Chapter 2
Benchmarking as an Instrument for Continuous Improvement in a Regulated Higher Education Quality Assurance Environment

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EXECUTIVE SUMMARY

Benchmarking by higher education institutions (HEIs) has been evolving for some time in Australia and New Zealand. Earlier efforts were focused on improving reputation, but now benchmarking has become a required component of higher education quality assurance, or regulatory compliance schemes. ACODE's benchmarking framework and the ACODE Benchmarks provide Australasian HEIs with the ability to review their technology enhanced learning (TEL) practices and decision-making against what is considered "good" practice. The ACODE benchmarking framework and its benchmarks also allow HEIs to inform quality audit, or regulatory compliance reporting by HEIs to maintain institutional recognition and demonstrate performance against threshold or other specific performance standards. ACODE's benchmarking framework and benchmarks are recognized as influencers in benchmarking practice. However, there is a need to generate empirical data to demonstrate its leadership role and review the benchmarks for present purposes and to determine how they are used by HEIs. Thus, in effect, this case study represents a view of the increasing

importance of benchmarking in higher education quality assurance schemes—at least in some national sectors—through the lens of benchmarking the benchmarks. The case presents the ongoing efforts, providing available data from one completed round and a still to be completed second round of what has become a biennial exercise. Findings so far suggest increasing interest in using the ACODE benchmarks to assist in determining performance within HEI TEL-related issues and in HEI participation in the benchmarking the benchmarks exercise as a means of learning from each other's practice.

ORGANIZATION BACKGROUND

As per ACODE (2014), the mission of the Australasian Council on Open, Distance and e-learning (ACODE) is to 'enhance policy and practice in Australasian higher education around technology enhanced learning and teaching.' Originating from the 1993 *National Conference on Open and Distance Education* (NCODE), the name change to ACODE in 2002 occurred to more closely reflect its mission and membership that is currently comprised of 48 HEIs in Australia, New Zealand and the South Pacific. It meets its mission by disseminating and sharing knowledge and expertise with HEIs and regulatory bodies; supporting professional development and providing networking opportunities for HEI staff; investigating, developing and evaluating new approaches to TEL; advising and influencing key professional and regulatory bodies in higher education; and promoting best practice. These activities are advanced through networking meetings and course workshops, the Pearson and ACODE Award for Innovation in Technology Enhanced Learning, the biennial Learning Technologies Leadership Institute (LTLI) and the ACODE benchmarking exercise performed every other year. Membership is by institutional nomination. However, non-member HEIs or other interested organisations with formal educational programs utilising TEL can participate in ACODE activities by agreement, or by affiliate membership.

SETTING THE STAGE

Benchmarking was adapted for use in higher education first in North America in the early 1990s, then Australia, the UK and continental Europe by the year 2000 (Jackson, 2001). The beginning of the 21st century saw benchmarking being used more systematically in Australian higher education as a continuous improvement (CI) tool in response to the introduction, by the federal government, of early quality

standards (Bridgland & Goodacre, 2005; Massaro, 1998). According to Schofield (1998),

Almost all such approaches to quality management emphasise evaluation, and broadly this can only be undertaken in four main ways: against defined objectives or standards (whether set internally or by external funding bodies); against measures of customer satisfaction; against expert and professional judgement; and against comparator organisations; with analysis in all four approaches being undertaken over a defined time scale. Thus benchmarking as it has come to be defined, was an inevitable outcome of the growth of the quality movement.

A review of the early literature on benchmarking in higher education showed there was – and based on the authors' recent experiences still is – the problem of what benchmarking is and how this differs from benchmarks. For this case, the distinction is particularly important because it is about benchmarking the impact of benchmarks. Thus, in this section there is [1] a quick discussion of what benchmarks and benchmarking is, followed by [2] a discussion of developments regarding the use of benchmarking in the Australian higher education sector and [3] the changing expectations regulatory compliance impacting the importance of the use of benchmarking by universities. The section finishes with an overview of the ACODE Benchmarks as these are the targets around which the case revolves.

Benchmarks and Benchmarking

Benchmarks are the points of reference for performance typically either in the form of setting a baseline, guidelines or standards that form evaluation activities and the framing of subsequent organisational acts. They can be set externally by a regulatory body, accreditation entity and/or internally. Benchmarks should be sufficiently specific to be useful indicators that HEIs can follow (Hart & Northmore, 2011). The process of setting benchmarks is akin to standards formation, though different, as it is a consultation driven and consensus forming process. As with standards, benchmarks are created through consultation with subject experts in the sector and/ or other stakeholder representatives who recognise the need for a benchmark and its subsequent application to the sector (International Organization for Standardization [ISO], 2010).

Benchmarking can be either a formal or informal knowledge sharing process based on the comparative analysis of practices for improvement purposes beyond that of evaluation (Ronco, 2012; Tomlinson & Lundvall, 2001). It is process-driven (attainment of improvement) and variance-driven (need for improvement) (Moriarty,

2011). A scan of the literature indicates that formal benchmarking is a continuous, formal and structured systematic evaluative tool to search, identify and understand practices leading to self-improvement and the setting of institutional goals through the measurements and analysis of products, services, and practices' of one organisation with competitors or acknowledged sector leaders (Anand & Kodali, 2008; Bridgland & Goodacre, 2005; Boxwell, 1994; Camp & De Toro, 1999; Ettorchi-Tardy *et al.*, 2012; Kumar *et al.*, 2006; Meade, 2007; Zairi, 1994). It is a quality-based technique that provides a roadmap that links and aligns organisational action and planning to mission, vision and values (Bridgland & Goodacre, 2005). Further, according to Tertiary Education Quality & Standards Agency [TEQSA], 2017:

Benchmarking is a means by which an entity can: demonstrate accountability to stakeholders; improve networking and collaborative relationships; generate management information; develop an increased understanding of practice, process or performance; and garner insights into how improvements might be made.

On one hand, benchmarking is more of a guide than a tool for statistical precision directed by what is deemed meaningful evidence (Braadbaart & Yusnandarshah, 2008; Bhutta & Huq, 1999). On the other, it is more than simple comparison of performance and the ultimate pay-off to organisations, which is based on the extent of useful organisational learning that can be translated into improvement action plans (Mann, 2012). Furthermore, in a university situation, benchmarking has been defined as a means of "connecting up relevant stakeholders both within and outside the institution in such a way that leads to knowledge exchange about why, what, where and how improvement might occur" (Meek & Van der Lee, 2005).

However, there are potential challenges emanating from performing a benchmarking exercise that planners have to take into account. Benchmarking should not be performed casually because of potential unintended (or hidden) consequences. For example:

- Benchmarking can be used for political and organisational control (e.g., process or quality control) reasons as well, so care must be taken to disentangle and be clear of the purpose behind this activity (Northcott & Llewelyn, 2005).
- Benchmarking can either become an exercise of collaboration or the creation of rivalries, particularly for public sector organisations, making its purpose a critical element in its planning (Braadbaart & Yusnandarshah, 2008).
- Benchmarking is not simply a numbers-only exercise. Capturing performance metrics alone does not necessarily lead to understanding how the underlying processes enable results as it can lead to benchmarking being used incorrectly (Alstete, 1995; Boxwell, 1994).

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- Limiting benchmarking to only performance indicators (PIs) ignores the premise that determining improvement requires the identification of the processes that generate the results found (Levy & Ronco, 2012).Benchmarking and PIs are two distinct processes that should operate in parallel (Meek & van der Lee, 2005).

- Using findings from a benchmarking exercise merely to imitate what others are doing does not mean improvement as the organisational response may not factor in context specific issues that impact on success (Moriarty, 2011; Pfeffer & Sutton, 2006). For when the distinction is important, pursuing a copy-and-paste approach encourages the identification of "good" practices instead of "best" practices (Navarro *et al.,* 2014).

- Applying more specific rules relative to benchmarking methodologies can lead to confusion (about what benchmarking actually is) or complexity from too many immanent processes (Alstete, 2008; Baba et al., 2006; Moriarty, 2011).

- Positive outcomes from benchmarking will be extolled while setbacks will most probably be ignored and the benchmarking process downplayed or deemed flawed, especially when there may be regulatory compliance implications (Feller, 2002).

Benchmarking approaches and techniques have changed over the years, increasing the range of uses for this methodology (Ahmed & Rafiq, 1998; Albertin *et al.,* 2015; Kyrö, 2003). New approaches have not displaced older ones. Instead, what has happened is that newer techniques complement the older ones, making benchmarking methodology more varied to pursue different institutional or sector needs.

Why perform a benchmarking exercise? According to Elmuti and Kathawala (1997), reasons for benchmarking include:

- Continuous improvement (CI),
- Determining areas for development or growth (gap or opportunity identification),
- Developing strategy,
- Enhancing organisational learning and improving organisational sense-making,
- Increasing productivity or improving the design of a product or service,
- Performance assessment, and
- Performance improvement through recalibration or setting of goal.

Because of the expanded techniques that benchmarking has seen from after World War II, now-a-days institutions and sector agencies thinking in terms of performing a

benchmarking exercise have to select between 40-60 frameworks, most of which are based on the Shewhart-Deming PDCA cycle. According to Anand & Kodali (2008)
These frameworks can be placed within three broad-based categories:

- *Academic/research-based* (looking at theoretical and conceptual aspects based on academic's or researcher's own work),
- *Consultant/expert-based* (judgment developed from personal practical experience at client's organisation), and
- *Organisation-based* (proposed by organisations based on own experience and knowledge –

According to Bhutta & Huq (1999), predominant types of benchmarking include:

- *Performance benchmarking* (the comparison of performance measures to determine how an organization compares to others),
- *Process benchmarking* (methods and processes comparing methods and processes in an effort to improve an organization's own processes),
- *Strategic benchmarking* (when changing an organization's strategic direction and the comparison with the competition is pursued in terms of strategy),
- *Internal benchmarking* (comparisons made between an organization's own departments/divisions),
- *Competitive benchmarking* (performed against ``best'' competition to compare performance and results),
- *Functional benchmarking* (compare the technology/process in one's own industry or technological area to become the best in that technology/process), and
- *Generic benchmarking* (comparison of processes against best process operators regardless of industry –

These frameworks have as few as 4 to as many as 33 steps within them predicated on where these sit within the PDCA cycle(Albertin *et al.,* 2015):

- **Plan:** Planning of the goal and type of benchmarking,
- **Do:** Gathering and processing of data,
- **Check:** Comparisons and gap analysis,
- **Act:** Actions for improvement

At their most basic, the generic steps constituting a benchmarking activity often include:

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- Determining what to benchmark (aim and type);
- Identifying who to benchmark;
- Forming the benchmarking team;
- Identifying the benchmark partners;
- Planning and conducting the investigation;
- Have a full understanding of internal business processes before comparing them to external organisations;
- Project future performance levels;
- Collecting and analysing benchmarking information (based on determining and aggregating the data for benchmarks, criteria, guidelines or standards; level of analysis; indicators);
- Communicate findings and achieve acceptance of the findings;
- Refine goals and incorporate into planning process to establish functional goals reflecting potential improvement, integrating targets and strategies into business plans and operational reviews;
- Developing and implementing action plans, monitoring progress and recalibrating benchmarks; and while less often pursued formally (because it may not be a purpose of the benchmarking exercise);
- Determining when a position of leadership is attained by incorporating best practices within the organisation's business processes and/or benchmarking becomes a part of the organisation's ongoing standard operating practice (Bhutta & Huq, 1999; Camp & De Toro, 1999; Castonguay, 2009).

Australian Higher Education Sector Developments Regarding Benchmarking

From early on, generic benchmarking exercises were not deemed to be as effective among Australian HEIs as those focused on resolving particular problems, requiring the involvement of those within universities (Massaro, 1998). Inglis (2005) was concerned that in Australia the term benchmarking is sometimes used by HEIs as a reference to other quality functions and techniques. For example, while PIs have become common practice as well as a means of testing performance to standards, these are not the same as benchmarking (Birnbaum, 2000; Farquhar, 1998). Yet, the use of PIs in general – and more specifically in the ACODE setting – allow HEIs to organise and direct themselves and their performance in ways that counter Barnett's (1992) concern over PIs, diverting attention away from HEIs essential purposes and values by focusing attention on the interrelationship between TEL and overall continuing processes.

Meek & Van der Lee (2005) noted the increase in the use of benchmarking by Australian universities, mainly for reputational rather than CI purposes. When used for improvement reasons, benchmarking was used for:

- General management improvement,
- Strategic planning,
- Research performance, substantiating improvement; and
- Functional area improvements (Shah & Treloar, 2007).

Popularity was enhanced from the Australian Universities Quality Agency's (AUQA) interest for their use as part of their quality audits (Cameron et al., 2008). AUQA's *raison d' etre* for benchmarking was for institutional performance monitoring against targets; however, results were mixed possibly because of a lack of a clear strategy behind their use (Cameron *et al.*, 2008, Stella & Woodhouse, 2007).For example, Freeman (2010b) reported that the *University Policy Benchmark Project* she and Jensen led showed that benchmarking was at least conducive to identifying "good" practice, an issue when looking for "best" practice. One reason for the mixed results could be that the complex nature of HEIs and their relationships to their external environments, a naïveor *ad hoc* approach to benchmarking would not tend to be successful (Padró & Hawke, 2003; Tomlinson & Lundvall, 2001). This could then result in struggling with identifying valid performance and practice benchmarks (American Productivity and Quality Center [APQC], 2016). Another related reason for mixed success, therefore, could be that HEIs may not have centralised, full- or part-time benchmarking functions (APQC, 2016).

McKinnon *et al.* (2000) established a benchmarking manual for Australian universities. However, the manual was not deemed useful due to its "one size fits all" top-down approach (Meek & van der Lee, 2005). The Australian Learning and Teaching Council's (ALTC) *Preparing Academics to Teach in Higher Education* (PATHE) project provided an updating of benchmarking guidelines (Hicks *et al.,* 2010). Along with maturing HEI benchmarking processes, professional associations such as ACODE added additional benchmarking approaches (frameworks), benchmarks and tools for HEIs to use such as the Australian Universities Community Engagement Alliance (AUCEA) benchmarking framework (Garlick & Langworthy, 2008) and the Benchmarking COMPASS® Database (McAllister et al., 2011). But with the replacement of AUQA and its quality audit format with TEQSA and its regulatory compliance approach, benchmarking activities within HEIs became more inexorably linked with regulatory compliance. As the Bradley Review (Bradley *et al.,* 2008) that recommended the creation of TEQSA pointed out: "it is" vital that Australia ensures it is not left behind, benchmarking its current and future performance against its past.

Regulatory Compliance Developments on Benchmarking

Benchmarking for regulatory compliance purposes as discussed in this subsection can be classified as "Regulatory Benchmarking" as it is taken for accountability purposes (Cameron et al., 2008). In Australia, benchmarking has become a useful methodology for comparing standards and HEI performance against these standards (Booth, 2012). Yet, few HEI "policy cycles include the value-adding stages of monitoring, evaluation and benchmarking" (Freeman, 2014).

AUQA began asking Australian universities if they engaged in benchmarking, although they were not focusing on any one "particular interpretation" of benchmarking (Stella & Woodhouse, 2007). This report on benchmarking in Australian higher education did not find a standardised approach toward benchmarking and found:

- An Unclear picture of why HEIs had initiated benchmarking strategies;
- Variable stages of development and success;
- A lack of systematic use of benchmarking to monitor institutional performance (due to some universities making little use of external points of reference);
- Internal ambiguity and lack of clarity yielding various understandings of benchmarking at some HEIs although there was a recognition for the need to develop a "a feeling of ownership for, and a shared understanding of, their benchmarking efforts";
- Weak and uneven use of hard data leading to concerns over the quality of data collected;
- No evidence of external measurements on a number of student- and staff-related matters;
- Sector-wide gaps in integrating benchmarking into other organisational operations

On the other hand, Stella and Woodhouse (2007) found that sector HEIs, in spite of all of the variance, were interested in "best practice benchmarking." HEIs demonstrated an overall intent to use identified "best practice" as a means to develop an "understanding of the fundamentals that lead to success". Areas within HEIs where benchmarking seemed to be well in place were in library services and information technology. In some instances internal benchmarking was being refined through external benchmarking with other universities.

Recommendations made in 2004 emanating from the AUQA Cycle 1 reviews found benchmarking to be a methodology that AUQA should emphasise (Stella & Woodhouse, 2007). Nineteen recommendations and five affirmations specific to benchmarking were provided in the review (Shah & Treloar, 2007). To go along with

developmental and varied benchmarking processes and experiences by HEIs, one major concern noted by Winchester (2010) resulting from the inconsistent approach toward benchmarking was the lack of consistent sector-wide data on a variety of measures which makes benchmarking a more difficult proposition.

TEQSA (2017) is indicating an interest in the expansion of benchmarking activities at HEIs as part of their risk-based quality assurance practice to meet regulatory compliance requirements through the lens of TEQSA's threshold standards. Specifically, TEQSA is requiring evidence of active benchmarking activity implementation and formalised benchmarking relationships (Freeman, 2014). The view is that, as Garlick and Langworthy (2008) have quoted, in an HEI context:

Benchmarking uses normative terms like "collaboration", "organisation learning", "inclusiveness", "reflection", "review", "leadership" and "improvement". This way is about connecting up relevant stakeholders both within and outside the institution in such a way that leads to knowledge exchange about why, what, where and how improvement might occur.

The ACODE Benchmarks

The Benchmarks inform the application of TEQSA's threshold standards – and so has its benchmarking approach (Booth, 2012; Freeman, 2014), among others.

The ACODE Benchmarks were the Australasian region's first attempt to establish a consistent approach to TEL good practice relating to:

- Governance and management,
- Planning and quality assurance (QA),
- Information technology systems and services,
- IT application and support (for staff and students),
- Professional development, and
- Student training to increase effectiveness as a learning technique.

Embedded within the Benchmarks were suggestions for determining TEL assessment/evaluation, design and implementation, and pedagogical considerations for TEL courses (organisation and learning and teaching strategies) at the institutional level, not against individual systems or technologies within the institution.

Created in 2004, the Benchmarks were revised in 2007 and updated in 2014 to reflect the evolving experience in the effective application of TEL and the emergence of new technologies and practices. They were designed to be used as an internal audit tool, a process to undertake inter-institutional comparisons and as a mechanism to inform TEL-related (and potentially broader learning and teaching)

change within HEIs (Sankey & Padró, 2016). One concrete application provided by the Benchmarks has been assisting HEIs has been the ability to define their frameworks – organisational decision-making, praxis and responsibility boundaries – by technologies already present or being considered for adoption, such as:

- *Core technologies fully funded and supported by the central ICT and learning support services* (e.g., LMS, ePortfolio, virtual classrooms, lecture recording, repositories). Development and training should be provided to help staff make the best use of these systems.
- *Supported technologies used by discipline groups* (as opposed to the whole university) for activities associated with a core system. Typically funded at the department or school level, but the support is provided by the central ICT and learning support services. Centralised professional development and training provided.
- *Allowed technologies of technologies operated outside the university's main ICT infrastructure* such as a server in a school or out in the cloud (e.g., Skype, Facebook, 3D immersive worlds like Second Life). Typically, the central ICT unit only allows these systems into the university domain (through the firewalls), offering no support for these systems other than, possibly, some information made available on their support website.
- *Emerging technologies that the HEI has agreed to trial* with the understanding that they may become a supported or core technology. Typically, these systems are housed within the HEI infrastructure, with some limited support offered by the central ICT and learning support services. There is agreement to adopt if the new technology is deemed successful, to being included in the list of systems to be used by all staff. One important consideration is how staff get trained in the use of the new technology (Sankey & Padró, 2013).

The 2014 update was based on a full-scale review of the eight Benchmarks based on [1] continued "fitness of purpose", [2] long-term viability, [3] extent of use by HEIs, and [4] whether the benchmarking process itself was used as one-off process or for ongoing QA and quality enhancement (QE) of internal HEI TEL activities (Sankey & Padró, 2016). Although ACODE's reputation is solid in the HES (e.g., Booth, 2012; Keppell et al., 2011), interest over the recognition of sector leadership for providing guidance on TEL drove the benchmarking exercise decision-making process. In particular, the status of the Benchmarks is a continuous concern based on the evolving technology environment and the creation of other frameworks or tools by other organisations as noted in Table 1 (Marshall & Sankey, 2017; Sankey & Padró, 2013).

Table 1. Complementary or competing TEL guiding principles informing HEIs

Sponsoring Organisation	Country/ Region	Benchmarks, Benchmarking Framework or Equivalent	Accreditation, Certification or Professional Development	Tool or Checklist
Australasian Council on Open, Distance and e-learning (ACODE)	Australia & New Zealand	√		
Council of Regional Accrediting Commissions (C-RAC)	USA	√		
European Association of Distance Teaching Universities (EADTU)	Europe		√	
European Foundation for Management Development (EFMD)	Europe		√	
European Foundation for Quality in E-learning (EFQUEL)	Europe		√	
e-Learning Guidelines (eLG) – funded by the Tertiary Education Commission and led by AUT University and Massey University	New Zealand	√		
e-Learning Maturity Model (eMM) – originally supported by the New Zealand Ministry of Education	New Zealand	√		
ISO/IEC19796-1 Standard	Switzerland	√		
Online Learning Consortium	USA		√	
Quality Matters (QM)	USA			√
Taking the Lead – Ako Aotearoa National Centre for Tertiary Teaching Excellence	New Zealand			√

The ACODE Benchmarks are some of the earliest quality assurance principles for online learning at HEIs. Evaluation is a key component of each of the eight Benchmarks in that these require HEIs to look at their contexts, processes and products to determine the extent to which the Benchmarks apply and their influence on HEI activity through TEL (Sankey & Padró, 2013). Each Benchmark was designed to look at specific aspects of TEL decision-making related to governance and planning, technology and support systems for staff and students. While it was intended that the Benchmarks could be used separately – and thus are discrete – based on the overlap of some of the areas under review – some deliberate duplication of PIs was built in (ACODE, 2014; Sankey & Padró, 2016).

Every Benchmark is structured to include a scoping statement, good practice statement and PIs. Appendix (Table 3) provides the details for all of the designed elements of the Benchmarks. Below is a list of the eight topic areas (ACODE, 2014):

1. Institution-wide policy and governance for TEL (8 PIs).
2. Planning for institution-wide quality improvement of TEL (5 PIs).
3. Information technology systems, services and support for TEL (8 PIs).
4. The application of TEL services (9 PIs).

5. Staff professional development for the effective use of TEL (7 PIs).
6. Staff support for the use of TEL (9 PIs).
7. Student training for the effective use of TEL (8 PIs).
8. Student support for the use of TEL (10 PIs).

The Benchmarks are used as a "good practice" comparison for existing performance in a self-assessment process to identify strengths, weaknesses and action facilitation (ACODE, 2014). For the self-assessment HEIs perform, the PIs are rated on a Likert 5-point scale. The self-assessment exercise proposed by ACODE begins with an individual self-assessment of the HEI TEL environment followed by a team self-assessment. Those involved in the self-assessment exercise should come from "different areas of the institution that have a stake in how a particular Benchmark is performed". The self-assessment should not include giving staff a survey to determine an aggregate perception of what is happening in the TEL space because of experienced problems and confusion that tend to come from using a survey at this point in the process. Another temptation to avoid is using a half-point response as the exercise "is designed to work best with whole numbers". Figure 1 provides an example of the intended self-assessment process.

CASE DESCRIPTION

While it would make sense that the benchmarking activity pursued by ACODE was performed in lockstep with the benchmarking process setup found within the ACODE Benchmarks (2014) document, it could not simply follow the self-assessment on its own due to scope. Instead, the self-assessments were the basis of the benchmarking the Benchmarks activity. Benchmarking now used surveys as a means of collecting data and to delve into the evaluative elements of the exercise.

The 2014 update was based on the outlook for the Benchmark's "fitness of purpose", long-term viability and determination if use by HEIs was either a one-off or ongoing improvement or QE proposition (Sankey & Padró, 2016). To determine the answers, it was agreed that the Camp and De Toro (1999) five-phase, ten-step process was the preferred approach to take. The key element was Phase 5, that of maturity. ACODE wanted to determine if the Benchmarks (and itself) had achieved a leadership position based on the extent the Benchmarks were incorporated into HEI business processes on an ongoing basis (Table 2).

As discussed, the ACODE Benchmarks underwent revisions based on consultative feedback from a working party of ACODE representatives. The next step was to take a look at applicability, use, and approach to use within the different institutions. Once the current state of play was determined, a further step was to evaluate the

Figure 1. Example of the ACODE Benchmarks self-assessment process for PIs 1
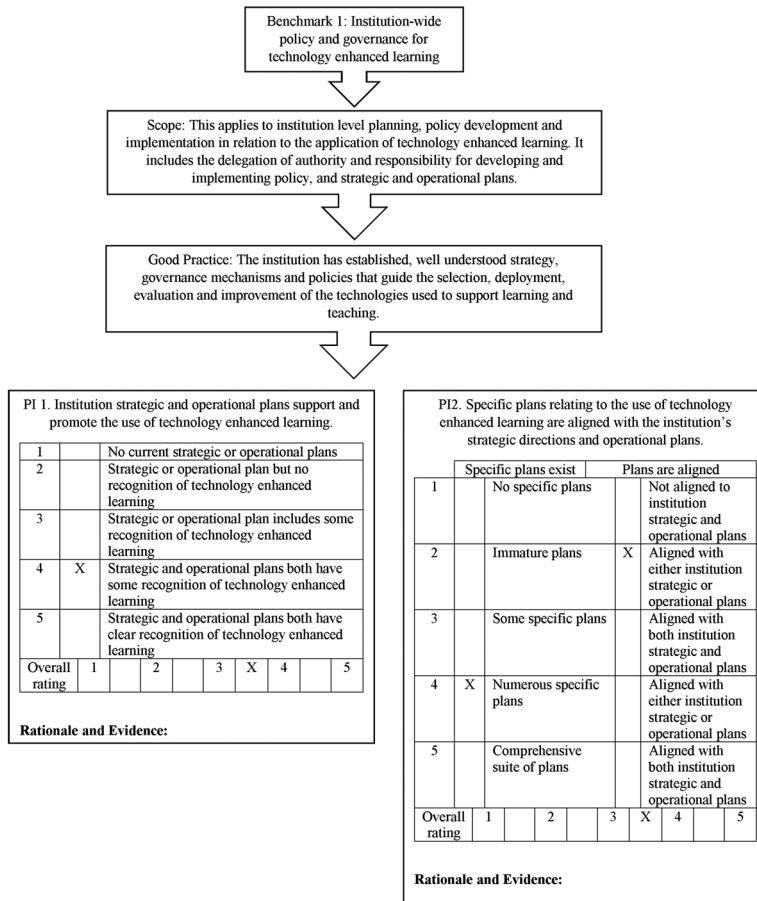
effectiveness and impact of the Benchmarks in generating HEI CI and QE as part of demonstrating ACODE sector leadership (Camp & De Toro, 1999). The reason for this was the need for an evaluative approach toward impact that also goes beyond process assessment models (PAM) such as that identified in the ISO/IEC 15504-2 standard (capability, attributes, rating) to avoid the problem of over-reliance on databases at the expense of reasonable, comprehensive and multi-dimensional process analysis (Lucertini *et al.,* 1995).

From a practical perspective, the long-view needs (which were not directly addressed in Round 1) for the benchmarking exercise were determined to be to identify and account for:

1.   HEI use of the Benchmarks in decision-making;

Table 2. ACODE Round 1 process in relation to the Camp and De Toro's benchmarking process

Benchmarking phase	Benchmarking steps	ACODE Benchmarking study
Phase 1: Planning	1. Deciding what to benchmark 2. Identify whom to benchmark 3a. Plan the investigation and 3b. Conduct it	1. Validation of Benchmarks themselves; identification of use of Benchmarks by HEIs and their impact 2. HEIs using ACODE – internal, competitive and partnering benchmarking exercises (cf. Camp & De Toro, 1999) 3a. Participants had to perform an assessment of at least 2 of the benchmarks 3b. [i] Summit where all participants shared information and worked on filling out a survey [ii] Follow-up survey
Phase 2: Analysis	4. Have a full understanding of internal business processes before comparing them to external organisations; examine the best practices of other organisations; measure the gap 5. Project future performance levels	4. To participate, HEIs had to first undertake a rigorous self-assessment of their capacity in TEL against the embedded performance indicators (PIs) that are part of (used to validate) the Benchmarks. 5. Completion of findings, generation of ratings and reporting on strengths and weaknesses that suggest further performance focus (at the Summit and through communication within individual HEI)
Phase 3: Integration	6. Communicate findings and achieve acceptance of findings; refine goals and incorporate into planning process 7. Establish functional goals reflecting projected improvement, integrating targets and strategies into business plans and operational reviews	6. Overall and individual HEI reports of results provided to all participants and ACODE members 7. Completion of the ACODE Benchmark process leads to the identification of improvements and strategies that individual HEIs can pursue; for ACODE itself, recommendations have been identified from collective feedback of participants to establish targets and strategies on future plans
Phase 4: Action	8. Develop & implement action plans 9. Monitor progress 10. Recalibrate benchmarks	8. Predicated on internal HEI interest, QA and decisionmaking process; for ACODE action plans generated by leadership team in consultation with the membership 9. ACODE will perform follow-up activities as part of the overall benchmark exercise to monitor HEI impact and continue validation of the Benchmarks 10. ACODE intention is fitness of purpose to determine appropriateness of Benchmarks and their use
Phase 5: Maturity	Determining when a leadership position is attained; incorporating best practices in all business processes; benchmarking is a standard part of guiding work as an ongoing process	Determination of ACODE's ability to demonstrate how, what Luhmann (1995) called double contingency generates a shared perspective and mutual capacity to influence each other.

Source: adapted from Camp and De Toro, 1999, pp. 12.3-12.4

(Source: Camp & De Toro, 1999)

2.   The use of ACODE benchmarking within participating HEIs to determine how the HEIs were using the Benchmarks;

3.   Benchmark impact on HEI decision-making, deployment and performance within TEL and related learning and teaching activities; and

4.   Complementarily between the Benchmarks, benchmarking and the broader learning and teaching context at participating HEIs to see if the Benchmarks help broaden learning and teaching principles for administration, planning, evaluation and praxis.

Based on this perspective, Round 2 began to see a more evaluation elements than Round 1, which was exploratory in nature in order to determine some baselines for later comparisons. What was decided was to embed evaluation frameworks within benchmarking rather than the more typical reverse practice of using benchmarking as an element of an evaluation (Feinstein, 2012; Lucertini *et al.*, 1995; Newcomer & Brass, 2016; Scriven, 2016). Similar to what some have previously termed intelligent benchmarking, the rationale for this approach was to:

● Deemphasize metrics,
● Focus on collaboration rather than competition,
● Concentrate on "good" practice to identify "best" practice and determine the extent and type of influence HEI context has on the distinction, and
● Being systemic to provide a broad perspective on CI from using of a variety of analytical tools and methodologies (Tomlinson & Lundvall, 2001).

Before Round 2 could occur, however, there was an in-between step required that was built-in to Round 1: determining sector appetite for performing a voluntary sector-wide benchmarking activity on an ongoing basis. This in itself was an important step as participation is a demonstration of sustained interest based on perceived benefits accrued to participants from ACODE's activities and Benchmarks (Adebanjo & Mann, 2008).

At the time of this writing, ACODE has performed two voluntary sector-wide rounds of benchmarking the Benchmarks: Round 1 in 2014 and Round 2 in 2016. From the outset, the desire was to open up the benchmarking exercise to Australasia (where most ACODE members are located) and to other higher education providers globally who had an interest in using the ACODE Benchmarks as part of their TEL decision-making and operational processes. The principal stipulation was that participating HEIs had to commit to using a minimum of two of the Benchmarks.

Round 1

For more detailed results from Round 1, please refer to findings reported in various conference presentations, journal articles and reports (e.g.,Sankey, 2014; Sankey & Padró, 2016). It was held at Macquarie University in Sydney in June 2014. Twenty-four (24) HEIs from 5 countries undertook to use some or all of the benchmarks (15 Australian universities, 6 New Zealand universities, 1 university from the UK, 1 university from South Africa, and 1 university from Fiji). Thirteen universities performed 2 Benchmarks within their institution while five HEIs undertook an analysis of 4 of the Benchmarks, three HEIs completed 3, one HEI did 1 Benchmark,

one HEI performed an internal analysis of 5 of the Benchmarks and one HIE did all 8 Benchmarks.

As reported in Sankey and Padró (2016), 35 out of the 38 participants at the Sydney Summit completed the online evaluation survey. This survey consisted of 30 scaled questions, with the last four questions asking for an open response. Twenty-five HEI leaders from the 24 participating universities were later invited to complete a follow-up survey, with 22 of them doing so. This survey consisted of seven open-ended questions.

A review of the collected data from all of the evidence sources yielded six recommendations (discussed in the SOLUTIONS AND RECOMMENDATION section below) for ACODE to consider (Sankey & Padró, 2016). Key findings from the surveys from which the recommendations were based were:

- An overwhelming view of the worthiness of the Summit;
- A perception that the way the PIs had been formed within the Benchmarks made what was required clear and unambiguous;
- A belief that the Benchmarks covered sufficient TEL topics within certain contexts;
- An interest in knowing what the other institutions had to share based on the information shared at the Summit, with most participants believing reasonable comparisons between HEIs could be made and many believing they had learned some strategies from others that could be implemented at their institution;
- The ability to source sufficient and credible evidence to support their judgments around the PIs;
- Agreement there was sufficient scope within the Benchmark PIs to cover most of their institutional-specific TEL contexts;
- An opinion that the self-assessment and Summit activities made participants think twice about their HEI TEL activities that led to considered implementing strategic changes as a result of their involvement with the self-assessment and Summit.

Round 2

Round 2 was held in Canberra on June 2016. A total of 27 universities from Australia, New Zealand, the Pacific, South Africa and the United Kingdom attended. Once again self-assessments provided the basis for the exercise and surveys were used (one during the session and a second one six months after the exercise) to "identify shared issues, potential solutions and opportunities for ongoing improvements in the use

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of technology to enhance student outcomes and organizational systems" (Marshall & Sankey, 2017). New tools developed for this exercise requested in Round 1 were used as well to assist in the data collection and analysis.

Fifty participants representing 401 people involved in the individual HEI self-assessment (an average of 15 per HEI)attended the 2016 Summit, with 47 of them completing the online evaluation survey (Marshall & Sankey, 2017). "The overall tone of the responses was very positive, with 95.8 percent of the participants reporting that they found the activity personally very rewarding". The online evaluation survey was expanded to 40 questions, reflecting the expanded areas for investigation (evaluation): [1] the biennial ACODE benchmarking activity, [2] the internal HEI benchmarking activity, [3] the impact of both HEI internal benchmarking and the ACODE benchmarks within the HEI, and [4] the impact of the ACODE benchmarks on HEI practice.

One unanticipated result from this Round was the request from the UK's Open University to run an ACODE sponsored event in the UK, among 15 HEIs, who similarly would go through the self-assessment aspect of this benchmarking exercise. This effectively expanded Round 2 participation beyond the 27 Canberra participants, making for a grand total of 41 HEIs actively using the ACODE Benchmarks (in addition to a representative from JISC).

Initial findings from the Canberra Summit highlighted the following suggestions (Marshall & Sankey, 2017):

- A view that Summit participation is very rewarding;
- A belief that reasonable comparisons between HEIs could be made, with many believing they had learned some strategies from others that could be implemented at their institution;
- An opinion that the self-assessment and Summit activities made participants think twice about their HEI TEL activities that led to considered implementing strategic changes as a result of their involvement with the self-assessment and Summit;
- A thought that the outcomes from the Summit will provide an impetus for change at the participants' HEIs.

More detailed results are still forthcoming as the post-Summit surveys have not come out and the initial data for the UK exercise is still being reviewed.

CURRENT CHALLENGES FACING THE ORGANIZATION

Resource Limitation

As with any community, non-profit or professional association, a key concern is to avoid volunteer leaders and member representatives to be overwhelmed or burned out from implementing ACODE's different programs (cf., Rich, 2015). When there is no profit motive involved other factors such as member interest, volunteer leadership beliefs and their passion is what drives product-development decisions (Nelson, 2015). Specifically, a major result from Round 1 was the recommendation and subsequent implementation of the biennial Summit exercise which required ACODE to decide how it could maintain the process in relation to its other commitments, especially the running of the Leadership Institute that is also run on a biennial basis. Another recommendation from Round 1 was to provide online technology to assist in data collection and the sharing of HEI practice after accounting for/ filtering confidentiality issues to minimize the exposure of what would be considered "proprietary" information. The challenge here was the resourcing of these projects so these could be completed in a timely and cost-effective manner.

Lack of Time by Volunteer Leaders and Interested Members to Perform the Required Analysis

ACODE as a professional association provides a benefit to the sector in that it helps shape and delineate the definition of good TEL practice, acts as a negotiator to shape and redefine interaction practices within and between HEIs and through its benchmarking exercises also monitors HEI practice through it Benchmarks (cf., Greenwood et al., 2002). However, while individuals employed in HEIs tend to volunteer for professional association activities and there is a sense of member ownership rather than organizational control (Engle, 2015; Nesbit & Gazley, 2012), time is a constraint. For example, a study from the USA showed the average volunteer works 3.5 hours per week or three to four weeks per year (Abbott, 2005). Consequently participants weigh-up their time to perform these additional activities through the lens of needing to do their "day jobs" (DeVoe & Pfeffer, 2007). This has translated to longer timeframes to perform the data analysis and accompanying tool validation. What has been prioritized is the reporting of the Summit activities and survey results.

Lack of Construct Validity for Most TEL Frameworks and Tools

Marshall and Sankey (2017) identified a major challenge for doing follow-up evaluation and research on the effectiveness and impact of TEL frameworks and tools utilized by HEIs: item validation. All of the frameworks in Table 1 underwent a content or face validity exercise through a review by a panel of experts (sometimes supported by a literature review) in determining the items and underlying constructs. The additional steps of reliability and construct validity, however, has not been documented or observed, (at least by the authors based on their literature review and experiences in designing the Round 1 and 2 benchmarking processes) to ensure rigour.

There are three basic types of validity: criterion, content and construct (Cronbach & Meehl, 1955). Ideally, according to Messick (1995), these three should be performed and connected to better determine the meaning of the results because "it matters whether the contextual clues that people respond to are construct-relevant or represent construct-irrelevant difficulty or easiness". Responses on the various survey instruments used in benchmarking elicit responses predicated on judgments rather than tallies (Cronbach, 1971). These responses are influenced by the innumerable details of format and wording, ergo the need to understand [1] the whole of what the items are seeking to find out and [2] what the items are consistently getting (which is where reliability comes in).

On a related topic, a reliability study has not yet been performed due to time constraints on part of ACODE leadership and members involved in analyzing the data. The raw data is present to perform at least a Cronbach α. Additional anticipated reliability analyses contemplated are inter-item correlation (AIIC) and average item-total correlation (AITC) for the instrument items.

Placing Evaluation Models Within Selected Benchmarking Methodology

One interesting challenge faced in selecting the benchmarking methodology to allow Phase 5 leadership/maturity determination was that there is an uneasy relationship between benchmarking and evaluation. On the surface this challenge was a counterintuitive situation, but a careful look at the literature did shed some insight at the logic behind what can be described as a juxtaposition. Three key issues were found in the literature illuminate the discrepancy:

1. Planning and managing are not key concerns of evaluators (Scriven, 2007).
2. Benchmarking describes while evaluation focuses on the worth or value of an activity (Hart et al., 2009).

3. Context of purpose and interpretation of causality shape the outcome patterns of processes and results (cf.,Pawson & Tilley, 1997).

The first two issues relate to purpose as a shaper of context. Context itself is the key third issue because how it differentiates the selection of one over the other or the determination of how to combine them. For example, context is critical to shaping a project's rationale and approach, understanding the role of evaluation, the exercise's rigour and the meaningfulness of the interpretation generated from the findings (Scriven, 2016). Evaluating the benchmarks themselves looks at their usefulness as a baseline, guideline, or standard as related to application and intention of those creating the benchmarks. Benchmarking provides a different context in that it provides a more systematic approach to institutional performance, technically creating a context-first approach rather than a more traditional methods-first approach toward what evaluation approach to use (Rog, 2012).

Luckily, the literature does recognize a linkage between benchmarking and evaluation. When performance assessment is embedded within benchmarking, evaluation becomes an embedded element as a matter of practicality (Newcomer & Brass, 2016). Benchmarking is "a specific type of evaluation methodology, where merit or worth is based upon the comparison of the performance of different organizations" (Castonguay, 2009). It is an evaluative judgment tool of the actual uses and intended or unintended effects programs had on those impacted, the route(s) taken to create the effects (Nielsen & Ejler, 2008; Scriven, 2007). Extending from earlier works, Nielsen and Hunter (2013) identify five complementarities, the last one helping distinguish the practice of evaluating benchmarks from evaluating the benchmarking process itself:

1. **Sequential Complementarity:** Where monitoring information generate questions requiring evaluation studies or these studies generate knowledge requiring continuous performance monitoring.
2. **Information Complementarity:** When both monitoring and evaluation draw from the same data sources and recycle information for different uses and analyses.
3. **Organizational Complementarity:** The coupling and sharing of monitoring and evaluation information through the same administrative unit rather than two or more discrete units.
4. **Methodical Complementarity:** The sharing of similar processes and tools for structuring and planning, obtaining data, analysing and inferring judgment, and converting data into actionable information.
5. **Hierarchical Complementarity:** Information gathered as part of performance management at the national or policy level that can be utilised as comparative or benchmark data for evaluation purposes.

SOLUTIONS AND RECOMMENDATIONS

Round 1: Recommendations

The six recommendations resulting from the Round 1 benchmarking exercise as reported by Sankey and Padró (2015, 2016) were:

1. That over the next few months some minor adjustments be made to the Benchmarks, based on those things identified by the Review Group and from the Evaluation Survey.
2. That the final set of benchmarks be presented and endorsed at the ACODE 66 business meeting in Melbourne (later that year in 2014).
3. That future iterations of the Benchmarks look to establish if there is a stronger case to merge Benchmarks 7 and 8, and by extension Benchmarks 5 and 6 that use a similar methodology.
4. That ACODE agree to facilitate a formal benchmarking activity every second year and that there be allowance for this made within business processes, similar for that of the Learning Technologies Leadership Institute. In doing so, consideration should be given to whether the activity should stretch over three full days.
5. That a series of online tools and a collaboration space be established within the ACODE site to make it easier for institutions to engage in formal inter-institutional benchmarking activities.
6. When the online collaborative space is established, that an area be provided to allow institutions to share good practice examples that align with the PIs.

The most important recommendation for ACODE was Recommendation 4 based the interest from participants that ACODE facilitate a formal benchmarking activity every two years. Based on Round 2 participation, many of the same HEIs opted to once again be part of the exercise. Logistical issues, participation and formatting as previously discussed earlier in the chapter were considered and decisions based on how to establish an optimal format for participants that also allowed for deeper evaluation capacity (Sankey & Padró, 2016).

The second most important recommendation was Recommendation 5 to create a series of online tools and collaboration space. An online tool to assist institutions share their data and practices was developed for ACODE by staff at the University of Southern Queensland to amplify the knowledge and benefits derived from what others are doing (Marshall & Sankey, 2017; Alavi & Leidner, 1999). The first iteration of this tool was utilised in Round 2, within the Benchmarking area on the ACODE website.

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Round 2: Establishing a Validation Process for Future Biennial Summit Benchmarking Exercises

So far, there is no recognized set of procedures for validation of quality frameworks (Inglis, 2008). Marshall and Sankey (2017) posit the perspective that is driving the ACODE benchmarking process based on Inglis' (2008) review of the literature:

- Reviewing the research literature related to effectiveness in online learning;
- Seeking input from an expert panel;
- Undertaking empirical research;
- Undertaking survey research;
- Conducting pilot projects; and
- Drawing on case studies.

The first two bullet points have been performed to establish the Benchmark updates and provide the framework for the benchmarking exercise. Round 1 was the pilot project while Round 2 and later Rounds occurring biennially provide the mechanism for empirical and survey research based on a collective or multiple case study methodology that the pre- summit HEI self-evaluations represent. The analysis of the self-assessments allows ACODE to establish to explore different within and between HEIs to generate an analytic generalization based on the empirical findings (Yin, 1994).

Not being able to report detailed findings demonstrates the relatively early and very active nature of the ACODE benchmarking exercise. The continued interest and expansion into the UK is on its own evidence of leadership and potential growing impact, but the ultimate goal is to achieve empirical data regarding its use to demonstrate maturity alongside leadership. So far, the ACODE Benchmarks and the accompanying benchmarking exercise are seen as informing the higher education quality assurance and regulatory compliance agencies in Australia and New Zealand. The expectation is for the Benchmarks and the benchmarking exercise to increase their level of influence in the higher education sector on broader learning and teaching issues and practices associated with HEIs. One area that the authors and others in ACODE have noted is the lack of a specific Benchmark pertaining to learning and teaching praxis. This was originally the case because of other professional association benchmarks and standards relating to the topic, but as technological advances in learning and teaching, access and quality, there is a possibility of expanding into this area to make the ACODE Benchmarks more comprehensive and increase their usefulness to HEIs.

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KEY TERMS AND DEFINITIONS

Assessment: A systematic process of documenting performance in relation to expectations or requirements, describing current conditions, diagnosing what is going on through data/observation analysis or potentially predicting future events based on past performance.

Benchmarking: A continuous, formal, and structured systematic evaluative tool to search, identify, and understand practices leading to self-improvement and the setting of institutional goals through the measurements and analysis of products, services, and practices of one organization with competitors or acknowledged sector leaders.

Benchmarks: The points of reference for performance typically either in the form of setting a baseline, guidelines or standards that form evaluation activities and the framing of subsequent organizational acts.

Continuous Improvement: The formal, ongoing, systematic effort based on the Deming-Shewhart PDCA cycle to ensure that the organization is doing all it can do to ensure maximal capacity to meet the demands placed on it, whether incremental or through breakthrough or disruption of practice.

Evaluation: A systematic process of arriving at a judgement about the merit, success, or worth of an object, organization, or program based on applying a set of

criteria that is context specific in "real time" or as a retrospective review of events and results.

Fitness for Purpose: Similar to the concept of "fitness for use," is one of the key elements in the field of quality. Based on two components, meeting needs and conformance, it provides the context for assessing and/or evaluating the appropriateness of the object under review.

Performance Indicators: Metrics defined to ensure a unit or organization is achieving its important objectives.

Regulatory Compliance: An organization's or sector's ability to meet legal obligations imposed on either or both as set forth either through legislation or rules set forth through a governmental body created (or assigned) to oversee the sector.

APPENDIX

Acode Benchmarks

- **Scoping Statements**
- **God Practice Statements**
- **Performance Indicators**

Table 3. ACODE BENCHMARKS process

Benchmark	Scoping Statement (SS)	Good Practice Statement (GPS)	Performance Indicators (PI)
1. Institution-wide policy and governance for technology enhanced learning	This applies to institution level planning, policy development and implementation in relation to the application of technology enhanced learning. It includes the delegation of authority and responsibility for developing and implementing policy, and strategic and operational plans.	The institution has established, well understood strategy, governance mechanisms and policies that guide the selection, deployment, evaluation and improvement of the technologies used to support learning and teaching.	1. Institution strategic and operational plans support and promote the use of technology enhanced learning. 2. Specific plans relating to the use of technology enhanced learning are aligned with the institution's strategic directions and operational plans. 3. Planning for the ongoing use of technology enhanced learning is aligned with the institution's budget process. 4. Institution policies, procedures and guidelines provide a framework for how technology enhanced learning should be used at both a course and program level. 5. Policies, procedures and guidelines on the use of technology enhanced learning are well communicated and integrated into processes and systems. 6. The institution has established mechanisms for the governance of technology enhanced learning that include representation from key stakeholders. 7. Authority and responsibility for the operational management of the technologies used to enhance learning and teaching are clearly articulated. 8. The institution uses a clearly articulated policy framework and governance structure when deciding on the adoption of new technologies.

Table 3. Continued

2. Planning for institution-wide quality improvement of technology enhanced learning	Institution-wide processes are in place, including, planning, implementation, evaluation and feedback loops, to ensure the effective use of technology enhanced learning and its alignment with external requirements.	Institutions support and encourage the sustainable, effective and efficient use of technology enhanced learning through strategic planning processes at all levels of the institution. The focus is continuous improvement through systematic and regular evaluation of implementation strategies and outcomes. Such evaluation will in turn inform future planning and align with the institutions strategic direction.	1. Institution-wide processes for quality assurance are in place and in use to integrate technology enhanced learning at both a program and course level. 2. Comprehensive evaluation processes are in place to support decisions relating to the implementing of technology enhanced learning services. 3. Planning for quality improvement of the institution's technology enhanced learning systems and procedures is resourced. 4. Evaluation cycles are in place to measure key performance indicators identified by and for all stakeholders, and are integrated in planning for continuous improvement purposes. 5. Outcomes are reported to all levels of the institution.
3. Information technology systems, services and support for technology enhanced learning	Information technology (IT) services describe the range of systems and support required to maintain and update the institution's approach to technology enhanced learning. This can include the use of: learning management systems and their associated systems; library systems; cloud-based tools and services; mobile technologies. It also includes hardware (computers, telecommunications and ancillary equipment) and networks, both internal and external which are used for the purposes of technology enhanced	Technical infrastructure, both physical and virtual, is aligned with institutional learning goals and the technologies are resourced, support staff are trained and the infrastructure is implemented, maintained, administered and supported efficiently and effectively.	1. Systems and processes are in place to generate learning and educational analytic data to support decision making. 2. There are clearly articulated processes, and responsibilities for the implementation and maintenance of the technology enhanced learning systems. 3. Responsibilities and processes for support and training of staff and students in the use of the technology enhanced learning systems are clearly defined. 4. Resources are allocated for the implementation and maintenance of IT services that support technology enhanced learning.

Table 3. Continued

	learning, for both on and off-campus environments. *Out of scope.* The pedagogical issues relating to the use of IT services is the domain of other benchmarks.		5. Experimentation with new and emerging technologies is encouraged and resourced by the institution and supported by procedure. 6. Professional development occurs for staff managing the services used to support technology enhanced learning (including new and emerging technologies). 7. The institution has robust procedures and processes in place to identify and manage risk associated with all the technology enhanced learning services. 8. Support levels and pathways for assistance for all learning technologies are clearly communicated to staff.
4. The application of technology enhanced learning services	This topic addresses the effective application of technology enhanced learning (TEL) services into courses and programs. It encompasses the underlying rationale and strategic intent, how it is embedded into teaching, how it is resourced, evaluated and advanced. The effective pedagogical application of these services is fundamental to the learning and teaching mission of the institution. Failure to apply TEL services in a pedagogically sound ways will reduce the value of the investment placed in these services and has the potential to impact	The application of TEL services is: • grounded in the institution's Learning and Teaching strategy; • informed by good pedagogical practice and research; • supported adequately; • deployed and promoted effectively; • evaluated from a number of perspectives; and • advanced appropriately. The Performance Indicators are organised to reflect these aspects of pedagogical application.	1. The application of technology enhanced learning services are grounded in the context of the institution's learning and teaching strategy. 2. The pedagogical intent of the application of technology enhanced learning services within individual courses and programs is readily apparent to teaching and support staff. 3. The pedagogical application of technology enhanced learning is based on sound educational research and guidelines (including compliance with legal requirements, accessibility, and learning designs) are readily available to all teaching and support staff.

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Table 3. Continued

	on every student and staff member. *Out of scope.* Technological, policy and administrative issues relating to the application of TEL services are the domain of other benchmarks.		4. Collegial communities exist to promote and support the use of technology enhanced learning for communicating and promoting the innovative use and its pedagogical application in learning and teaching. 5. Resources are allocated for the ongoing development of technology enhanced learning pedagogies. 6. The pedagogical application of technology enhanced learning services is sustainable. 7. The pedagogical impact of technology enhanced learning services is regularly evaluated in detail at a course and program level. 8. Evidence of the impact of technology enhanced learning is integrated into continuous improvement planning for courses and programmes. 9. Good practice examples advance the pedagogically sound use of TEL services in courses and programs.
5. Staff professional development for the effective use of technology enhanced learning	The key focus is on developing teaching staff to make effective use of a range of approaches to technology enhanced learning (TEL). Staff development activities encompass individual and group delivery, face-to-face, as well as online. Self-directed learning activities and resources are also included. Some professional development will be designed and	Quality learning and teaching is brought about where people are confident, enthusiastic, skilled and well supported, and learning experiences are designed to engage the learner and employ a variety of approaches. Engagement in professional development should not be limited by factors of physical location, equity or technological skills. This means that staff development is offered flexibly, accommodates a	1. A framework for staff development in technology enhanced learning is part of the institution's learning and teaching strategy. 2. Processes are in place and in use to identify staff development needs in support of the institution's strategy for technology enhanced learning. 3. Educational and technical expertise is used to develop quality programs and resources addressing staff development needs.

Table 3. Continued

	delivered to meet the strategic needs of the organisation, whilst other activities will be provided to meet the demands of teaching staff as they arise.	range of entry points, is evaluated and is informed by the work of related units. A good practice approach to the use of technology enhanced learning reflects an understanding of learners' characteristics and needs as required by different discipline contexts.	4. Coordination occurs between those areas providing staff development for technology enhanced learning across the institution. 5. Staff development for technology enhanced learning is resourced. 6. Staff development programs are delivered flexibly and address differing skill levels. 7. Evaluation data is used to inform the planning for continuous improvement of Staff development processes.
6. Staff support for the use of technology enhanced learning	Staff support for the use of technology enhanced learning encompasses both technical and educational support. Technical support is required to deal with problems or needs related to the technological environment, including hardware and software, communications and connections, and performance. Educational support addresses the needs of staff who want to use technologies and/or encounter difficulties while using them, and who need to be able to get ready access to and who want to maximise student learning outcomes. *Out of scope.* This benchmark does not include staff development which forms part of the more formal professional development framework – see Benchmark 5	Staff are made aware of and have access to comprehensive technical and educational support for the use of technology enhanced learning tools and services: prior to and during the implementation of the technology, in formal training sessions, on a just-in-time basis, and for troubleshooting purposes.	1. Technical and educational support is aligned with the current and emerging learning technologies being deployed by the institution. 2. Procedures are in place to identify the support requirements of staff, at individual, team and institutional levels. 3. Procedures are in place to regularly evaluate the support services and resources provided for staff. 4. Coordination occurs between those areas providing support services for staff across the institution. 5. Technology enhanced learning support services are accessible and used by staff. 6. Technology enhanced learning support services are adequately resourced. 7. Technology enhanced learning support services are promoted to staff. 8. New technology enhanced learning services are fully analysed for staff support requirements, prior to and during the adoption process.

Table 3. Continued

			9. There are procedures in place that ensure that evaluation data on technology enhanced learning support services for staff contributes to their continuous improvement.
7. Student training for the effective use of technology enhanced learning	Technology enhanced learning services are the systems and tools used by the institution to support learning and teaching. These can include the use of: required computing equipment and software; learning management systems and associated applications; library systems; cloud-based environments; mobile technologies. Aspects of an ethical approach to technology enhanced learning are also included. Student training refers to the applied use of such technologies in a learning context. It can take many forms and be provided by many people, for example through: specific training classes; self-help resources; or as part of a unit of study. Staff providing the training need appropriate skills which require alignment to the professional/staff development benchmark. *Out of Scope.* Student training does not encompass training in other aspects of learning development (i.e. general study skills).	The provision of student training for the effective use of the institution's technology enhanced learning services is aligned with the teaching approaches in use; is adequately resourced; is coordinated with other student support services; is flexible; is focused on the needs of students; covers a range of current technologies and reflects good practice in the use of technology.	1. Student training is aligned with the technologies and teaching approaches in use at the institution. 2. Student training for technology enhanced learning is adequately resourced. 3. There are procedures in place to regularly evaluate the training and training resources provided for students. 4. Coordination occurs between those areas providing training for students. 5. Student training programs are delivered flexibly and address differing skill levels. 6. Student training promotes an ethical approach to the use of social media and the technology enhanced learning services provided by the institution. 7. Evaluation data is used to inform the planning for continuous improvement of student development processes. 8. There are clearly defined pathways for students to access the training they require.
8. Student support for the use of	Support for students in the use of technology enhanced learning services is	Students are aware of and have access to effective and well-resourced support for the	1. The provision of support for students is aligned with the technology enhanced

Table 3. Continued

technology enhanced learning	defined as primarily technical but the learning context should also be acknowledged. Support should be considered in terms of the use of computers and mobile technologies; learning management systems and their associated applications; library systems, and; those cloud based systems and tools adopted by the institution. The requirements of on-campus and off-campus study should be considered.	technology enhanced learning services used by the institution. Student support is responsive to student needs; is coordinated with student training; and is constantly developing in response to changing technology.	learning services used by the institution.
			2. Student technology enhanced learning support services are resourced.
			3. There are clearly defined pathways for students to access support services and these are promoted to the student body.
			4. Support sites and resources are accessible from commonly used devices and the analytics of student usage are monitored.
			5. There are procedures in place to ensure that student support services and resources are regularly evaluated.
			6. There are procedures in place that ensure that evaluation data on technology enhanced learning support services for students contributes to their continuous improvement.
			7. Coordination occurs between those areas providing support for students.
			8. There are procedures in place to ensure there is an alignment between student training and student support.
			9. Processes are in place to determine the ongoing support requirements of students.
			10. New technology enhanced learning services are fully