A TECHNOLOGY SOLUTION FOR THE HE SECTOR ON BENCHMARKING FOR QUALITY IMPROVEMENT PURPOSES

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The aim of this paper is to provide an overview of the progress of a proof-of-concept trial of an online peer review tool with 17 universities, 6 private providers and 3 Deans Councils in Australia. The proof-of-concept trial was commissioned by Education Services Australia (ESA), a not-for-profit company owned by Australian Education Ministers, to explore options in the higher education (HE) sector. The aim of the proof-of-concept trial was 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 focus on assuring the quality of program level outcomes and their assessment and; 2) address the quality assurance and standards imperatives in the higher education sector. This trial is part of a larger national project but this paper will focus on the first two phases of a 7 phase project.

Key words: benchmarking, standards, quality improvement, quality enhancement, online support, reference points

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, these being:

- In Australia, the Higher Education Standards Panel and the Tertiary Education Quality and Standards Agency [TEQSA] are focused on the proposed, 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); and
- 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.

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 a 'critical friend' role; providing a check on assessment processes; the sharing of good practice and the development of academic staff. But the report (HEFCE, 2015, p. 12) also found little evidence to support the view that external examiners are an 'effective means' to safeguard academic standards. Recommendations include retaining the external examiner system, but enhancing it through more systematic training in standards, assessment literacy and external judgement and 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 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. Key areas for discussion on resources 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 importance of university networks comes to the fore in the coordination and 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]. Furthermore, findings from an Office for Learning and Teaching (OLT) Network Grant (Booth, 2014) 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 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 to how this proof-of-concept project originated, the University of Tasmania (UTAS) was a participant in the Inter-University Moderation by Coursework Project (Krause, Scott, Aubin, Angelo, et al., 2014). One of lessons learnt in participating in this project was the importance of an online peer review tool to improve the efficiency of the peer review process as well as provide a secure place for the storage of data. UTAS went onto to develop an internal online peer review tool and database which was tested in 2013 by five universities (Charles Sturt University, Curtin University, University of Western Sydney, Griffith University and UTAS) as well as in 2014-2015 testing took place with 4 HE institutions (Kaplan, Swinburne University of Technology, Western Sydney University and UTAS). Feedback received on how to improve the online tool included: 1) providing 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 have training in the peer review of assessment. UTAS further developed a proof-of-concept plan with Dialogue, a local IT company, to scope a national online peer review tool which would enable different functional requirements. One of the key issues in scaling this up to the national level was the considerable cost 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, with longstanding experience and expertise in the school sector in developing online resources undertook a commissioned scoping project to explore technology solutions that provide streamlined, sustainable and cost effective solutions to support core business operations and to enable them to address the quality assurance and standards imperatives inherent in the HE regulatory environment. Feedback was 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 proposed, 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 case put forward by ESA is an online tool that can be used by two or more HE providers to engage in external referencing and benchmarking of academic standards and assessment outcomes.

The methodology used for this project involves 7 phases of development:

- *Phase 1:* Development of a proof-of-concept online peer review tool and clearinghouse of good practice in assessment. The online peer review tool product development was undertaken from March-November, 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 (February-May, 2016);
- *Phase 3*: Dissemination of findings from the proof-of-concept project with key stakeholders in the HE community;
- *Phase 4*: 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 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:* 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]; and
- *Phase 7:* Liaise with Higher Education Services, a not-for-profit organisation to set up forums and workshops for professional development in peer review. Liaise with national and international HE organisations such as the QAA, AQA, Ako Aotearoa, TEQSA, and Universities Australia to set up national and international linkages in peer review.

Discussion

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

Phase 1 was critical in developing a proof-of-concept peer review tool. ESA built on previous experience in modular driven design and development, leveraging communication and messaging protocols developed for teaching and learning. Particularly important was the development of the online peer review tool including the benchmarking tool, networks, and database of good practice. The website will include a presentation on how to give consistent feedback on the peer review of assessment [which will be completed in Phase 6]. 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.
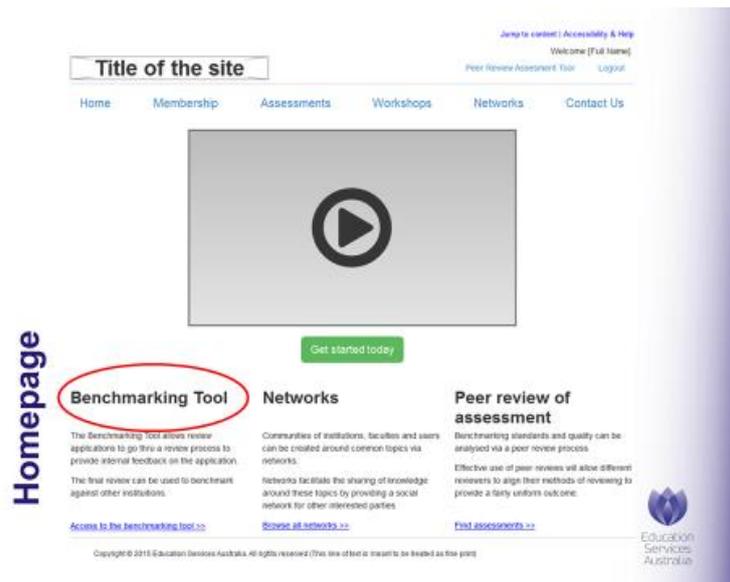
Figure 1. Home Page

The next key feature of the online peer review tool outlines the management of the peer review process which is aligned to the role of institutional coordinator [or peer review manager]. One of the challenges in organising 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.
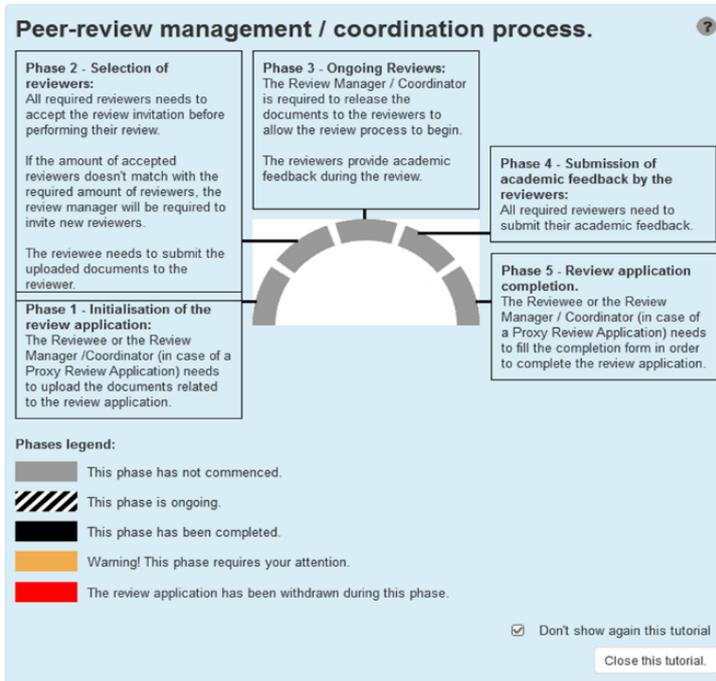
Figure 2. Peer Review Managmeent Process

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].
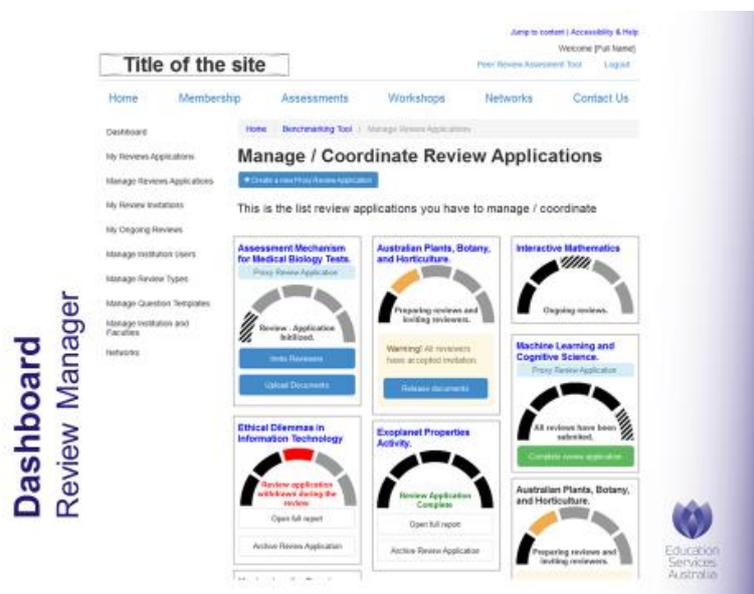

Figure 3. Status of Peer Reviews

The online peer review tool also has the capacity for academics to search good practice in assessment by field of education, discipline and assessment. See Figure 4 and 5 for a snapshot of the database searchable at the field of education level and the unit level. The

online peer review tool is a recognised gap in the HE sector in the sharing and comparing assessment.
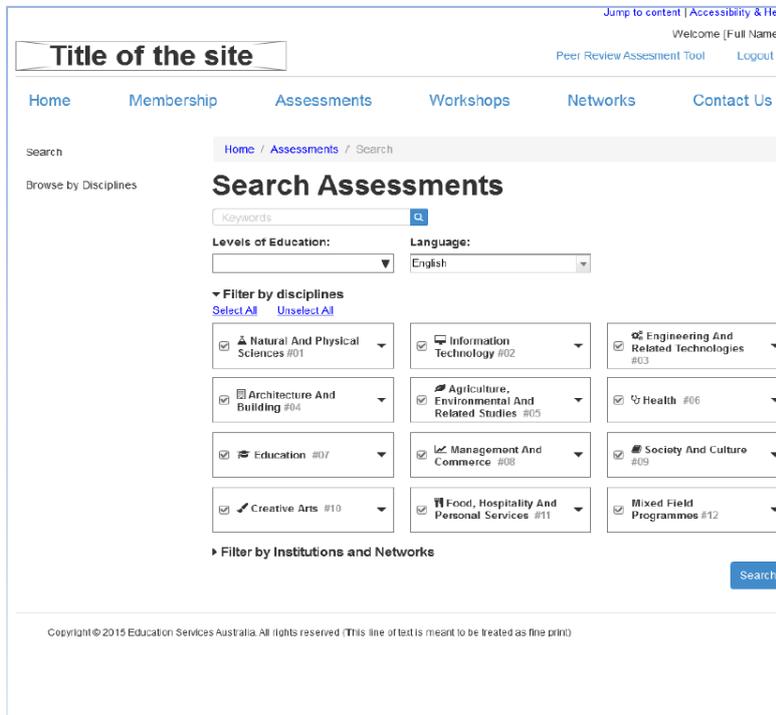

Figure 4. Snapshot of Website

Figure 5. Snapshot of Individual Peer Review Application

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 on the online peer review tool and clearinghouse of good practice in assessment. 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 for testing to gather feedback from a range of stakeholders. Table 1 provides an overview of 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 and Monash University	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	Engineering
Group 6: AAIPE and Top Education: under discussion	Under discussion
Group 7: Eastern College of Australia, Tabor Adelaide, Harvest Bible College, Avondale	Theology, education
Group 8: Avondale and Charles Sturt University	Education

The 8 groups will be piloted from February-May, 2016. Work is currently underway with each of the stakeholder groups to identify the model of peer review that they will be undertaking; 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 working with each of these stakeholder groups as well as providing guidelines on how to use the online peer review tool. Phases 3-7 will be undertaken over the next six months of the project to improve the capacity and functionality of the online peer review tool as well as provide support through a College of Peers process.

Conclusion

This paper has provided an up-to-date progress on a national project to develop an online peer review tool. Initial feedback from key stakeholders has provided invaluable feedback on how to improve the online peer review tool. Interestingly, the key principles in testing the online ESA tool [that is, being context-sensitive; streamlined, efficient, cost-effective,

sustainable; fit for purpose; and engaged] (Krause, 2014) have been critical elements in the design and development of the online peer review tool. This paper argues that is it is critical for the HE to establish a community of practice in the development of an online peer review tool that is sustainable and useful for the HE sector, to ultimately improve the student learning experience.

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