Evidence for Cycle 6 Academic Audit

AQA Working Paper

March 2019

<u>Introduction</u>

The Guide to Cycle 6 Academic Audit for New Zealand universities (Matear, in prep.) includes evidence that is expected for each of the guideline statements in the audit framework. These are set out in terms of the types of expected evidence rather than the specific form of evidence as that is for the university to determine.

Cycle 6 differs from previous audits in that it is explicit that the Cycle 6 audit framework applies to all students, all delivery and all staff who teach or supervise or support teaching or supervision. Universities and audit panels will need to consider how evidence reflects this systemic or embedded nature of academic quality. It also differs in that guideline statements in the Cycle 6 audit framework are expressed using 'outcomes-orientated' language.

This working paper discusses some wider perspectives that will inform the use of evidence in Cycle 6. It considers the nature and expectations of evidence in external quality assurance by examining the types, sources and characteristics of 'good' evidence. This paper is intended to assist New Zealand universities as they prepare for their sixth cycle of academic audit by developing guidelines that can assist in the development, selection and treatment of evidence for the audit phase of Cycle 6. It should also help inform auditors as they consider evidence in Cycle 6 audits.

The importance of evidence has featured in academic audit for New Zealand universities since the first cycle (Woodhouse, 1998 (3rd Ed.)) and being "evidence-based" is an underpinning principle of the universities' approach to external quality assurance (UNZ and AQA 2013).   This was emphasised in Cycle 5, which stressed that "analysis of evidence" is central to evaluation (p24.) and drew on the Ministry of Health (2011) to define evidence as "records, statements of fact or other information which are relevant to the audit criteria and *verifiable"* [emphasis added by Cameron, 2013].

The principle of being evidence-based is common with other external quality assurance bodies internationally and guidelines for a range of institutional level quality assurance systems make frequent reference to evidence. They also describe evidence in terms of its origin, audience and characteristics – often referring to 'good' or 'quality' evidence. Despite these characterisations however, relatively little attention seems to have been paid to what constitutes 'good' evidence. This in in contrast to some other fields (most notably medicine) which have paid explicit attention to what determines whether evidence itself is 'high quality' (see, for example, Balsham *et al*., 2011).

Along with many changes impacting on higher education, the range and forms of evidence available for quality assurance are also changing and growing. The growth in learning analytics is one significant example of these changes. Ransom *et al*. (2018) include "proliferation of data" among their major changes underway in higher education. Other publications and initiatives, such as "the analytics revolution in higher education" (Gagliardi *et al.* 2018) and the QAA-Scotland (2019) Enhancement Theme "Evidence for Enhancement" also highlight this shift.

Feedback and further discussion of the matters raised in this paper is welcome and should be sent to director@aqa.ac.nz.

<u>Evidence – and other definitions</u>

Although the introduction to this working paper presented a definition of evidence, that definition highlighted differing types or forms of evidence and characteristics of evidence. More broadly, 'evidence' is defined by the Oxford Dictionary as "The available body of facts or information indicating whether a belief or proposition is true or valid" (OUP, 2018). Hutchings *et al.* (2014) draw on WASC (2014, updated 2015) in defining evidence as that which "constitutes the substance of what is advanced to support a claim that something is true" (pp. 28-29). They further differentiate 'evidence' from 'information' saying that evidence is "more intentional and purposive, more a matter of reflection and deliberation" (p.29) and "evidence responds to a community's questions and is made meaningful through analysis and interpretation relevant to that community" (p29).

Other terms which may be used in relation to evidence are described or defined below:

Information   Hutchings *et al.* (2014) describe information as "exist[ing] in a vacuum" (p.29).

Measurement "easy to define, has simple dimensions, seldom requires a definition, and usually relates to 'things you can count'" (Davis and Novak, 2012). For example, revenue in dollars.

Metric   "requires definition … usually involves a calculation or a combination of measurements and has more complex dimensions (ratios, for example)" (Davis and Novak, 2012). For example, student: staff ratios. Both students and staff numbers need to be defined as either individuals or equivalents of full-time.

Indicators   can be less precise but should include context. For example, co-curricular transcripts show progress towards achieving the graduate attributes of a qualification (or programme or course).

Analytics   Learning analytics refers to the measurement, collection, analysis and reporting of data about the progress of learners and the contexts in which learning takes place (Sclater *et al.*, 2016).

Rankings   can apply to any of the above when institutions are assessed on a common basis and results indicate the 'position' of institutions relative to others. Such assessment is unlikely to capture all of the contextual information that contributes to the rank position for an organisation.

As Cycle 6 continues the emphasis that previous cycles have placed on evidence, it is helpful to pay attention to how evidence, information and measures are defined and used. Definitions of evidence are also useful in terms of the more outcomes-oriented framing of guideline statements in the Cycle 6 audit framework.

Learning analytics

Given their potential and likelihood of increased use in academic quality assurance, some specific attention to learning analytics is warranted. While learning analytics are no longer new, their use in quality assurance has not received a great deal of attention to date, although Tak Ming Wong (2017) recognises the potential for this. This situation is likely to change rapidly (along with the use of

analytics themselves) as the latest Scottish enhancement theme – Evidence for Enhancement[1] - progresses.   The 'Evidence for Enhancement' theme pays attention to how learning analytics may be used in academic quality with learning analytics being one of the topics for collaboration in the theme (Hainey *et al.,* 2018).

Learning (or academic) analytics, as defined above, are experiencing rapid growth. They may utilise and integrate data collected from a number of information management systems (Baepler and Murdoch, 2010) including student management systems (e.g., demographic data, enrolment information, academic history and attainment), learning management (e.g., use of self-assessment tools, access of course related-materials, assessment submission times, participation in on-line discussion), library management systems (use history) and other systems (e.g., patterns of access to wifi hot spots, responses to student surveys, appeals or complaints, lab access times, recreation centre use) to gain insights into success factors for individual students, groups of students or courses/papers and programmes/qualifications. Learning analytics are used for formative, summative and predictive purposes. Much of the data they access and utilise is potentially relevant to academic quality.

Other jurisdictions, while recognising the potential of learning analytics, are also alert to challenges of the use of this data and have developed codes of conduct to guide its development and use (Sclater and Bailey, 2018).

Alongside learning analytics, universities are also making use of machine learning and artificial intelligence for some tasks that are relevant to academic quality. This includes the use of machine learning for responding to initial course advice questions from students and in assessment and processes such as plagiarism detection.

Types of evidence in academic quality

Most comment on evidence in academic audit agrees that evidence can take a variety of forms. Cycle 5 advice regarding evidence was that it included (Cameron, 2013):

- Documents such as existing policies, reports and analyses, principally from internal sources;
- Statistical evidence from internal and, where appropriate, external sources;
- Oral evidence collected during the self-review or audit process; and
- Might also derive from samples of the available information or from *tracking audit trails* [original emphasis].

Alongside the more specific examples of types of evidence, it may also be useful to take a broader perspective and consider that evidence can be:

- Pre-existing or bespoke
- Primary or secondary
- Quantitative or qualitative
- For or from other functional areas, individuals or groups

These descriptors of evidence are not mutually exclusive. For example, evidence could be pre-existing, direct, quantitative and from university planning managers.

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[1] https://www.enhancementthemes.ac.uk/current-enhancement-theme

Pre-existing or bespoke

It is anticipated that most of the evidence presented in academic audit will be pre-existing. This is consistent with the view that audit should not be an event in of itself and that it should utilise evidence that the university uses in its ongoing management of academic quality. Insofar as an audit framework should be designed to capture and elucidate aspects of academic quality that are important to universities themselves in achieving 'good' student outcomes and experience, a reasonable level of congruence between the information that a university would collect anyway and that sought for academic audit might be expected. Nonetheless the relevance of evidence presented in respect of guideline statements needs to be critiqued (see below). This can also assist in identifying gaps in evidence.

It also recognises that the audit framework is just that – a framework – and that universities may use guideline statements differently, depending on their context. Use of existing evidence also helps reduce the administrative burden of academic audit. What is important however, is that where universities do use evidence that was compiled for another purpose, the purpose be identified and the commentary address its appropriateness for the academic audit.

There are also a number of challenges associated with use of existing evidence, with the main issue being its relevance to the guideline statement. National performance indicators have been a cause of concern in this regard, particularly if they utilise what can be measured rather than being constructed to evaluate the topic of interest (Harvey 2016). Harvey (2016) also suggests that concerns with national indicators have transferred to rankings.

In the New Zealand context national indicators are mainly confined to the TEC's educational performance indicators and to a lesser extent some indicators available from the Graduate Longitudinal Survey New Zealand (glsnz) (Tustin, *et al.*, 2012) and other surveys such as the ISB and previously the AUSSE. However, national indicators are more widely used, although not without criticism, in other jurisdictions (for example QILT in Australia[2] and the National Student Survey in the UK[3]). Use of the Integrated Data Infrastructure (IDI)[4] in New Zealand also has the potential to increase both the specificity and availability of national indicators.

Primary and secondary evidence

Pre-existing evidence may also be referred to as being secondary evidence, or indirect evidence (Love, 2012). These terms should not infer that it is of less value or importance than primary or direct evidence (Stevens *et al.*, 2005). It is important that existing bodies of evidence are known and examined before committing to the collection of new evidence.

Secondary data can be further categorised into internal and external data sources (Stevens *et al.*, 2005). The main advantage of secondary data is that it is already available and may provide a longitudinal view. Potential disadvantages are that that it may be a poor fit with the guideline statement, may be dated, or that the collection parameters are not well specified. Secondary data is likely to be the main type of evidence in academic quality assurance. Therefore, it is important that institutional data are well specified and curated. The QAA (2018) in the UK have recognised that institutional data capability is of increasing importance and have issued a briefing note on "Helping providers get the most from their data". It may also be useful to recognise evidence for audit

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[2] https://www.qilt.edu.au/
[3] https://www.timeshighereducation.com/student/news/national-student-survey-2018-overall-satisfaction-results
[4] https://www.stats.govt.nz/integrated-data/integrated-data-infrastructure/, accessed 20181022

evidence as indirect as this then raises questions of for what purpose and how the evidence was developed or collected and analysed.

Bespoke evidence may also be referred to as primary, or direct, evidence. Primary evidence is that generated for a specific purpose, in a specific format and from a specific population or sample (Stevens *et al*., 2005). Collecting primary evidence brings in questions of research design and analysis. Its main advantage is that it is targeted to the question or guideline statement. However, it may be more expensive to collect and may have a more limited scope compared with secondary data sources.

Quantitative and qualitative

The distinction between quantitative and qualitative evidence is a common one in social science and often relates to differences in underlying philosophies of knowledge (for example Carson *et al*., 2001). This working paper does not attempt to explore the ontological, epistemological and methodological bases of quality assurance, except that to note that preferences expressed across jurisdictions for multiple pieces of evidence and recognition of the importance of context, probably reflect a more interpretative than positivist approach.

Academic quality assurance tends to take an inclusive (and largely atheoretic) view of types of evidence that may be used to support or assess whether a university meets a guideline statement and tends to describe relatively specific 'types' of evidence that could be used. This may be helpful at a practical level, but possibly less so when new types of evidence are developed or when evidence for new academic quality assurance requirements is required.

Both quantitative and qualitative evidence are likely to be used in academic audit. Growth in learning analytics may mean an increased use of quantitative data. While bodies of practice may constitute qualitative evidence, anecdote and opinion are not evidence – neither for universities nor audit panels.

Who is evidence for and from?

Types of evidence may also be differentiated in terms of who the evidence is for. With respect to academic audit, the main distinction to date has been between evidence for the university and evidence for auditors. Within the university, further distinctions may be made in terms of functions and purpose that evidence was collected for – for planning, reporting to government, professional accreditation, improving student learning or academic quality. Again, such distinctions may not be mutually exclusive. For the most part auditors will utilise evidence in the self-review portfolio presented by the university but may also generate their own evidence through interviews or other analyses such as "tracking audit trails" (Cameron, 2013).

As well as asking who is the evidence for, universities and audit panels might also ask who is this evidence from? A number of guideline statements in the Cycle 6 audit framework will be important for multiple groups. Evidence based on indigenous knowledge systems might be appropriate for some aspects of the Cycle 6 audit framework. NZQA have developed Te Hono o te Kahurangi as a quality assurance framework for Māori tertiary education organisations and Te Mana Raraunga (2018) have developed Principles of Māori Data Sovereignty. Cycle 6 academic audit and the audit framework itself reflect a western view of academic quality and universities and panels should be open to how academic quality might be expressed and demonstrated for ākonga Māori and Māori staff.

Quality of evidence

The above discussion has focussed on types of evidence and who evidence is for. It has not explicitly considered what constitutes 'good' evidence – although some of the caveats regarding types of evidence begin to address this question. Examining guidelines from other jurisdictions also yields a number of ways in which evidence can be characterised as 'good'.

WASC (2015 and 2002) provide five principles of good evidence. Evidence should be:

1. Relevant
2. Representative
3. Verifiable
4. Cumulative
5. Actionable

Other jurisdictions reflect and add to these criteria, in advising that evidence should be:

- contextual and holistic (QAA-Scotland, 2017)
- triangulated (Cameron, 2013).

Scheffel *et al.* (2014) have suggested quality indicators for learning analytics. Other work by Berger *et al.,* (2018) suggest that learning analytics have special characteristics including the complexity of learning as a trait, the temporal and changing nature of student behaviours and ethical considerations of intervention-based research.

That evidence should be relevant is reflected in advice from a number of jurisdictions (WASC, 2015; HKCAAVQ, 2018). WASC (2015) suggest that relevance implies validity and that institutions should explain the connection between the evidence and the (in their case) standard.

Relevance of evidence is likely to have two components with respect to Cycle 6. The first is how well (face validity) the evidence addresses the substantive topic of the guideline statement; and the second the extent to which it reflects the embedded nature of academic quality sought in Cycle 6. This embedded dimension is reflected in the scope of the Cycle 6 audit framework which extends to all students, all delivery and all staff who teach or supervise or support teaching or supervision.

Evidence reflecting the embedded or systemic nature of quality practices may mean that the representative or typical criterion suggested by other EQA bodies including WASC (2015) or the sampling approach indicated in the Guide to Cycle 5 (Cameron, 2013) needs to be considered further, or differently. Cycle 6 academic audit will be seeking evidence that the guideline statement is met across a university and representative evidence is unlikely to be able to demonstrate this. Rather than seeking to provide representative evidence in this sense, universities should consider how evidence reflects all students, all delivery and all staff who teach or supervise or support teaching or supervision. This could mean providing indicators or measures of dispersion, as well as central tendency, or providing evidence for each of the groups of students or staff or forms of delivery that are appropriate for the university.

An initial assessment might be that learning analytics data could assist in providing evidence of embeddedness. However, caution may need to be exercised as that may involve aggregating learning analytics data in ways that may not be appropriate as much learning analytics data will be intended to operate at the scale of the individual student.

Reconsidering the representative nature of evidence in the context of learning analytics which emphasises large volumes of data with potentially high levels of change, suggests that

'representative' in Cycle 6 should capture the direction of change. Knowing whether evidence reflects an increasing or decreasing trend will be valuable to auditors and universities themselves and will help counter the 'point-in-time' criticism of academic audit. This is particularly relevant for Cycle 6 as there is a longer time period between audit in Cycle 5 and 6 than between previous audit cycles.

The ability to verify evidence is also a common feature of other jurisdictions. WASC (2002) suggest that this characteristic is associated with reliability of evidence or data and focus on replicability. The term however, is used in a variety of ways and Cycle 5 in New Zealand (Cameron, 2013) associated verification with triangulation. The two treatments are compatible although WASC is concerned with the ability to reproduce the evidence and transparency of the evidence chain, whereas Cameron (2013) suggests that multiple pieces of evidence be used to support a claim.

This approach reflects a recognition that aspects of academic quality (and academic quality itself) may be complex phenomena that cannot be directly observed, and multiple perspectives will strengthen assessment. However, as the Cycle 5 and Cycle 6 audit frameworks have moved to the use of guideline statements, the components of academic quality are set out more clearly. If relevant evidence is provided in support of guideline statements, this may lessen the need to seek multiple sources of evidence, although doing so is likely to strengthen the evidence in support of a guideline statement. WASC (2002) refers to this as evidence being cumulative.

In practice, audit panels are unlikely to be able to reproduce evidence. They can however, explore a guideline statement from a different perspective by asking questions of interviewees, either singly or in groups. While triangulation by audit panels was by no means new, a review of Cycle 5 processes (Matear 2018) suggested that audit panels should be explicit about identifying a set of questions that are triangulation/validation questions. This would be consistent with the QAA-Scotland (2017) suggestion that external quality assurance, such as academic audit, can "verify the effectiveness of institutions' internal quality assurance" (p.30).

Finally, WASC (2002) suggests that good evidence should be actionable "such that the institution is able to use this information to improve what it does" (p.12). This is consistent with the enhancement-led approach to quality assurance adopted by New Zealand universities. It is also consistent with the Cycle 6 scope of all students, all delivery and all staff who teach or supervise or support teaching or supervision and WASC (2002) suggest "that both the analysis and presentation of evidence must be appropriately disaggregated to reveal underlying patterns of strength and weakness, or to uncover specific opportunities for intervention and improvement" (p.12).

Disaggregation is discussed above in terms of the need to demonstrate embeddedness of quality practices. The reference to patterns however is valuable as while academic audit occurs at a point in time, evidence should include changes over time. Growth in availability of data as potential evidence presents particular opportunities and challenges here.

QAA-Scotland use two further descriptors for evidence – that it should be contextual and holistic. Cycle 6 Academic Audit also places emphasis on the importance of context, meaning that the audit should reflect the characteristics and priorities of the university being audited. While the same audit framework applies to all universities and audit panels and the guideline statements set out expectations of outcomes and standards that a university of good international standing would be expected to demonstrate, these are not fixed minimum standards, but are relative and dynamic and universities will differ in the emphasis that they place on guideline statements.

In terms of being holistic, the scope of Cycle 6 encompasses all students, all delivery and all staff who teach or supervise or support teaching or supervision. While universities and audit panels will

address all guideline statements, academic audit will not provide a summative single assessment of the academic quality of a university as the methodology does not support such an assessment.

Another approach which is used to reach a summative assessment of an institution is that of rankings and in many cases the assessment that is made is a 'whole-of-institution' one. Sub-institution-level rankings, for example for field of study or ranking components (e.g., teaching and learning or internationalisation) are increasingly being published.

The merits and challenges of rankings have been the subject of a great deal of commentary. However, from an academic quality perspective, where rankings are used as evidence they constitute pre-existing evidence and the relevance of that evidence needs to be assessed in the same way as other pre-existing evidence, including taking the way in which it was developed and for what purpose into account.

Criteria for considering evidence

This paper has outlined types of evidence and considerations for provision of evidence in Cycle 6 Academic Audit. This final section suggests criteria for universities in to consider in presenting evidence and audit panels in reviewing evidence.

1. Evidence in Cycle 6 will be presented in the context of an individual university. What is appropriate evidence for one university may not be for another.
2. Both universities and audit panels should anticipate that the majority of evidence presented in Cycle 6 will be pre-existing evidence.
3. Evidence should be explicit and sufficient, relevant, representative, verifiable, cumulative, actionable, contextual and holistic and able to be triangulated.
4. The most important criterion for evidence is relevance. In Cycle 6 this means relevance of the evidence to the guideline statement and relevance to the embedded or systemic nature of evidence.
5. Evidence can be strengthened by drawing on multiple perspectives and sources from across the university.
6. Tensions are likely to exist between the pre-existing nature of evidence and relevance of that evidence, and universities may need to both explain how the tension has been resolved and use other criteria to determine whether the evidence is indeed appropriate for the guideline statement.
7. Where possible and appropriate, evidence should reflect a longitudinal component so that universities and audit panels can appreciate the direction of change.
8. Universities and audit panels should be open to and expect that evidence may take a variety of forms and some evidence may be based on indigenous knowledge systems.

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