Through a combination of (i) the review which led to the development of an *initial model* consisting of over 80 clusters of teaching practices and (ii) the perceptions of 80 stakeholders (academic and professional staff) from four Australian HEIs about the practices deemed to influence SESR, detailed in Nelson et al. (2013) and Clarke et al. (2013), the content of the *SESR-MM* was generated and labelled as an *interim model*. The authors then verified the correspondence between the *interim model* and the complete set of over 1,100 practices gathered from the stakeholders. An iterative process of coding and recoding has generated a *working model* consisting of five categories and 18 processes representing over 1,100 practices. It reflects the current state of the evolution of the model and is summarised in Table 1. A more detailed discussion of the evolution is available in Clarke et al..

*Indicators of maturity status*
Indicators "fall into mainstream management thinking around quality improvement cycles" (S. Marshall, personal communication, 16 November, 2011) and are derived from the Total Quality Management literature (Huggins, 1998). As indicated earlier, these indicators can be classified as *levels* or *dimensions* depending on the organisational environments. The *SESR-MM* has five dimensions compatible with those used in Marshall and Mitchell's *eMM* (Marshall, 2010) and are summarised in Table 2. Maturity is interpreted as a complex interactive product of *all* of the dimensions, what Marshall (2007) calls "holistic capability" (p. 6).

**Table 1: Details of the content of the *SESR-MM* working model**

| CATEGORIES | PROCESSES | PRACTICES in the areas of … |
|---|---|---|
| LEARNING<br><br>*Students are provided with:* | *Assessment* that is designed to be student-centred and relevant | design, feedback, relevance |
| | *Curricula* that are educationally sound | design, enactment |
| | *Teaching practices* that are collaborative, real-world, student-centred and technology-enabled | collaborative, simulation, student-centred, tools/technology |
| | *Pedagogical styles* that are enquiry-based and work integrated | enquiry based learning, in situ work-integrated learning (WIL), mediated WIL |
| SUPPORTING<br><br>*Students are provided with:* | *Information about* programs, courses, milestones and student support services | courses /programs, key milestones, student services |
| | *Services & resources* related to assistance with finances, and personal and academic capabilities | financial, personal, skills |
| | *People rich* access to personal advice, advocacy and peer support | advising, advocacy, peers |
| BELONGING<br><br>*Students are provided with:* | *Interaction* involving personal and engaging communication with staff, involvement with other students, and professional and social connections | communication, organised, professional, social |
| | *Inclusive activities* that are equitable, culturally rich interactions in the university and wider communities | cultural, diversity, extended community, internal community |
| | *Identity development/formation opportunities* in the areas of professional, student and leadership development | apprenticeships, capacity building, celebrating success, cohort |
| INTEGRATING<br><br>*Students are provided with:* | *Academic literacies* that develop peer-to-peer learning and academic skills within the curricula. | peer learning, skills integrated, people integrated |
| | *Personal literacies* that develop personal and professional attributes within the curricula | cohort development, inclusion, personal development, professional development |
| | Experiences arising from *activities* that cross staffing, student lifecycle, functional and student/staff boundaries | academic-professional partnerships, managing transition, proactive outreach to students, shared process / understanding, student group involvement |
| RESOURCING<br><br>*Staff are provided with:* | *Staff development* in student engagement | academic staff development, development by staff of students as paraprofessionals, professional staff development, reward and recognition of teaching excellence, sessional staff development |
| | *Roles & responsibilities* which engender engagement | providing tools and technology, specific roles, workload |
| | *Evidence base* which is collected, analysed and disseminated to influence staff practice | corporate information, research /, innovation, dissemination |
| *Students and staff are provided with:* | *Communication* which is enabled by procedures and social media tools | online or social media, procedures |
| *Students are provided with:* | *Learning environments* where spaces, resources and access enable learning | learning spaces, resources, student spaces, timetables, access |

**Table 2 : Descriptors of dimensions as indicators of maturity**

| DIMENSION | DESCRIPTION |
|---|---|
| *Providing* | The institution provides the process |
| *Planning* | Plans and objectives and guide the process |
| *Institutional framing* | Institutional standards frame the process |
| *Monitoring* | The institution monitors the process |
| *Optimising* | The institution improves the process |

*Assessing quality*

When maturity is considered in terms of synergistic dimensions, some indication of the quality of the practices is required about <u>all</u> five dimensions. Hence, to provide <u>evidence</u> of the quality of a given practice, it has to be interpreted in terms of <u>each</u> dimension—see Table 3 for an example—and an holistic assessment made of those interpretations. The *quality* of the behaviours is assessed by using a four-point *adequacy* scale (Not-, Partially-, Largely- and Fully-adequate).

By way of example, under the SUPPORTING category, in the *Services and resources* process, a description of a practice is

*Financial services are provided, for example scholarships, work, money management*

This description is interpreted through each of the dimensions as a series of items as shown in Table 3.

In the *Services & resources* process, there are other descriptions of practices related to personal and academic capabilities (see Table 1) and each of these is similarly interpreted as a series of items associated with the dimensions. Independent assessors gather the available evidence through document analysis, workshops and interviews and appraise the adequacy of the evidence. The *maturity* of the *Services & resources* process is then assessed based on a holistic interpretation of all of the evidence related to the associated practices.

**Table 3: Assessing the quality of a specific practice**

| DESCRIPTION OF THE PRACTICE | DIMENSION | PRACTICES REPRESENTING THE DESCRIPTION | EVIDENCE IS … | | | |
|---|---|---|---|---|---|---|
| | | | Not adequate | Partially adequate | Largely adequate | Fully adequate |
| *Financial services are provided, for example scholarships, work, money management* | *Providing* | The institution provides financial services to students | | | | |
| | *Planning* | There are plans for financial services to students | | | | |
| | *Institutional framing* | Institutional policies or standards guide the provision of financial services to students | | | | |
| | *Monitoring* | The provision of financial services to students is monitored | | | | |
| | *Optimising* | The provision of  financial services to students is improved | | | | |

Space limitations prevent the provision of fuller details of this assessment process, including an appropriate method of graphical presentation of the outcomes which is currently being developed.

## Discussion: Is there a place for the *SESR-MM*?

The concept of benchmarking provides a vehicle to explore the question: How should data derived from the application of maturity models be best used? Benchmarking is generally recognised as an important quality assurance mechanism in education (Nazarko, Kuzmicz, Szubzda-Prutis, & Urban, 2009 as cited in Tuovinen, 2012) and, although definitional issues are complex (Tuovinen), it is generally accepted that benchmarking is "a systematic process of comparison of current practice … of some aspect of an institution with either other institutions and/or standards" (para 14).

The traditional approach to benchmarking (e.g. McKinnon, Walker & Davis, 1999) presents benchmarking as a set of quantitative indices that provide a mechanism for comparing aspects of HEI operations among institutions. In this form, it is essentially a quality control mechanism, often tied to funding. McKinnon et al. summarise the aims of their instrument thus:

> The fully developed matrix of benchmarks is intended to provide executive staff with comparative data of past successes, the information needed for improvement, and a realistic appreciation of how well the organisation is moving towards its goals. (p. 4)

However, traditional benchmarking has been criticised as having a "one size fits all top–down approach" (Garlick & Pryor, 2004, p. viii) and further that it may
- focus only on areas of strength or weakness relative to other institutions, ignoring the institution-specific needs for improvement;
- isolate institutions from each other; and
- lead to shallow processes, which lack insights gained from/by others and which do not look beyond institutional borders for solutions.

An alternative to the traditional approach to benchmarking has been proposed by Garlick and Pryor (2004) who argue for a benchmarking process that seeks "to promote organisational improvement by focussing on personal processes for staff and stakeholders, rather than a template-based manual" (p. 58). They present a five stage model of working towards better practice. It is essentially an action research model of: Reviewing the current situation → Planning for improvement → Implementing the revised plan →Evaluating the implemented program; and → Learning for continuous improvement. Tuovinen (2012) claims that the "most important function of this cycle is the professional sharing in benchmarking exercises that allows professional learning to take place" (para 20).

This Garlick and Pryor (2004) alternative approach to benchmarking has procedures and outcomes which are
- the result of a process of consensus;
- created by a cross-institutional team;
- aiming at identifying best practice in the sector; and
- student-oriented rather than institution-oriented.

**Maturity models and benchmarking**

Maturity models, since their inception, have been designed to assess the capability of organisational processes. The collective impact of the capabilities provides an indicator of *maturity*. Applying the *SESR-MM* to the SESR programs and strategies of an HEI provides information about their maturity. The profile generated allows the identification and an understanding of the relationship among the strengths and weaknesses within an institution which can then be addressed to progress institutional priorities.

When the two different approaches to benchmarking are applied to MM data
- the traditional interpretation of benchmarking would reflect a *competitive* orientation toward assessing the capability or maturity of institutional processes; while
- the alternative interpretation of benchmarking would reflect a *collaborative* orientation toward assessing that capability.

Although both competitive and collaborative approaches are possible, the procedures used in, and the outcomes of, the *SESR-MM* (e.g. consensus, cross-institutional, etc.) are consistent with those evident in the collaborative interpretation of benchmarking. Hence, the outcomes of the *SESR-MM* would maximise the potential for "organisational improvement" (Garlick & Pryor, 2004, p. 58). Or, to answer the question posed earlier, data from the *SESR-MM* may be *best* used to manage and improve institutional capability by being related to *collaborative benchmarking*.

## Conclusion: The place to be

In response to the demands being placed on HEIs by the increasing complexity and diversity of commencing student cohorts, they need to become more aware of their capability to engage and retain students. The *SESR-MM* discussed here is offered as an approach that will provide HEIs with not only a comprehensive set of information about their policies, programs and practices related to SESR but also an assessment of how mature or sophisticated those activities are. That assessment will allow HEIs to plan with some confidence the initiation, planning, management and evaluation of their institutional capability. The *SESR-MM* is an appropriate vehicle to guide changes in institutional processes as it can reflect the unique features and complexities of variable institutional contexts. If this process involves benchmarking, it is suggested that the best use of *SESR-MM* data to manage and improve institutional capability is by informing a collaborative venture.

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