THE PLACE
of
PEER REVIEW
in
learning and teaching

CONTENTS

INTRODUCTION

Peer Review of Teaching (PRoT) is a broad category of practices applied variably to academic development and assurance within the higher education sector. The term *teaching* in this context refers to all aspects of the process including the act of teaching, curriculum design, design of learning activities, assessment design and practice across all delivery modes. The broad typology *Peer Review of Teaching* (PRoT) is defined as *'academic colleagues giving and receiving feedback on their teaching'* (Harris, et al, 2008, p.5). Within this broad domain, approaches, purposes and practices vary considerably, as do the aims of implementing such programs. Differing terminology is used in the literature, often interchangeably. The scope of PRoT is outlined later in the paper in terms of variations in aims, practices and processes. Key types of PRoT are defined.

Reflecting on the last two decades of literature available on peer review of teaching (PRoT) confirms its potential to enhance teaching quality (Wingrove et al, 2018; Gormally et al, 2014) and improve student learning (Lomas & Nicholls, 2005). In addition to these high level and desirable quality outcomes, the literature also highlights specific potential benefits which may accrue at both the individual and institutional level, namely:

1. *Individual*: improved confidence in one's teaching ability (Bell & Cooper, 2013); enhanced awareness of student learning experience (Bell & Mladenovic, 2015); insights into and adoption of new and innovative and more engaging teaching strategies (Lomas & Nicholl, 2005); develop capacity of both reviewers and reviewees as reflective practitioners (Shortland, 2004); enhancement of supportive collegial relationships (Quinlan & Bernstein, 1996) and opportunities to share ideas, good practice strategies and challenges associated with teaching (Lomas & Nicholls, 2005).

2. *Institution*: expanding the range of quality data indicators beyond the traditional student evaluation (Gibbs & Habeshaw, 2002); an additional source of data around teaching practices and challenges which can inform improvement strategies and academic development programs (Bell & Mladenovic, 2008); demonstrate to students institutional commitment to quality improvement in teaching practice (Sullivan et al, 2012); contribution to the scholarship of learning and teaching (SoLT) (Engin, 2016); when part-time staff are included, an enhanced sense of belonging to the institution results (Blackmore, 2005).

3. *Individual and institutional*: raising the status and recognition of teaching within institutions (Shulman, 2000), providing evidence for promotion and teaching awards (Blackmore 2005); increasing the visibility of teaching activities within the academy, reducing the levels of isolation in which it is usually practiced, and increasing opportunities for transferability of good practice (Shulman, 1999).

In terms of quality enhancement and assurance, peer review is advocated as complimentary to student evaluations (Klopper & Drew, 2015) e.g. SFUs/SFTs, recognising that peers have the expertise to assess aspects of teaching and curriculum which students cannot, including course objectives & content, assessment practices, learning activities, instructional materials and professional behaviours (Iqbal, 2013). Georgiou et al (2018) assert increased interest in peer feedback, in response to increasing sector use of student evaluations and concerns around their validity Boring et.al (2016), Strobe (2016). A separate report has been compiled by the Office of Quality and Performance into the validity of the Student Feedback on Unit (SFU) and Student Feedback on Teaching (SFT) data.

PRoT may support reflection on student evaluative feedback, providing an additional perspective and evidence to inform responses to student feedback. Carbone et al (2015) reported improvement in student evaluation scores in a majority of courses included in a national multi-institutional trial of a PRoT program. Similarly, Gill (2015) reported significant improvement in SFU scores across units at WSU following the peer review (audit) of basic, fundamental assessment information provided to students in first year unit learning guides.

As a result, peer review of teaching has become increasingly common across higher education both within Australia and internationally as part of a concerted move to improve and assure teaching quality. In the United Kingdom it is particularly well established and required by the national *Quality Assurance Agency* (Gosling 2014). Similarly, in Australia, the expectation of increasing accountability and transparency in teaching quality is emphasised by quality agencies such as the *Tertiary Education Quality & Standards Agency* (TEQSA). Drew & Klopper (2014, p. 349) emphasise the 'increasingly competitive higher education sector' and within that context, the importance of the demonstrated quality of an institution's teaching to all HE organisations, advocating for PRoT as a strategy to help improve quality outcomes.

Further drivers for the expansion of peer review in the HE sector is explained in the literature as deriving from: external pressure for increased accountability and transparency in teaching quality (Lomas & Nicholls, 2005); expansion in student numbers and diversity (Devlin & Samarawickrema, 2010) with the subsequent need for new and innovative approaches to learning and teaching beyond the traditional lecture/tutorial model (how many current academics learnt to teach, *by being taught*) which are active, student centred and engaging (Burd et al, 2015) . Peer review processes appropriately designed and implemented have been shown to support the adoption of new and innovative teaching approaches (Lomas & Nicholls, 2005), and the cultural change required to embed such approaches in daily practice (Blackmore, 2005).

For these reasons, peer review of teaching processes is seen as an integral part of Postgraduate Certificates in Teaching and Learning offered to academic staff within the education sector (Teoh et al, 2016) including in Australia, though its broader use across the sector is variable.

ABOUT PEER REVIEW IN TEACHING

The broad typology *Peer Review of Teaching* (PRoT) is defined as 'academic colleagues giving and receiving feedback on their teaching' (Harris, et al, 2008, p.5). Within this broad domain, approaches, purposes and practices vary considerably and different terminology is used in the literature, often interchangeably. For the purposes of this paper a definition of the following terms is provided (though they continue to be used interchangeably in throughout this paper, consistent with terminology used by authors):

Peer Observation of Teaching (POT) – whilst the terms peer review and peer observation are often used interchangeably in the literature, *observation* more commonly suggests a less formal, more collegial approach, emphasising academic development and personal reflection, rather than assessment and judgement. Engin (2016, p.378) thus defined POT as 'observation of teaching, teacher, and or learning by a colleague without evaluative feedback'. Hendry & Oliver (2012) argue for a form of *peer observation* where, rather than the focus being on the observer (or reviewer) observing and identifying aspects of a colleague's practice which could be improved, or identifying for them strategies or approaches they may use, the emphasis is on 'the observer selecting a practice performed by a colleague that they could try (p. 6). Thus, the *observer*, learns by *observing* (Hendry et al, 2014). Such an approach, argue Thomson et al (2015) means less formality, less emphasis on an academic opening *their* teaching to review and judgement, with the focus on their choosing their own improvement focus and seeking opportunities to *learn by observing*.

Peer Review of Educational Practice – refers to a broader focus on educational practice, as opposed to teaching *per se*, emphasising the importance of peer review to a wider spectrum of activities associated with learning, such as curriculum design, standards, assessment design and practices.

Though the literature focuses chiefly on peer review of traditional teaching methods such as lectures, tutorial and laboratory sessions, its application to other forms of teaching such as online (e.g. Walker & Forbes, 2018) clinical teaching (e.g. Barnard et al, 2016), and PBL facilitation (Garcia et al, 2017) is evident and is represented across a broad range of disciplines.

More recent, innovative teaching strategies such as work integrated learning did not appear in the literature reviewed. However, Snelling et al (2016) report on the use of peer review strategies to assist in the design and implementation of flipped classrooms. The focus of much of the review literature is on the *performance* of teaching, but also includes the application of peer review processes on curriculum and assessment design and implementation (Georgiou et al, 2018).

Types of peer review

PRoT programs can be both *formative* and *summative* in nature. Formative processes focus on improvement of practices through constructive feedback, whereas summative are designed to provide evaluative evidence to inform decision making, such as for promotions or awards etc. (Gosling, 2014). Many institutions offer both types of review, however because of the more consequential nature of summative evaluations, it is generally recommended that a clear distinction is maintained.

Approaches to PRoT can be placed along a continuum according to the dominance of the following characteristics, aligning with the formative/summative distinction:

Managerialism Formality Accountability Judgemental	⟷	Collegiality Informality Developmental Enhancement

Within these two broad categories Gosling (2014) describes three broad models of peer review, distinguishable by their purpose or function and associated implications on the power relationships between academics which characterise them, namely: *Evaluative, Development* and *Collaborative Model*s. A summary of the models and their core characteristics is provided in Appendix 1.

Though there is significant variability in the design and structure of PRoT programs, a cyclical, four phase process, as proposed by Bell (2002) appears common to many of the PRoT programs described in the literature, consisting of (1) a pre-observation meeting; (2) observation; (3) post observation feedback; and (4) reflection.

Peer observation of teaching (POT) has been shown to benefit both the observer as well as the colleague being observed, with the process of observing encouraging reflection on one's own practice and the opportunity to identify and adopt differing techniques (Sullivan, et al, 2012).

Who should do the reviewing?

Once again, the literature demonstrates considerable variability in the characteristics of reviewers across different PRoT's, ranging from: external expert reviewers in the case of formalised, institutional processes; staff in senior management roles in cases where internal judgements are the focus; internal expert reviewers, such as internally recognised excellent teachers or academic development staff; colleagues from the same or differing disciplines, sometimes with more experience, or indeed of similar experience levels (Gosling, 2002).

Some literature specifically reports the participants valued the feedback of expert reviewers (e.g. Georgiou et al, 2018), others valued feedback from more equal peers (Grainger et al, 2016). Grainger et al (2016), reflecting on the personal experience of involvement in three differing PRoT processes concluded that the least positive experience was *'being assessed by someone considered a friend or with whom one is on informal terms, or being assessed by a senior member of staff'.* They assert that the 'former can reduce the formality and level of critique and therefore opportunities for learning and development, whilst the latter can take the teacher's focus from student learning'. They thus recommend that 'reviewees identify and choose respected and admired colleagues who are not 'mates' to conduct the formal peer review' (p. 532).

Do students have a role in PRoT?

Specific involvement of students within PRoT processes does not figure significantly in the literature except in the following two cases. Pattison et al (2012, p. *e*137) describes how observers included students in the post-observation stage 'exploring what they particularly found effective and if they could suggest any changes for the teacher', reporting that this provided further valuable insights which could be included in feedback. Notably, Huxhama, et al (2017) included trained student volunteers as evaluators in a PRoT process. They reported that 'students gave significantly more positive comments, and just as many negative and directive comments, as academic peers…emphasised the positive personal (rather than professional) capacities…and drew on their broad experiences as students rather than from professional perspectives' (p. 887). They argue that 'the alternative standpoint [of] student[s]…brought rich and relevant differences – and arguably greater epistemic salience – to their observations' (p. 896), concluding that 'students' evaluative feedback is the most valuable perspective to inform teaching enhancement' (p. 887).

Challenges in implementing peer review

The potential benefits of peer review of teaching are outlined in the introduction and are substantial. However, despite such widely documented benefits and despite peer review being wholly consistent with academic culture, where peer review is solidly ingrained in the research process (Hutchings, 1996) and accepted as a vital part of scholarly practice within a community of scholarship, its implementation within the teaching domain has elicited common challenges, including resistance from many academics. Indeed, Barnard et al (2015) maintain that there is a high degree of avoidance of PRoT within the Australian higher education sector. PRoT programs can provide the context, much like that within the research domain, to actively connect within a community of scholarly practice where engagement and review support continued growth in professional development (Harris et al, 2008; Klopper & Drew, 2015).

Dealing with the resistance commonly faced from academics is a challenge which needs to be considered in the design of the program. Resistance commonly arises from (1) perceived unreliability and lack of validity (Chism, 2007; Kell & Annetts, 2009); lack of confidence in peer expertise (emphasising the importance of training, addressed later) (Bell & Mladenovic, 2008); concerns that reviews are usually based on a snap-shot, and thus not representative of teaching practices overall (Byrne et al, 2010); time constraints (Kell & Annetts, 2009); perceived infringement of academic autonomy, especially when seen as a largely managerial activity (Hatzipanagos & Lygo-Baker, 2006; Swinglehurst et al, 2008); and perceived potential negative career implications when opportunities for improvement may be documented (Kell & Annetts, 2009); feelings of anxiety and discomfort elicited at having one's teaching observed (Cosh, 1999).

Peer reviewers may lack training or feel unqualified to evaluate the teaching of colleagues (Yon et al, 2002), highlighting the need for quality training and support processes to be put in place.

LESSONS IN DESIGNING AND INPLEMENTING A PEER REVIEW PROGRAM

Barnard et al (2015) make the point that 'educational innovations in the higher education sector can be challenging and embedding innovation into the culture of daily practice even harder' (p.30). However, Bell & Mladenovic (2008) maintain that PRoT is an effective strategy for use in transformational reforms within institutions, through the process of collegial reflection and identification of improvement opportunities.

Willison (2007) emphasises the importance of *vision and choice* when implementing any academic development program. Given the diversity of approaches, processes and intent of PRoT programs throughout the literature, the first step in development of a program is to identify the goals of doing so, which should be agreed and clearly articulated as the first step. The institutional approach to PRoT, its characteristics, structure and processes should then be determined to help achieve those goals. Despite there being no consensus in the literature around the 'correct' model, there appears a consensus that a more formative, collegial approach offers the greatest potential for success, including in terms of academic engagement (Carroll & O'Loughlin, 2014; Kell and Annetts, 2009) and thus the focus for Western Sydney University's 2018 Learning Showcase.

Irrespective of the goal of PRoT, the literature suggests the importance of structure and clear processes in conducting reviews (Sullivan et al, 2012). Caroll & O'Loughlin (2014) provide a number of recommendations for the successful implementation of PRoT programs, including: (1) the need for dedicated training in the 'provision and receiving of feedback…in order to 'enable them to overcome politeness and exploit peer observation to its full potential'; (2) commence with a process which encourages academics to 'self-select their peers, or provide a 'matchmaking service' for participants'; (3) identify first-time users who have a positive experience and enlist them as *champions* for the program; (4) establish spaces and opportunities for dialogue within a community of practice; and (5) 'establish the importance of the scholarship of teaching relative to research both for developmental and career progression' (p. 453).

To encourage broad engagement requires the alignment of the program with other structures and processes throughout the University (Caroll & O'Loughlin, 2014), such as (1) including as part of the annual performance review process, whereby staff report on whether they participate in a peer review processes either as reviewers or reviewees, and subsequently schools report on how many staff, participated in these processes; (2) include in promotion applications and guidelines for presenting evidence of teaching quality and provide resources to support this process. Barnard et al (2015) also highlight the desirability of identifying and enlisting 'champions, strategic mentors and communities of practice to sustain innovative change' (p.33).

Wingrove et al (2018), following interviews with 18 leaders in a UK and Australian university where PRoT was at differing stages of implementation, highlighted the following factors as important to successful implementation:

> (1) Establish a supportive and constructive collegial environment 'underpinned by the core values of respect, academic scholarship, freedom and integrity (p.378);

(2) Use of 'respectful collegial leadership' so that PRoT 'is enacted as developmental and emancipatory' (p.378);

(3) Engage all stakeholders within the academic hierarchy (p. 378);

(4) Develop a culture that values scholarship and continuous improvement, promoting 'self-assessment, reflection and personal growth, to enhance learning and teaching' (p.378);

(5) Negotiate change in ways that cultivate a learning organisation (p.378);

(6) Support change through 'policy, action and culture' (p.379).

White et al (2014) reported four key variables effecting willingness of academics to engage in PRoT, namely (1) 'the perceived benefits of the program, and individual's perceived need for support around teaching, (2) perceived drawbacks of the program and (3) career-related benefits (p.372) and/or perceived potential detrimental impacts.

Bell & Thomson (2018, p. 278) highlight the importance of the following three ways of supporting peer observation within institutions:

(1) a focus on the benefits of observing;

(2) a focus on collegiality and conversations between teaching staff; and

(3) a focus on autonomy of choice for teaching staff.

Addressing concerns regarding the reliability and validity of reviews, requires the achievement of consensus around what constitutes good practice (Chism, 2007) and development of clear and informative criteria and processes to be followed, and establishment of correct procedures for peer observation (Thomson et al, 2015, p. 1060)

The centrality of quality feedback and reflection

The quality of feedback provided is consistently highlighted as being of key importance to the success of any program. Brickman et al (2016) go as far as suggesting it constitutes the 'missing link [in the] effective implementation of evidence-based teaching strategies in undergraduate STEM education' (p.9). Hendry & Oliver (2012) warn of a worse-case scenario where 'self-efficacy for teaching may be weakened by poorly framed feedback' (p.6).

Sullivan et al (2012, p. 3) propose the following criteria as essential to effective feedback, namely that feedback should be:
Descriptive – of the behaviour rather than the personality;
Specific – rather than general;
Sensitive – to the needs of the receiver as well as the giver;
Directed – towards behaviour that can be changed;
Timely – given as close to the event as possible;
Selective – addressing one or two key issues rather than too many at once.

Importantly King (1999, cited in Sullivan et al, 2012) make the point that 'giving feedback is not just to provide a judgement or evaluation…it is to provide *insight'* [current authors emphasis] which is consistent with the notion of reflective practice characterising PRoT.

Reflective practice is at the heart of any PRoT which aims to 'enhance and value learning and teaching diversity' (Kell & Annetts, 2009, p.67), requiring a culture of trust and collegiality where academics can feel comfortable and supported to open their teaching practices up to one another for review. Teoh et al argue that 'a lack of shared understanding of the term *critical feedback* and a lack of experience' means participants are uncomfortable engaging 'in the culture of providing constructive feedback' (p.5). They assert that 'training by teaching experts, or the provision of standard guidelines, is important in assisting an effective review process' (p.5).

Drew et al (2017) highlight the importance of organisational culture to the success of any PRoT and advocate the development of 'micro-cultures' (p. 924) where collaborative communities of practice can thrive, encouraging institutional leadership to support their formation.

The potential of Badging and Micro-credentialing

Hamson-Utley & Heyman (2016) describe the use of digital *badging* as a mechanism for micro-credentialing the participation of academics in peer review process, as well as enabling reviewers and reviewees to more easily make connection and encouraging 'just-in-time' training. It also enables the collection of data about the training needs and challenges experienced by staff to inform academic development. It provided 'a system to gather information, track information, and disseminate the information to a larger academic community … [along with] the tagging of competencies' (p. 248) and the ability to showcase academic staff achievements through the provision of a leader-board function.

Developing PRoT instruments

Many purposefully developed instruments are available online (see Appendix 2). Drew et al (2017, p. 920) maintain that to be effective they should meet the following design criteria

'(1) provide observation prompts applicable to a range of delivery modes

and media;

(2) consider students' feedback and most popular unit and teaching improvement

requests; and

(3) focus observers on teachers' stated development goals.

It is important, if an institution wishes to promote and encourage specific types of learning approaches and modalities that fit-for-purpose instruments be designed and made available to guide observation and reflection.

Drew et al (2017, p. 924) advocate the application of Devlin & Samarawickrema's (2010) 'criteria for excellence in university teaching'. In so doing, they highlight the importance of the following factors: (1) clear standards for learning and teaching, including levels for attainment for promotion; (2) provision of flexible and structured learning; (3) 'formative feedback on situated professional learning'; and (4) assurance of a 'shared language and understanding to ensure consistent and coherent' messaging.

RESOURCES – PEER REVIEW TOOLS, INSTRUMENTS AND GUIDELINES

The literature is resplendent with case studies and significant reports on differing aspects of PRoT, as well as review tools, instruments and guidelines. A list of key resources available online, along with key reports and readings is provided in appendix 2.

SOME CONCLUDING REFLECTIONS

If the goal of implementing a PRoT program is to support changes in teaching approaches and the cultural change this involves, then implementing summative reviews would likely be counterproductive. Rather, taking a formative, developmental, collegial and voluntary approach would be more appropriate. There is widespread consensus around the value of this approach within the literature as offering the potential for greater engagement (though it is far from assured) and superior benefits.

However, to encourage broad engagement it is would seem appropriate to align the program with other structures and processes throughout the University, such as (1) including as part of the annual performance review process, whereby staff report on whether they participated in an peer review processes either as reviewers or reviewees, and subsequently schools report on how many staff, participated in these processes; (2) include in promotion applications and guidelines for presenting evidence of teaching quality and provide resources to support this process.

Given, as Hendry & Oliver (2012, p.1) report, the emerging evidence is that 'the process of observing is just as, if not more valuable than being observed', then starting with a register of *volunteers to be observed* who have demonstrated effective teaching in particular domains and encouraging individuals to attend and observe teaching sessions would be a good starting point. Similarly, effective innovations in curriculum, learning activities and assessment design could be propagated and partnership building and shared learning encouraged.

REFERENCES

Barnard, A., Nash, R., McEvoy, K., Shannon, S., Waters, C., Rochester, S. & Bolt, S. (2015). "LeaD-in: A Cultural Change Model for Peer Review of Teaching in Higher Education." *Higher Education Research & Development 34*:1, 30–44.

Barnard, A., Harvey, T., Theobald, K., Tippett, V. & Rider, T. (2016) Supporting clinical facilitators through peer review of teaching, *Australian Nursing & Midwifery Journal, 24*:4, 34-35.

Bell M. (2002) Peer observation of teaching in Australia. York: LTSN Generic Centre.

Bell, M. & Cooper, P. (2013) Peer observation of teaching in university departments: a framework for implementation, *International Journal for Academic Development, 18*:1, 60-73, DOI: 10.1080/1360144X.2011.633753

Bell, A., & Mladenovic, R. (2015) Situated learning, reflective practice and conceptual expansion: effective peer observation for tutor development, *Teaching in Higher Education, 20*:1, 24-36, DOI: 10.1080/13562517.2014.945163

Bell, A., & Mladenovic, R. (2008). The benefits of peer observation of teaching for tutor development. *Higher Education, 55*, 735–752.

Bell, A. & Thomson, K. (2018) Supporting peer observation of teaching: Collegiality, conversations, and autonomy, *Innovations in Education and Teaching International*, *55*:3, 276-284, DOI: 10.1080/14703297.2016.1212725

Blackmore, J.A. (2005) A critical evaluation of peer review via teaching observation within higher education, *International Journal of Educational Management, 19,* 218-232.

Brickman, P., Gormally, C. & Martella, A. M. (2016) Making the Grade: Using instructional feedback and evaluation to inspire evidence-based teaching, *CBE – Life Sciences Education, 15:*ar75, 1-14.

Boring, A., Ottoboni, K., & Stark, P. (2016) Student evaluations of teaching (mostly) do not measure teaching effectiveness, *Science Open Research*, 1, 1-11. Doi: 0.14293/S2199-1006.1.SOR-EDU.AETBZC.v1

Burd, G.D., Tomanek, D., Varma-Nelson, P. (2015) Improving Teaching Quality through Peer Review of Teaching, in Shelton, R.N. & Hunter, R.W. (Eds) *Searching for Better Approaches: Effective Evaluation of Teaching and Learning in STEM,* Research Corporation for Science Advancement.

Byrne, J., H. Brown, and D. Challen. (2010) ''Peer Development as an Alternative to Peer Observation: A Tool to Enhance Professional Development.'' *International Journal for Academic Development 15*:3, 215-228. doi:10.1080/1360144X.2010.497685

Carbone, A., Ross, B., Phelan, L., Lindsay, K., Drew, s., Stoney, S. & Cottman, C. (2015) Course evaluation matters: improving students' learning experiences with a peer-assisted teaching programme, *Assessment & Evaluation in Higher Education, 40*:2, 165-180, DOI: 10.1080/02602938.2014.895894

Carroll, C., & O'Loughlin, D. (2014) Peer observation of teaching: Enhancing academic engagement for new participants. *Innovations in Education and Teaching International, 51*, 446–456.

Chism, N. (2007). Peer Review of Teaching: A Sourcebook. 2nd ed. Bolton: Anker.

Cosh, J. (1999). Peer observation: A reflective model. *ELT Journal, 53*(1), 22–27.

Devlin, M., and Samarawickrema, G. (2010). The Criteria of Effective Teaching in a Changing Higher Education Context, *Higher Education Research & Development 29*:2, 111–124.

Drew, S. & Klopper, C. (2014) Evaluating faculty pedagogic practices to inform strategic academic professional development: a case of cases, *Higher Education, 67*, 349-367. DOI 10.1007/s10734-013-9657-1

Drew, S., Phelan, L., Lindsay, K., Carbone, A., Ross, B., Wood, K., Stoney, S. & Cottman, C. (2017) Formative observation of teaching: focusing peer assistance on teachers' developmental goals, *Assessment & Evaluation in Higher Education, 42*:6, 914-929, DOI: 10.1080/02602938.2016.1209733

Engin, M. (2016) Enhancing the status of peer observation through the scholarship of teaching and learning, *International Journal for Academic Development, 21*:4, 377-382, DOI: 10.1080/1360144X.2016.1225576

Garcia, I., James, R.W., Bischof, P. & Baroffio, A. (2017) Self-Observation and Peer Feedback as a Faculty Development Approach for Problem-Based Learning Tutors: A Program Evaluation, *Teaching and Learning in Medicine, 29*:3, 313-325, DOI:10.1080/10401334.2017.1279056

Georgiou, H., Sharma, M. & Ling, A. (2018) Peer review of teaching: What features matter? A case study within STEM faculties, *Innovations in Education and Teaching International, 55*:2, 190-200, DOI: 10.1080/14703297.2017.1342557

Gibbs, G. & Habeshaw, T. (2002) *Recognising and Rewarding Excellent Teaching,* Milton Keynes, TQEF/NCT.

Gill, B. (2015) Talking about the elephant in the room: Improving fundamental assessment practices, *Student Success, 6:*2, 53-63. Doi: 10.5204/ssj.v6i2.291

Gormally C, Evans M, Brickman P (2014). Feedback about teaching in higher ed: neglected opportunities to promote change. *CBE Life Sci Educ 13*, 187–199.

Gosling D. (2002) *Models of peer observation of teaching.* York: Learning & Teaching Support Network (LTSN) Generic Centre.

Gosling D. (2014) Collaborative Peer-Supported Review of Teaching, in: Sachs J., Parsell M. (eds) *Peer Review of Learning and Teaching in Higher Education. Professional Learning and Development in Schools and Higher Education*, vol 9. Springer, Dordrecht

Grainger, P., Crimmins, G., Burton.K. & Oprescu, F. (2016) Peer review of teaching (PRoT) in

higher education – a practitioner's reflection, *Reflective Practice, 17*:5, 523-534. Doi: 10.1080/14623943.2016.1146581

Hamson-Utley, J. & Heyman, E. (2016) Implementing a Badging System Faculty Development, in Ifenthaler, D., Bellin-Mularski, N. & Mah, D. (Eds) *Foundation of Digital Badges and Micro-credentials,* Switzerland: Springer International.

Harris, K-L., Farrell, K., Bell, M., Devlin, M., & James, R. (2008). *Peer review of teaching in Australian higher education: A handbook to support institutions in developing and embedding effective policies and practices*. Carlton: Centre for the Study of Higher Education.

Hatzipanagos, S., and S. Lygo-Baker. (2006) Teaching Observations: A Meeting of Minds?' *International Journal of Teaching and Learning in Higher Education 17*:2, 97-105. http://www.isetl.org/ijtlhe/

Hendry, G. D. and Oliver, G. R. (2012) Seeing is Believing: The Benefits of Peer Observation, *Journal of University Teaching & Learning Practice, 9*:1, 1-9.

Hendry, G.D., Bell, A. & Thomson, K. (2014) Learning by observing a peer's teaching situation, *International Journal for Academic Development, 19*:4, 318-329, DOI: 10.1080/1360144X.2013.848806

Hutchings, P. (1996) The peer review of teaching: Progress, issues and prospects, *Innovative Higher Education, 20,* 221-234.

Huxham, M., Scoles, J., Green, U., Purves, S., Welsh, Z. & Gray, A. (2017) 'Observation has set in': comparing students and peers as reviewers of teaching, *Assessment & Evaluation in Higher Education, 42*:6, 887-899,DOI:10.1080/02602938.2016.1204594

Iqbal, I. (2013) Academics' resistance to summative peer review of teaching: questionable rewards and the importance of student evaluations, *Teaching in Higher Education, 18*:5, 557-569, DOI: 10.1080/13562517.2013.764863

Kell, C., & Annetts, S. (2009) Peer review of teaching embedded practice or policy-holding complacency? *Innovations in Education and Teaching International, 46*, 61–70. DOI: 10.1080/14703290802646156

Klopper, C. & Drew, S. (*Eds*) (2015) *Teaching for Learning and Learning for Teaching: Peer Review of Teaching in Higher Education,* Rotterdam:Springer.

Lomas, L. & Nicholls, G. (2005) Enhancing Teaching Quality through Peer Review of Teaching, *Quality in Higher Education, 11*:2, 137-149. Doi: 0.1080/13538320500175118

Pattison, A.T., Sherwood, M., Lumsden, C.J., Gale, A. & Markides, M. (2012) Foundation observation of teaching project – A developmental model of peer observation of teaching, *Medical Teacher, 34*:2, e136-e142, DOI:10.3109/0142159X.2012.644827

Quinlan K, Bernstein DJ (1996). Special Issue on peer review of teaching. *Innov High Educ 20*, 219–307.

Shortland, S. (2004) Observing teaching in HE: A case study of classroom observation within

peer observation, *International Journal of Educational Management, 4*:2, 3-5.

Shulman, L. (1999) Taking learning seriously, *Change, 31*:4, 11-7.

Shulman, L. (2000) Teaching as community property, in DeZure, D. (Ed) *Learning from Change,* 24-26, London:Kogan Page.

Snelling, C., Karanicolas, S. & Winning, T. (2016) From concept to practice: Helping teachers to Create effective flipped classrooms, *European Conference on e-Learning,* 786-788.

Stroebe, W. (2016) Why good teaching evaluations may reward bad teaching: On grade inflation and other unintended consequences of student evaluations, *Perspectives on Psychological Science*, 11:6, 800-816. Doi: 10.1177/1745691616650284

Sullivan, P.B., Buckle, A., Nicky, G. & Atkinson, S.H. (2012) Peer observation of teaching as a faculty development tool, *BMC Medical Education, 12*;26, 1-6.

Swinglehurst, D., Russell, J. and Greenhalgh, T. (2008) Peer Observation of Teaching in the online Environment: An Action Research Approach, *Journal of Computer Assisted Learning 24*:5, 383-393. doi:10.1111/j.1365-2729.2007.00274.x

Theo, S.L., Ming, L.C. & Khan, T.M. (2016) Faculty perceived barriers and attitudes toward peer review of classroom teaching in higher education settings: A meta-synthesis, *SAGE Open,* 1-8. Doi: 10.1177/2158244016658085

Thomson, K., Bell, Al & Hendry, G. (2015) Peer observation of teaching: the case for learning just by watching, *Higher Education Research & Development, 34*:5, 1060-1062. Doi:10.1080/07294360.2015.1034349

Walker, R. & Forbes, D. (2018) Cross-institutional peer observation by online tutors: Sharing practice 'outside the family', *Innovations in Education and Teaching International, 55*:3, 285-293. Doi: 10.1080/14703297.2017.1281751

White, K., Boehm, E. & Chester, A. (2014) Predicting academics' willingness to participate in peer review of teaching: a quantitative investigation, *Higher Education Research & Development, 33*:2, 372-385, DOI: 10.1080/07294360.2013.832162

Willison, J. (2007) Vision & Choice: ethical characteristics of academic development programs, *Journal of University Teaching & Learning Practice, 4*:2, 72-87

Yon, M., Burnap, C. & Kohut, G. (2002) Evidence of Effective Teaching: Perceptions of Peer Reviewers, *College Teaching 50*:3, 104-110. doi:10.1080/87567550209595887

Wingrove, D., Hammersley-Fletcher, L, Clarke, A. & Chester, A. (2018) Leading Developmental Peer Observation of Teaching in Higher Education: Perspectives from Australia & England, *British Journal of Educational Studies, 66*:3, 365-381.

APPENDIX 1

Models of Peer Review

(revision based on Gosling 2005, p.14)

Characteristic	Evaluation Model	Development Model	Collaborative Model
Who does it and to whom? (peer relationship)	Senior staff, or chosen 'evaluators' or 'auditors' review other staff	Educational developers observe/review probationers; or expert teachers observe others	Teachers/peers/colleagues
Purpose	Identify under-performance, confirm probation, appraisal, promotion, quality assurance, assessment	Demonstrate competency/improve teaching competencies; part of accredited course	Improve teaching through dialogue; self and mutual reflection; stimulate improvement
Outcome	Report/Judgement	Feedback/report/action plan for improvement to teaching & learning	Analysis, reflection, discussion, wider experience, SoTL activity, improvement to teaching & learning
Status of peer review judgements	Based on authority, seniority, and/or expertise	Expert diagnosis based on experience and expertise	Peer shaped understandings and perceptions
Relationship of observer to observed	Power	Expertise	Equality/mutuality
Confidentiality	Between manager, reviewer and reviewee	Between reviewer and reviewee, might include manager, or course tutor	Between reviewer and reviewee – could be shared with learning set. Public outcomes
Inclusion	Selected staff, staff being confirmed in post, applying for promotion, or teaching award	Staff on initial training course (eg PG Cert), staff identified as needing to improve teaching	All involved in supporting student learning
Judgement	Pass/fail, score, quality assessment, confirm tenure or promotion	Feedback on how to improve teaching	Non-judgemental, constructive facilitated dialogue
What is reviewed?	Teaching performance, course design, learning materials, student feedback	Teaching performance, course design, learning materials	Any aspect of course design, teaching, student learning and assessment chosen by reviewee
Who benefits?	Institution, department	The reviewee (one-way interaction)	Mutual benefit for both peers (two-way interaction)
Conditions for success	Effective management	Respected 'developers' or senior staff	A culture in which teaching is valued & discussed
Risks	Alienation, lack of cooperation, opposition, resistance	No shared ownership	Confirms existing practice, passive compliance, perceived as bureaucratic

Source: Gosling, 2014, p.16.

Appendix 2

Resource/Title	Source/link	Summary of key information
Peer Review of Teaching in Aust Higher Ed: A handbook to support institutions in developing and embedding effective policies and practices (2008)	Collaborative ALTC Project – Uni Melbourne & Uni Wollongong https://melbourne-cshe.unimelb.edu.au/__data/assets/pdf_file/0007/2297320/PeerReviewHandbook_eVersion.pdf	Framework for PRT Advice on implementation Guide for program design Documentation Case studies from Aust Universities
Collegial feedback on teaching: A guide to peer review (Kelly Farrell, 2011)	Centre for Study of Higher Education – Melbourne University https://melbourne-cshe.unimelb.edu.au/__data/assets/pdf_file/0007/2297293/Peer_review_guide_web_optimized.pdf	Suggested model – reciprocal pairs Protocols for reviewers/observers Guidelines on feedback, use and interpretation of results
Assuring Learning and Teaching Standards through Inter-Institutional Peer Review and Moderation: Final Report of the Project A sector-wide model for assuring final year subject and program achievement standards through inter-university moderation (2014)	Western Sydney University (Krause) led OLT project http://www.uws.edu.au/__data/assets/pdf_file/0007/576916/External_Report_2014_Web_3.pdf	Project report of – a response to the Tertiary Education Quality and Standards Agency (TEQSA) imperative to demonstrate sector-level, self-regulated, robust approaches for assuring quality and standards and highlights the role of peer review.
Assuring Best Practice in First Year First Session Assessment: Report on Tier One and Tier Two Course Reports (2013)	Western Sydney Report to Senate Education Committee https://www.westernsydney.edu.au/__data/assets/pdf_file/0011/752609/Report_Assuring_Best_Practice_in_First_Year_Assessment-SEEC_final_.pdf	Identifies improvements in fundamental assessment information in unit learning guides shown to improve student feedback scores.
Developing a culture of peer review of teaching through a distributive leadership approach (Barnard et al, 2014)	OLT funded project – led by QUT with Curtin Uni, Adelaide Uni & UTS. https://eprints.qut.edu.au/70892/1/LE11_1980_Nash_Report_2014.pdf	Provides a model for developing peer review within differing teaching and learning contexts.
Peer Review of Teaching for Promotion Purposes a project to develop and implement a pilot program of external Peer Review of Teaching at four Australian universities Final Project Report (2009)	ALTC funded project led by Adelaide University https://www.adelaide.edu.au/teaching-projects/peerreview/peerReviewReport_part1.pdf	Final project implementation report Section on: Extent to which the project outcomes are amenable to implementation in a variety of institutions and/or locations
Preparing for peer evaluation: a guide for staff whose teaching is being evaluated	Flinders University http://www.flinders.edu.au/Teaching_and_Learning_Files/Documents/Preparing%20for%20peer%20evaluation_M.pdf	Guidelines for self evaluation, observation, providing feedback, pre and post-observation meetings and evaluation
Professional development: A module for peer partnerships to embed sustainable learning about teaching (2013)	Royal Melbourne Institute of Technology http://mams.rmit.edu.au/3v2dohhgob3t.pdf	Report outlining peer partnership principles and cycle and stages of the process; explanations of feedback

Appendix 2

Resource/Title	Source/link	Summary of key information
Peer review in online and blended learning environments (2011)	ALTC funded project led by University of Technology, Sydney https://www.uts.edu.au/sites/default/files/final-report.pdf	Project report, plus: Protocols for formative and summative peer review. Templates for peer review; reviewee and reviewer templates; summary report template; and summary peer review report for promotion or awards purposes.
Mentoring Guide (2003)	LTSN Generic Centre Continuing development series – part of UK Higher Education Academy https://www.heacademy.ac.uk/knowledge-hub/ltsn-generic-centre-mentoring	Looks at the issue of mentoring in HEsector. Outlines issues to consider when setting up a formalised mentoring scheme. Aimed particularly at those who are interested in establishing schemes within their own institutions or organisations.
Using Peer Observation to enhance teaching and learning	University of Edinburgh – Teaching matters blog https://www.teaching-matters-blog.ed.ac.uk/using-peer-observation-to-enhance-teaching-and-learning/	Peer observation guide and toolkit, plus blog
Carter, V.K. (2008) Five Steps to Becoming a Better Peer Reviewer, College Teaching, 56:2, 85-88 doi:10.3200/CTCH.56.2.85-88	Journal article	Outlines five key steps for becoming a better peer reviewer
PEER Model – Process of Peer Review	Macquarie University – International project (OLT funded) https://peerreviewofteaching.net/ – Teaching/academic development resources https://staff.mq.edu.au/teaching/teaching_development/peer/about_peer_review/	Report & resources Model Guidelines on who, what and how Reporting
Peer Evaluation of Teaching – situated within Quality Assurance Process	Flinders University – Teaching evaluation gateway http://www.flinders.edu.au/teaching/quality/evaluation/peer-review/	Range (19) instruments for differing teaching activities Guides for reviewers and reviewees (prep)
UTaS Strategy for institutional-level peer review	University of Tasmania http://www.utas.edu.au/curriculum-and-quality/quality/external-referencing/peer-review http://www.teaching-learning.utas.edu.au/unit-design/evaluation/peer-review-of-teaching	Strategy context; resources for peer review of teaching and assessment
Two Programs: Peer Partnerships and Peer Review	University of South Australia https://lo.unisa.edu.au/mod/book/tool/print/index.php?id=624081	Provides both formative (peer partnership) and summative (Peer Review) processes.
Summative Peer Review of Teaching project	University of South Australia https://i.unisa.edu.au/staff/teaching-innovation-unit/teaching/peer-review-of-teaching/summative-peer-review-of-teaching/	Outlines 3 stage process, aligns HOS, reviewee and reviewer roles. Supported by university developed software.

Appendix 2

Resource/Title	Source/link	Summary of key information
Embedding a Peer Review culture in online and blended teaching and learning website	OLT funded project led by University of Queensland http://www.uq.edu.au/teach/peer/index.html	Resource source (currently under construction)
Peer review of Educational Practice	Curtin University http://www2.curtin.edu.au/cli/peer_review_educational_practice/index.cfm	Peer based professional learning program Range of resources
Peer Review of Teaching for Promotion Purposes	Adelaide University https://www.adelaide.edu.au/teaching-projects/peerreview/	Peer review protocol documents Professional development documents; Outline of relevant issues; Further links
Formal Peer Review of Teaching Project	University of Wollongong https://www.uow.edu.au/dvca/ltc/teachdev/PeerReview/index.html	Outlines and provides resources for both Peer observation of teaching (POT) and Peer review of educational practice (PREP)
Peer Observation and Review of Teaching (PORT) Project	Australian Catholic University https://staff.acu.edu.au/our_university/learning_and_teaching/professional_development/peer_observation_and_review_of_teaching_port	Guidelines and supporting resources
Peer review of teaching project within the Faculty of Science	Charles Sturt University https://science.csu.edu.au/peer-review-of-teaching	Provides pre-observation, observation and post-observation information for reviewees and reviewers
Peer Assisted Course Enhancement Scheme (PACES)	Griffith University' https://app.secure.griffith.edu.au/exlnt/entry/4468/view#o=trending	Four modes: Mentor-mentee partnership; Reciprocal partnership; Mentor-mentee group partnerships; Reciprocal group partnerships
Melbourne Peer Review of Teaching Program	Melbourne University https://melbourne-cshe.unimelb.edu.au/programs/teaching-and-learning/melbourne-peer-review-of-teaching-program	Provides a range of resources, including templates etc. for use in differing teaching venues/teaching modalities
Peer Review of Teaching Program	University of Michigan http://www.crlt.umich.edu/resources/peer-review	Rubrics for peer review and evaluation of other portfolio materials Reference sources
Peer Review of Teaching Program	Vanderbilt University, USA https://cft.vanderbilt.edu/guides-sub-pages/peer-review-of-teaching/	Advice on how to select peer reviewers, how to evaluate, limitations and other resources
Peer Review of Teaching Program	Yale University https://ctl.yale.edu/Peer-Rev-Teaching	Links to a variety of published observation protocols and teaching inventories