A technology solution for providing professional learning support in peer review

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The higher education (HE) context is constantly changing shape at the global level due to the massification of HE and the rapid growth of HE providers. A direct consequence is that government quality agencies are making explicit the importance of external referencing and peer review to ensure the comparability of standards across the HE sector. In Australia, the national government recently endorsed the Higher Education Standards Framework (HESF) which puts the focus on peer review, external referencing and benchmarking. Standard 5.3.4 which is about the regular external referencing of courses, including the comparison of student data, assessment methods and grading, has significant resource implications for the HE sector. Education Services Australia (ESA), a not-for-profit company owned by the Australian Education Ministers, commissioned a paper (Krause, 2014) to explore cost-effective solutions for the HE sector. This paper will provide an overview of the proof-of-concept trial to look for technology solutions that: 1) provide streamlined, sustainable and cost effective solutions to support interchange of good practice around core business operations, with a particular on assuring the quality of program level outcomes and assessment and; 2) address the quality assurance and standards imperatives for the HE sector.

Keywords: peer review, assessment, academic support, online resource

Introduction

The higher education (HE) context at the global level is experiencing substantial change and disruption, including the massification of higher education and the rapid growth of higher education providers; the increasing level of delivery of online programs (e.g. MOOCs) and the sharpened focus by governments on the need for a robust regulatory framework for the sector in relation to monitoring quality and standards. Furthermore in Australia, the proposed deregulation of fees has contributed to the growing public awareness that courses deliver high quality outcomes for students and that these courses are comparable across the sector. Three government quality agencies have recently set out explicit expectations to ensure the comparability of standards across HE providers.

- In Australia, the Tertiary Education Quality and Standards Agency [TEQSA] is focused on peer review in the revised Higher Education Standards Framework (HESF, 2014) which outlines the requirements for benchmarking and external referencing [Standards 1.4.1; 5.3.1; and 5.3.2];
- In New Zealand, the Academic Quality Agency (AQA) for the Cycle 5 Academic Audit Framework is underpinned by the key principles of peer review which is

evidence-based, externally benchmarked and enhancement led, including benchmarking programmes (3.5) and the equivalence of learning outcomes (3.7) (AQA, 2013).

- In the United Kingdom (UK), the Quality Assurance Agency for Higher Education [QAA] and the UK Quality Code for Higher Code are focused on Subject Benchmark Statements for setting and maintaining academic standards (Part A) and external examining (Part B7) (QAA., 2012a).

In response to these quality assurance expectations, HE organisations (such as the Higher Education Academy (HEA) in the UK; the Office for Learning and Teaching (OLT) in Australia; and Ako Aotearoa in New Zealand) are increasingly focused on enhancing and improving academic quality through capacity building projects to support academics in external referencing and peer review. A recent review of OLT projects focused on academic standards (Freeman & Ewan, 2014) found evidence of improved assessment practices with the development of threshold learning outcomes (TLOs); the establishment of networks; and the important role Deans Councils play in leading efforts on academic standards. Yet, they also found three noticeable gaps: 1) the absence of non-self-accrediting and private providers in these academic quality projects; 2) the lack of an evidence base for quality assurance; and 3) the lack of external referencing (Freeman & Ewan, 2014).

Similarly, a recent report in the UK, commissioned by the Higher Education Funding Council for England (HEFCE, 2015 p.11), on the review of external examining arrangements, positively found that external examining does offer a degree of externality to higher education assessment by providing: 1) a 'critical friend' role; 2) providing a check on assessment processes; 3) the sharing of good practice; 4) and the development of academic staff. The report (HEFCE, 2015, p. 12), however, found little evidence to support the view that external examiners are an 'effective means' to safeguard academic standards. Recommendations included: 1) retaining the external examiner system, but enhancing it through more systematic training in standards; 2) , assessment literacy and external judgement; and 3) taking part in regular calibration events to support and enhance discipline standards. The report also focused on the importance of HE institutions focusing on the professional development of staff as well as providing appropriate resourcing. Of particular interest was the use of online software to enable blind peer review.

There are currently four models of peer review of assessment used in Australia: 1) the Quality Verification System (Go8, 2014); 2) the Academic Calibration Process (ACP) (IRU, 2012); 3) Achievement Matters (Watty et al., 2013); and 4) the Interuniversity Moderation of Coursework Project (Krause, Scott, Aubin, Alexander, et al., 2014). The QVS model was developed and run by the Group of Eight (Go8) universities to maintain and lead the improvement of Go8 universities academic standards. The QVS model has 4 key features: 1) an experienced, non-blinded peer is selected randomly from a panel by the secretariat; 2) there are between 1-5 work samples in each grade band selected from two final year units; 3) grades of work samples are verified by peers using Go8 benchmarks; and 4) the home university receives feedback on unit content and assessment design and criteria, including a grade verification report (agree/too high/too low) and the peer reviewer makes overall judgement as to appropriate, some risk or immediate action required. The ACP involves 4 key features: 1) the home university is involved in the selection of experienced, non-blinded peers from the Innovative Research Universities (IRU) database; 2) 12 work samples (3 samples across 4 grade bands) are selected from capstone units in the final year; 3) the grades are verified by a peer; and 4) the home university receives feedback on unit content and

assessment design and criteria; there is a grade verification report and the peer reviewer makes an overall judgement of the unit/subject.

The third model, the Achievement Matters Project (Watty et al., 2013), was developed to enable the benchmarking of learning outcomes against national thresholds for accounting graduates across multiple institutions. The process has 5 key features: 1) there is a calibration of a peer group to national threshold standards in accounting; 2) there is a random selection of 2 blinded external peers and 1 home peer; 3) there is provision of 5 de-identified items of student work randomly selected from across grade bands to peers; 4) peers calibrate assessment tasks and tasks are graded against discipline standards; and 5) the home university receives a report providing feedback and recommendations. A key feature of this model that is not included in other models is a calibration process that the reviewers undertake prior to providing the final peer review of the assessment material. Calibration occurs around the assessment task, the student work samples and then benchmarked against agreed threshold standards. Reviewers judge the assessment task and then assess the sample of student work and submit their judgements and rationale using an online Self and Peer Assessment Resource Kit (SPARK). After comparing with other peer reviewers online, the peer reviewers participate in a face-to-face workshop focused on the judgement and justification of the reviews until consensus is reach. The last model of peer review of assessment is the Interuniversity Moderation Project (Krause, Scott, Aubin, Alexander, et al., 2014) which has 4 features: 1) two experienced, blinded peers selected from two partner universities; 2) de-identified unit material and 4 randomly selected work samples from across grade band from final year unit; 3) peers grade work samples against external reference points using home university criteria; and 4) the home university receives graded work samples and feedback on unit content, assessment and design.

An important consideration when assuring achievement standards is determining the quality of assessment that is being assessed, that is, the fitness *of* purpose of assessment, before examining *how* well the assessment was undertaken (that is, the fitness-for-purpose of assessment tasks) (Scott, 2015). This requires backward mapping by using a peer reviewed, validated set of program level outcomes which has been tested internally and externally through peer review against evidence from multiple reference points. Scott (2015) identifies the following 'six rights' when assuring achievement standards: 1) the right outcomes; 2) the right mapping; 3) the right assessment; 4) the right grading and rubrics; 5) the right marker calibration; and 6) the right learning design and resources. Scott (2014) also places emphasis on validating program level outcomes against a set of consensually agreed and weighted set of reference points to confirm the quality of graduate outcomes. Some examples of reference points include the Australian Qualifications Framework (AQF) (AQF, 2013); graduate attributes; professional accreditation standards and benchmarking against other program outcomes.

The use of external reference points, however, does raise some important points for consideration: 1) there is a range of reference points that can be used; 2) not all reference points are of equal standing; 3) the list of reference points should not be prescriptive or purport to be exhaustive; and 4) reference points should be carefully contextualised (NLOSF, 2013). With emphasis now on the comparison of external reference points, this in turn places the onus on HE institutions to develop transparent and efficient mechanisms and resources for demonstrating student achievement of learning outcomes. When discussing effective support mechanisms and resources for academics for peer review of assessment, key points raised include:1) it is a real burden to collect student assessment data as evidence in benchmarking;

2) good practice guides are essential; and 3) the resource implications cannot be ignored (NLOSF, 2013).

The increasing value of university and discipline networks comes to the fore in the assurance of achievement standards. For example, the Discipline Scholars Network has been critical in setting disciplinary standards across disciplines in Australia [such as Architecture; Arts, Social Sciences and Humanities; Building and Construction; Business, Management and Economics; Creative and Performing Arts; Education; Engineering and ICT; Environment and Sustainability; Health; Law and Science]. Both the Group of Eight (Go8) and the Innovative Research Universities (IRU) in Australia have set up peer review of assessment processes within their university networks. Furthermore, findings from an OLT Network Grant Project (Booth et al., 2015) on peer review of assessment networks clearly demonstrated the need for a national network to support those HE institutions which are non-aligned to university networks in using peer review of assessment to enhance and assure the quality of both the inputs and outputs of assessment. In seeking a national robust approach to internal and external peer review of assessment a number of tensions emerged during the project. The points of tension include

- *Sector*: collaboration vs competition; compliance vs quality enhancement/best practice
- *HE institution*: light touch, consistent process vs workload and scalability; resourcing vs significant budget cuts
- *Discipline*: Enhancement and value of disciplinary communities vs aligning discipline to institutional priorities; professional development vs costs implications
- *Individual:* recognition and support for course/program and/or discipline coordinator vs workload and performance management. (Booth, Beckett, & Saunders, 2015)

Most importantly, the cost implications in resourcing the peer review of assessment by HE institutions and disciplinary groups was clearly a matter of concern. The costs include consideration in paying honorariums; providing training to institutional coordinators and academics in peer review; and establishing efficient, online resources for peer review of assessment.

This paper argues that the development of online resources cannot be sustainable unless it is linked to a professional community of practice. The Peer Review of Assessment Network (PRAN) Project (Booth et al., 2015) recommended the establishment of a College of Peers process as a mechanism of support for a national network in peer review of assessment. The trial of an online peer review tool needs to be undertaken in alignment with a sustainable sector wide model, a College of Peers process. The College of Peers process is about supporting different disciplines and HE academic networks to establish peer review processes but also supporting them in a coordinated way through professional development opportunities in peer review for different purposes such as validation, accreditation, calibration and promotion (HEQC, 1997; Ramsden, 2009).

Methodology

To provide some background information about how this proof-of-concept project originated, the University of Tasmania (UTAS) was a participant in the Inter-University Moderation Project (Krause, Scott, Aubin, Angelo, et al., 2014). A key lesson learnt was the need for an

online tool and assessment repository to improve the efficiency of the peer review process as well as provide a secure place to store data. UTAS developed an internal online peer review tool and database which was tested in 2013 by five universities using 13 units in literacy, numeracy and early childhood (Charles Sturt University, Curtin University, Western Sydney University, Griffith University and UTAS). Furthermore in 2014-2015, testing took place with four HE institutions with business, information systems and psychology (Kaplan, Swinburne University of Technology, Western Sydney University and UTAS). Feedback from these trials included the addition of these functional requirements: 1) automatic reports for HE institutions for reporting purposes; 2) ability to send out reminders to peer reviewers/reviewees to complete the reviews; 3) the ability for the institutional coordinator to have oversight of the progress of all institutional peer reviews; and 4) the ability to include training in the peer review of assessment. UTAS, used this feedback to inform the development of a proof-of-concept plan with Dialogue, a local IT company, to scope a national online peer review tool which would include different users and different functional requirements. One of the key issues identified during the proof-of-concept plan was scalability and how we could implement the online peer review tool at the national level which in turn meant massive resource implications.

In 2014, Education Services Australia (ESA), commissioned a scoping paper (Krause, 2014), to identify options for connecting technology solutions with learning outcomes in HE. ESA, a not-for-profit company owned by all Australian Education ministers, has longstanding experience and expertise in the school sector in developing online resources. In 2015, ESA undertook a commissioned a one year scoping project to explore technology solutions that: 1) provide streamlined, sustainable and cost effective solutions to support core business operations; and 2) enable them to address the quality assurance and standards imperatives inherent in the HE regulatory environment. Feedback was also sought from the OLT, Emeritus Professor Geoff Scott on his national Senior Teaching Fellowship (OLT) and Dr Sara Booth, project leader of the PRAN project.

In 2015, both UTAS and ESA have collaboratively engaged in bringing this proof-of-concept project together. Four principles underpin the scoping exercise for engaging with the HE sector. These principles are:

1. Context-sensitive
2. Streamlined, efficient, cost-effective, sustainable
3. Fit for purpose
4. Engaged (Krause, 2014).

The first principle addresses the need to be aware of a HE context characterised by heightened competition and deregulation of university places. HE institutions are looking for technological solutions that enable them to be both agile and flexible so as to maximise their competitive edge, whilst demonstrating compliance with regulatory frameworks such as the revised Higher Education Standards Framework. The second principle is about ensuring that technology-based tools, resources and systems provide for streamlined, cost-effective, efficient and sustainable solutions. The third principle recognises the range of HE providers across the HE sector that is fit for purpose. Higher education providers include universities, non-university self-accrediting providers and non-self-accrediting providers. All of these HE institutions are subject to quality and accountability requirements. The last principle is about recognising the importance of engaging with the HE sector as part of the consultation process. Stakeholder groups that would find value in using the online peer review tool include universities, private providers and Deans Councils.

The methodology used for this project involves eight phases.

- *Phase 1:* Development of a proof-of-concept online peer review tool. The online peer review tool product development was undertaken from March-December, 2015 by technical support staff at ESA. Key deliverables include Windows environment set up; reviewer/reviewee survey types; survey rendering; user stories, test scripts; introductory texts; user manual; interface design; and continuous product development.

- *Phase 2*: Pilot project to test the proof-of-concept online peer review tool with stakeholder groups and collect feedback on how to improve these resources.

- *Phase 3:* Set up forums and workshops in liaison with Higher Education Services (HES) to support academics and HE institutions in peer review.

- *Phase* 4: Dissemination of findings from the proof-of-concept project with key stakeholders in the HE community.

- *Phase 5:* UTAS and ESA to set up an organisational support structure, business plan and registration process for future subscribing institutions and Deans Councils to use the peer review tool.

- *Phase 6*: UTAS to lead the coordination of support for the College of Peers process, not unlike Bristol University with the Economics Network by providing an expansion of PRAN website, emails and communications, web resources and forums.

- *Phase 7:* Liaise with national and international HE organisations such as the QAA, AQA, Ako Aotearoa, HEA, TEQSA, and Universities Australia to set up national and international linkages in peer review.

- *Phase 8:* Develop online resources in peer review [assessment and teaching], including international journal in peer review and a training package on how to give peer review [working with HERDSA, OLT Fellows, CADAD and ACODE].

Initial findings

Phase 1: Development of a proof-of-concept online peer review tool

Phase 1 was critical in the development of a proof-of-concept online peer review tool. ESA built on previous experience in modular driven design and development, leveraging communication and messaging protocols developed for teaching and learning. Figure 1 below provides a snapshot of the home page for the peer review tool which will include in a later version a presentation on how to give consistent feedback on peer review of assessment. Phase 1 was informed from feedback gathered after the testing of the UTAS online tool which found that academics wanted training in how to provide consistent feedback in peer review of assessment, not unlike the research process.
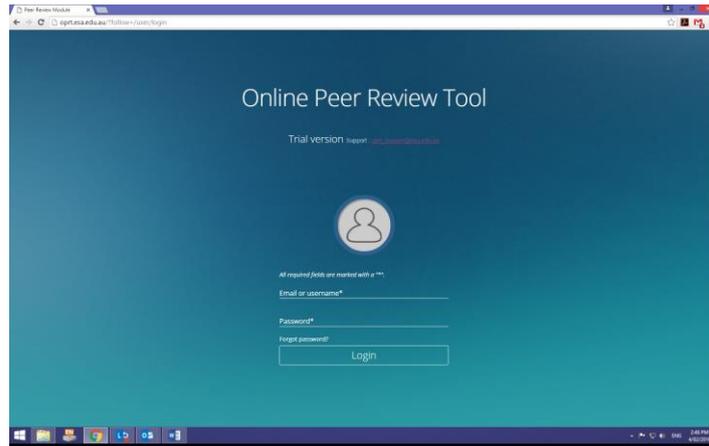
Figure 1: Home page

The next key feature of the online peer review tool outlines the management of the peer review process which includes the roles of institution coordinator, review manager and review coordinator. One of the challenges in managing the peer review of assessment across HE insitutions is the enormous amount of data [such as unit outlines, student work samples, assessment rubrics and feedback] to coordinate and collate across individual HE institutions as well as across other HE insitutitons. Feedback from the testing of the UTAS online peer review tool [which was a manual process] as well feedback sought in the initial development of the ESA online peer review tool asked that the coordination process be automated with timely reminders sent out via the tool. The coordination process has 5 key phases: 1) initialisation of the review application; 2) selection of reviewers; 3) ongoing reviews; 4) submission of academic feedback by the reviewers and; 5) review application completion.
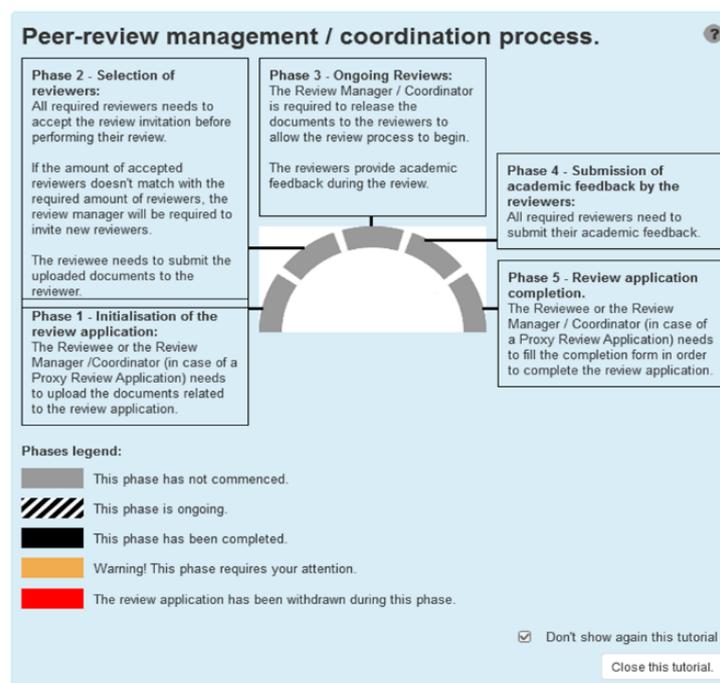

Figure 2: Peer review management process

Depending on the number of reviews undertaken, the online peer review tool has the capacity to provide a snapshot on the status of all reviews to ensure that the institutional coordination is undertaken in a timely, coordinated way [see Figure 3 below].

Figure 3: Status of peer reviews

Phase 2: Pilot project to test the proof-of-concept online peer review tool

Phase 2 has involved the coordination of different HE providers to test the online peer review tool. These HE providers were invited to participate through the Peer Review of Assessment Network (Booth et al., 2015). This pilot project involved the development of a staged process, involving both an Alpha trial and Beta trial for testing to gather feedback from a range of stakeholders. Table 1 lists the HE institutions involved in the pilot project.

Table 1: Stakeholder Groups involved in testing

Stakeholder Groups involved in testing	Disciplines
Group 1: RMIT University, Queensland University of Technology, Curtin University, University of Wollongong	Fashion Design Engineering
Group 2: Edith Cowan University ,University of New England, Central Queensland University, Western Sydney University, Swinburne University of Technology	Range of disciplines
Group 3: Council of Deans in Nursing and Midwifery (CDNM): Southern Cross University, The University of Newcastle, Edith Cowan University, Griffith University, RMIT University, University of Tasmania, Federation University Australia, University of South Australia, The University of Notre Dame Australia	Research unit in nursing
Group 4: Australasian Council of Deans of Information and Computing Technology (ADICT): under discussion	Groups of sub-disciplines in ICT
Group 5: Council of Deans of Engineering: under discussion	To be confirmed
Group 6: AAIPE and Top Education: under discussion	To be confirmed
Group 7: Eastern College of Australia, Tabor Adelaide, Harvest Bible College, Avondale	Theology, education
Group 8: Avondale and Charles Sturt University	Education

Testing with the eight HE stakeholder groups will take place from February to May, 2016. Work is currently underway with each of the stakeholder groups to identify: the institutional coordinator, the model of peer review that they will be using; the timing for testing; the number of units and unit codes to be tested; and the names of the peer reviewers/reviewees. ESA will be providing professional development to each of these stakeholder groups as well as providing detailed guidelines and a checklist on how to use the online peer review tool. UTAS will be providing professional development on the different models of peer review and supporting HE institutions to use the online tool. An evaluation survey has been developed to seek product development feedback on the following areas: useability of the online peer review tool; testing process; and academic support process.

Phased 3-8: Next steps

The next six phases involves establishing a national support mechanism for peer review across the Australian HE sector. UTAS is working closely with the two not-for-profit organisations, HES and ESA, to develop support mechanisms to operationalise peer review for both universities and private providers. It also is about working with other HE organisations and Deans Councils to identify key resources and expertise in peer review. This national project is working towards addressing the gaps in exernal peer review: 1) the absence of non-self-accrediting and private providers in these academic quality projects; 2) the lack of an evidence base for quality assurance; and 3) the lack of external referencing (Freeman & Ewan, 2014).

Conclusion

This paper has outlined the development of a national online peer review tool and subsequent alpha and beta trials to support the comparability of achievement standards across the HE sector. It has also outlined the other phases which are part of a much broader national project to support academics in peer review of assessment. It is recognised that the HESF standard, particularly 5.3.4 has significant resource implications for the sector, however, more importantly it is critical that HE organisations work collaboratively to develop a national support mechanism which is accessible, efficient and meaningful for all involved, with the ultimate goal of improving student learning outcomes.

References

AQA. (2013). *Cycle 5, Academic Audit Framework*. Wellington, New Zealand. Retrieved from http://www.aqa.ac.nz/sites/all/files/AQA%20Cycle%205%20Framework%20Jan2013.pdf.

AQF. (2013). *Australian Qualifications Framework*. South Australia: Australian Qualifications Framework Council. Retrieved from http://www.aqf.edu.au/wp-content/uploads/2013/05/AQF-2nd-Edition-January-2013.pdf.

Booth, S., Beckett, B., Saunders, C., Freeman, M., Alexander, H., Oliver, R., Thompson, M., Fernandez, J., & Valore, R. (2015). *Peer review of assessment networks: Sector-wide options for assuring and calibrating achievement standards within and across disciplines and other networks*, Report prepared for the Office for Learning and Teaching, Australia Government.

Booth, S., Beckett, J., & Saunders, C. (2015). Peer review of assessment network: Supporting comparability of standards. *Quality Assurance in Education [in press]*.

Freeman, M. K., & Ewan, C. (2014). *Good practice report: Assuring learning outcomes & standards*. Sydney: Office for Learning and Teaching, Australian Government.

Go8. (2014). *Quality Verification System -Assessment Review Guidelines*. ACT.

HEFCE. (2015 p.11). *A review of external examining arrangements across the UK*. UK: Higher Education Academy.

HEFCE. (2015, p. 12). *A review of external examining arrangements across the UK*.
    UK: Higher Education Academy.

HEQC. (1997). *Graduate Standards Programme: Final Report (2 vols)*. In H. E. Q. Council (Ed.). London.

HESF. (2014). *Higher Education Standards Framework*. Australian Government. Retrieved from, http://docs.education.gov.au/node/37863

IRU. (2012). *Academic Calibration Project*: Innovative Research Universities.

Krause, K-L. (2014). *Education Services Australia: Options for connecting technology solutions with learning outcomes in higher education*.

Krause, K-L., Scott, G., Aubin, K., Alexander, H., Angelo, T., Campbell, S., . . . Vaughan, S. (2014). *Assuring final year subject and program achievement standards through inter-university peer review and moderation*. Sydney: Office for Learning and Teaching, Australian Government.

Krause, K-L., Scott, G., Aubin, K., Angelo, T., Campbell, S., Carroll, M., . . . Vaughan, S. (2014). *Learning and Teaching Standards Project: Inter-university peer review and moderation of coursework: OLT Project*.

NLOSF. (2013). National Learning Outcomes Standards Forum. An initiative of the Discipline Scholars Network. Retrieved from http://disciplinestandards.pbworks.com/w/file/fetch/70098289/Forum9Aug 13_Pre-reading_Background.pdf

OLT. (2015). 2014 OLT National Senior Teaching Fellow-Emeritus Professor Geoff Scott. Retrieved from http://olt.gov.au/olt-national-senior-teaching-fellow-geoff-scott

QAA. (2012a). *The UK Quality Code for Higher Education, Subject Benchmark Statements, Part A: Setting and maintaining academic standards*. Gloucester, UK: Retrieved from http://www.qaa.ac.uk/assuring-standards -and-quality/the-quality-code/subject-benchmark-statements

Ramsden, P. (2009). *The future of higher education teaching and the student experience*: John Denham MP, Secretary of State for Innovation, Universities and Skills: Department of Innovation Universities and Skills.

Scott, G. (2014). *Assuring the quality of achievement standards in higher education: Educating capable graduates not just for today but for tomorrow*. Paper presented at the Peer Review of Assessment Network Forum, Park Royal Melbourne Airport, Melbourne.

Watty, K., Freeman, M., Howieson, B., Hancock, P., O'Connell, B., De Lange, P., & Abraham, A. (2013). Social moderation, assessment and assuring standards for accounting graduates. *Assessment & Evaluation in Higher Education, 39*(4), 461-478.