Leadership in Higher Education: Graduate Teaching Assistants as the agents of change

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Abstract

A large cultural shift is occurring in academia. 'Success' is becoming viewed as more than just the publication of high-impact papers and the acquisition of large research grants before their competitors. To be revered by their peers, within their institution and across their field, academics must also demonstrate motivational leadership and engaging teaching. Early career researchers (ECRs) tend to suffer the most from the detrimental effects of this 'publish or perish' research culture as they sit at the bottom of the traditional academic hierarchy. For those ECRs that work as graduate teaching assistants (GTAs), poor leadership behaviours from supervisors could be deemed 'the norm' and could be reflected in the GTA's teaching practice, or the behaviour might be recognised as harmful and can be actively avoided. This essay discusses how GTAs are in a powerful position to prevent the spread of toxic leadership in higher education because they are still actively learning and developing their academic identity. I describe how my own experience of poor leadership has shaped my teaching; through this case study, I illustrate how GTAs can utilise positive leadership behaviours

to improve the student experience. Future directions for how institutions can facilitate leadership development through training initiatives early in the academic career path are also discussed.

Introduction

What makes a good leader?
'Good leadership' has many definitions due to the varied contexts and career stages it is embedded within. Having a clear vision and driving progress towards it, motivating others, communicating effectively, and demonstrating credibility, respect, courage, decisiveness, and resilience all commonly feature on website lists of characteristics possessed by a good leader. In academia, several qualities beyond these are also required. A systematic literature review (Bryman, 2007) demonstrated that departmental effectiveness is predicted by leaders who treat all staff fairly, encourage shared decision-making, promote a positive work atmosphere, give performance feedback, proactively align departmental goals with those within and external to the university, stimulate research by providing resources and adjusting workloads, and take actions to enhance departmental reputation. However, conflicting priorities between professional bodies, colleagues, students, and personal goals makes good leadership across multiple levels difficult to achieve.

Academic leadership issues stem from the 'publish or perish' culture
Universities compete to enhance education, produce new knowledge, and create stronger societies in exchange for recognition and resources on a global stage. Throughout history, 'success' in academia has most often been perceived as demonstrating excellent research performance, specifically high quality and quantities of publications, acquirement of funding, and renowned reputation within a field (Braun *et al.,* 2016; Lashuel, 2020). In the United Kingdom, the Research

Excellence Framework (2014), first devised in 1986, remains the most prominent measure of this success. The results determine which institutions get a share of approximately £2 billion per year in research funding. Publicly available university rankings further exacerbate the pressure to enhance research performance e.g., *The Times Higher Education World University Rankings* (Braun *et al.,* 2016). In comparison, the Teaching Excellence Framework (2017) is a relatively new measure of academic success and does not carry the same weight. An academic who is passionate about implementing excellent pedagogical practices may not gain the same standing as those colleagues focused more on research and publishing. On the other hand, academics reading straight from their wordy PowerPoint slides, resulting in poor student satisfaction, could still be considered a successful academic within their research field.

The pressures resulting from the 'publish or perish' culture have led to several issues regarding leadership in higher education. Firstly, personnel hire and promotion, resource allocation and training opportunities are skewed in favour of increasing research performance, often at the expense of good leadership and teaching (Braun *et al.,* 2016; Tierney, 2016). In a survey of 233 UK professors, over 60% stated that research outputs were the sole basis for why they were hired (Macfarlane, 2011). Like teaching (e.g., PGCert; Webb & Tierney, 2019), completion of a leadership qualification is not expected until after being hired. According to Haage *et al.* (2021) this can result in most academics feeling unprepared to lead (77% of 368 surveyed), and those already in formal leadership positions feeling unprepared for their current role (73% of 217 participants). Secondly, focusing more on research can dilute the efforts put into teaching, resulting in

an unsatisfactory learning experience (Tierney, 2016). This is important to rectify otherwise students are then less likely to pursue and be prepared for jobs related to their degree (Kneale, 2018). Finally, role conflict can arise as definitions of good leadership differ between stakeholders. Bryman's (2007) review found that what was and was not considered a leadership quality differed widely between studies. Funding bodies, for example, may primarily value qualities underpinning an individual's research outputs to ensure they made a good investment. Universities perceive the ideal leader to strike the perfect balance between teaching, research, and administrative duties while strategically motivating their peers to optimise faculty productivity (Braun *et al.,* 2016). Meanwhile, early career researchers (ECRs) may prefer leaders who prioritise being supportive, empathetic mentors, and doing what is best for the team.
This mismatch between the expectations of the students taught by a module leader, colleagues within a leader's research team and those who hired the leader is a prominent issue in academia.

Who is considered as an academic leader?
Power and responsibility in academia are often only associated with those in officially recognised leadership roles. For example, Advance HE's 2022 Global Leadership Survey for Higher Education specifies 'formal leadership positions' as "Dean, Head, Director, Associate/Deputy, Manager, Vice Chancellor…, etc", while definitions of other roles are more generic i.e., "leading through influence, expertise, mentoring others, etc". While leadership in academia is understudied in general (Braun *et al.,* 2016; Cruz & Rosemond, 2017), very few studies involve those in 'non-positional' roles (Juntrasook *et al.,* 2013). Most research is from the perspective of

professors (e.g., MacFarlane, 2011), principal investigators (PIs) and those in administrative positions (Braun *et al.,* 2016). Academics should be considered leaders as soon as supervision or mentorship of other students begins i.e., during a PhD (Haage *et al.,* 2021). Despite making important contributions to higher education (Meadows *et al.,* 2015), graduate teaching assistants (GTAs) have never been specifically considered in studies of leadership before.

Essay aims
This essay aims to illustrate how GTAs could transform the future of leadership in higher education through a combination of utilising positive leadership behaviours in their own teaching practice and preventing the spread of poor leadership in both their research and teaching environments. First, I demonstrate how working towards this aim can improve the student experience by using my approach to teaching after reflecting on an experience of poor leadership as a case study. Then, I discuss what future actions institutions can take to facilitate leadership development by introducing training initiatives early on in the academic career path. Finally, I suggest what actions GTAs can take to prevent the spread of toxic leadership in higher education.

GTAs could be powerful agents of change

Case study: How reflections on a poor leadership experience shaped my teaching
This case study provides an example of why GTAs aiming to improve their students' learning experience should strive to recognise poor leadership behaviours and prevent them from

spreading by employing positive leadership behaviours. The first year of a doctoral training programme in science can consist of completing short projects in several labs and institutions before students select which topic to complete their PhD in. Unfortunately, one of mine involved a poor supervisor. Rather than lead our team, they asserted authority. They did not respect others and they actively discouraged attendance to other events that would have promoted our personal development if they were seen to interfere with working at the lab. They disapproved when we did not adhere to the same intense schedule they followed. It seemed that I was there for the research grant that came with me and as an extra pair of hands to carry out their vision. Although they are a successful researcher in their field based on traditional measures of publications and grants, they were not an effective leader in the eyes of their students. My experience forms just one small case study demonstrating a larger issue across multiple institutions. Even worse scenarios are known to exist, including examples of bullying, manipulation, and tampering with feedback reports. PhD students, which form the majority of GTAs, are amongst those most affected by poor leadership by academic supervisors in terms of mental health and academic performance (Christian *et al.,* 2021). GTAs have not previously been included in any publications on leadership in academia, so empirical research is needed on the impact of poor leadership on GTAs specifically.

As someone aspiring to continue down the 'traditional' academic career path, I promised myself that I would never let anyone under my leadership feel the same way that I did. I have applied this to my work as a GTA. In one module, I had a small group of students who were tasked with creating a blog

and poster on a topic of my choosing. Rather than lecture at them, I took a student-partnership approach, treating the group as one big team where I acted more as a guide, as it creates a 'community of practice' (Wenger, McDermott & Snyder, 2002) where students can take on the roles of leaders in their own research (Healey, Flint & Harrington, 2014). In the first lecture, I introduced them to a series of interesting subtopics we could cover, then based my lecture series on those they found most exciting. Halfway through the module, I asked for anonymous feedback on my teaching practices and leadership style and adapted the sessions accordingly. Before assignment deadlines, I held open office hours for anyone struggling. At the end of the module, students reported that they liked "the personal engagement with [them] all and the helpful feedback", as well as how my "interest [in the topic] was really infectious". Ultimately, this student-partnership approach enabled me to facilitate more peer dialogue, maintain student engagement during a period of online-only learning, and adapt my teaching approach to address individual students' needs, all of which exemplifies positive leadership behaviour (Bryman, 2007). Studies examining the impact of positive leadership behaviours from GTAs and module leaders alike across a wide range of modules and institutions are needed, especially since the potential impact of GTAs on students is growing each year.

Why GTAs have huge potential for a positive impact on the student experience
In terms of potential impact from sheer numbers, 10% of approximately 6000 doctoral students were estimated to have teaching responsibilities at UCL alone (Standen, 2018). This proportion will increase as reliance on GTAs to carry the teaching burden increases as the number of undergraduate

students and the need for budget cuts simultaneously rise (Park & Ramos, 2002; Clark, 2021). GTAs also have an underappreciated position of influence. As current postgraduate students themselves, GTAs act as the bridge between lecturers and students (Dotger, 2011; Standen, 2018; Clark, 2021). As they are still actively learning and developing their teaching identity and leadership style, GTAs are usually more up to date with modern pedagogical practices and technology. Students have reported that GTA-run seminars can be more stimulating and that GTAs are more relatable as non-experts (Muzaka, 2009). GTAs may also feel more enthusiastic about learning to teach as they are more aware of the competitive job market facing them after graduation (Standen, 2018). Additionally, GTAs have often graduated from undergraduate degrees more recently than senior academics, so they are more aware of what improvements could be made (Muzaka, 2009; Standen, 2018; Clark, 2021).

Challenges for GTAs

Despite all this potential, many GTAs feel powerless to exercise leadership (Austin, 2002; Clark, 2021) due to a unique set of challenges. The two most direct sources of leadership influence on GTAs are their own PIs (research-related) and the leaders of the modules they teach on (teaching-related). Without good leadership within their own research group, collaborations can fall apart, and publications can be delayed (Frassl *et al.,* 2018). Ineffective leadership by PIs could create more pressure for GTAs to carry the research load, resulting in less time for leadership and teaching experience. Hostile research environments can develop,

which can cause ECRs to leave academia entirely (Christian *et al.,* 2021). As GTAs are themselves balancing research responsibilities with personal development (Dotger, 2011), this type of environment could exacerbate their sense of liminality in academic identity (Kinsella *et al.,* 2022).

Many of the teaching-related challenges stem from GTAs not being given the opportunity to exercise academic autonomy (Park & Ramos, 2002; Standen, 2018). Job opportunities primarily consist of overseeing practicals, marking essays, or hosting small group tutorials (Austin, 2002), which limits their decision-making authority and autonomy regarding course design, delivery, and assessment (Muzaka, 2009). This is often because of a misconception regarding lack of experience, partly due to a lack of teaching observations by academic staff (Park & Ramos, 2002). This can all contribute towards a sense of imposter syndrome and role conflict (Haage *et al.,* 2021; Kinsella *et al,* 2022). Furthermore, academic institutions prioritise training doctoral students for research responsibilities, and less for life as academic staff (Austin, 2002; Simmons, 2011), likely another example of the effect of the 'publish or perish' research culture. This is partially because hiring GTAs is usually a short-sighted reaction to staffing shortages (Park & Ramos, 2002). It is not sufficient to assume that a more senior member of academia is an appropriate role model for GTAs to judge their own performance on because good leadership behaviours will not necessarily be demonstrated, due to a lack of formal mandatory training courses.

Future directions for institutions

While participating in the UK Reproducibility Network (UKRN) leadership course, it occurred to me that those who had voluntarily signed up were likely the people who needed it the least, as attendees were already aware of the importance of leadership and took the initiative to better themselves. Poor leaders are typically unaware of the impact of their actions on others because people who do not self-examine end up in a self-confirming cycle of reinforcing their own beliefs (Brookfield, 1998). Therefore, the crucial first step for developing a more positive leadership culture in academia is to increase awareness of and opportunities for leadership training (Haage *et al.,* 2021). By investing in leadership training, universities can eliminate the need for training new leaders on the job, retain more excellent scientists, and increase academic outputs, both in terms of research and teaching (Christian *et al.,* 2021). Most current academics want to complete further training, so demand is not an issue (Tierney, 2016; Haage *et al.,* 2021). Currently, most academic leadership courses last a year, and include just 8-15 staff who were either nominated or competitively selected (Cruz & Rosemond, 2017). Institutions need to make training mandatory prior to staff being appointed as leaders (Braun, *et al.,* 2009; Muzaka, 2009). Additionally, time should be allocated to follow-up sessions after taking on the leadership position to ensure the training is being used effectively.

Focusing on embedding comprehensive training programs in postgraduate education may be a better use of limited resources, as it could prevent poor leadership behaviours from developing in the first instance (Tierney, 2016). Making GTA training courses mandatory is gradually becoming more

common (>50% of UK courses; Lee *et al.*, 2010), but most courses only amount to approximately three days per year (in a survey of 70 UK departments; McGough, 2002). Additionally, these courses are typically focused on facilitating, marking, and delivering pre-designed lecture content. Current university programs for systematic leader development are mainly designed for senior leadership positions, such as department heads. Training must be specialised to the unique needs of GTAs to optimise long-term impact and foster a more student-centred approach to teaching and leadership (Meadows *et al.,* 2015). For example, science GTAs have said that general training courses are not very useful for running labs (Park & Ramos, 2002). While GTA courses are becoming increasingly aligned with the UK Professional Standards Framework (Lee *et al.,* 2010), they simply do not comprehensively prepare GTAs for the full range of duties and challenges in academic life (Muzaka, 2009; Braun *et al.,* 2016; Haage *et al.,* 2021). As academics of the future (Meadows *et al.,* 2015), it is essential that GTAs obtain the necessary leadership skills required to fulfil multiple roles; as supervisor, mentor, ambassador, collaborator, networker, and role model (Braun *et al.,* 2016). PhD graduates are now expected to demonstrate their commitment to continued learning and their ability to adapt in this ever-changing world of employment (Austin, 2002). Even if GTAs choose not to continue in academia, leadership skills contribute towards building a more competitive portfolio of skills (Muzaka, 2009) and are highly desirable for almost every job (Roulston, 2018).

More studies are required to investigate the effect of evidence-informed leadership training initiatives across diverse research contexts in academia (Hubball *et al.,* 2015;

Braun *et al.,* 2016), especially for groups that are currently underrepresented e.g., female, and international GTAs (Winter *et al.,* 2015). So far, it appears that there is no single strategy to developing a leadership program (Hubball *et al.,* 2015), but to be effective it must be ubiquitous. Muzaka (2009: 10) states that "one cannot expect individual departments to invest in and establish comprehensive GTA professional development programmes if other departments and universities in the UK do not do the same". Blended cohort models (Hubball *et al.,* 2015), workshops, one-to-one consultations (Cruz & Rosemond, 2017), network building, journal articles, podcasts and seminar recordings are all examples of flexible learning methodologies used in leadership courses (Haage *et al.,* 2021).

Considering that time, resources, and budget are key concerns for institutions, leadership training could simply be integrated into pre-existing teaching courses, especially since the skills required to lead others and facilitate learning are synergistic. Furthermore, studies have shown that even condensed training (20 hours) makes a significant difference in teacher effectiveness when GTAs can then practice, apply, and reflect afterwards (Meadows *et al.,* 2015). Another crucial element is feedback and reflection (Braun *et al.,* 2016). Most GTA work is done in isolation (Simmons, 2011), especially since the beginning of the COVID-19 pandemic. Prompt feedback from a recognised expert in academic leadership will help to foster a sense of scholarly community (Hubball, *et al.,* 2015), and regular meetings between GTAs enables them to gain knowledge from each other's experiences, reflect on teaching identity and practices, and identify areas for future development (Kinsella *et al.,* 2022).

GTA-specific solutions

Unfortunately, developing these initiatives takes time, and the issues associated with poor leadership are current and common. It is easy to assign blame to higher powers for widespread cultural issues, and it could therefore be tempting to give them the responsibility to make changes. However, there are generic actions that all ECRs and GTAs could take to promote positive change in both their research and teaching environments to improve their own experience, as well as the experience of current and future colleagues and students.

Firstly, GTAs should reflect on their own behaviours, and those within their immediate surroundings. Poor leadership behaviours come in many forms and levels of severity and recognising them can take practice. Before escalating matters to a senior academic, it may be worthwhile initially seeking support networks outside of your official line manager. Many institutions run mentorship schemes that can help with both academic and teaching challenges. If an unbiased feedback culture and a set of guidelines for responsible behaviour are not already set up, this should be suggested. Anonymity in responses, inclusion of everyone in the question-making process, and granting access to all the feedback will ensure greater participation and that someone cannot manipulate the outcome. In research group meetings, more informal smaller sessions between colleagues at similar career levels could be organised to promote a less intimidating environment. For instance, summarising an interesting paper could be an alternative to presenting new data if someone is still preparing their results. Additionally, the focus can be shifted to research being a process, where the steps taken to

achieve the desired outcomes are discussed, rather than just the outputs themselves once they have been achieved.

Secondly, GTAs should be proactive in creating their own opportunities to exercise academic leadership. To reduce feelings of isolation, discuss leadership and pedagogical techniques, and create opportunities for reflection, GTAs could set up informal meetings themselves (e.g., Kinsella *et al.,* 2022). Ideally, they should involve the module leader to discuss how to approach upcoming tasks, where there is room for creative control and what has or has not worked well in previous years. This will decrease feelings of uncertainty and increase likelihood of support and openness to new ideas from module leaders (Park & Ramos, 2002), thus forming a stronger partnership between levels of the academic leadership hierarchy. Importantly, GTAs should arrange receiving feedback from module leaders, other GTAs and the students themselves.

Conclusion

Ultimately, effective leadership is an essential prerequisite for a university's success, especially as academia shifts the focus towards approaching scientific challenges in larger and more complex collaborations, which requires new forms of leadership (Braun *et al.,* 2016). Yet, leadership is a skill which is under-developed by graduates (Roulston, 2018) and staff alike (Bryman, 2007; Braun *et al.,* 2016). This essay has outlined why it is essential for academic institutions to provide formal, mandatory leadership training for new leaders before beginning their role, and why GTAs should be considered as an important part of this group. As academics

on the border of two traditionally delineated communities (research and education; Standen, 2018), GTAs have exciting capacity for innovation, and therefore enormous potential for acting as agents for change regarding leadership in academia. GTAs are the 'ground zero' for preventing the spread of potentially toxic leadership behaviours to subsequent generations of students, and therefore potentially future researchers.

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References

Leadership Survey for Higher Education, Advance HE (2022). https://www.advance-he.ac.uk/knowledge-hub/leadership-survey-higher-education Accessed 13 October 2022.

Austin, A.E. (2002) Preparing the next generation of faculty. *The Journal of Higher Education, 73*(1), pp. 94-122. https://doi.org/10.1080/00221546.2002.11777132

Braun, S., Nazlic, T., Weisweiler, S., Pawlowska, B., Peus, C. & Frey, D. (2009) Effective leadership development in higher education: Individual and group level approaches. *Journal of Leadership Education, 8*(1), pp.195-206.

Braun, S., Peus, C., Frey, D. & Knipfer, K. (2016) Leadership in academia: Individual and collective approaches to the quest for creativity and innovation. In *Leadership lessons from compelling contexts*. Emerald Group Publishing Limited. https://doi.org/10.1108/S1479-357120160000008013

Brookfield, S. (1998) Critically reflective practice*. The Journal of Continuing Education in the Health Professionals, 18,* pp.197–205. https://doi.org/10.1002/chp.1340180402

Bryman, A. (2007) Effective leadership in higher education: A literature review. *Studies in Higher Education, 32*(6), pp.693-710.

Christian, K., Johnstone, C., Larkins, J.A., Wright, W. & Doran, M.R. (2021) A survey of early-career researchers in Australia. *Elife*, *10*. doi: 10.7554/eLife.60613

Clark, L. (2021) Bridging the power gap: GTAs and student-staff partnership. *Postgraduate Pedagogies*, *1*(1), pp.91-109.

Cruz, L. & Rosemond, L. (2017) Coaching academia: The integration of coaching, educational development, and the culture of higher education. *Journal on Excellence in College Teaching*, *28*(4), pp.83-108.

Dotger, S. (2011) Exploring and developing graduate teaching assistants' pedagogies via lesson study. *Teaching in Higher Education*, *16*(2), pp.157-169.
https://doi.org/10.1080/13562517.2010.507304

Frassl, M.A., Hamilton, D.P., Denfeld, B.A., de Eyto, E., Hampton, S.E., Keller, P.S., Sharma, S., Lewis, A.S., Weyhenmeyer, G.A., O'Reilly, C.M. & Lofton, M.E. (2018) Ten simple rules for collaboratively writing a multi-authored paper. *PLOS Computational Biology*, *14*(11), p.e1006508.
https://doi.org/10.1371/journal.pcbi.1006508

Haage, V., Voss, L., Nguyen, D. & Eggert, F. (2021) The need for sustainable leadership in academia: A survey of German researchers reveals a widespread lack of training for leadership skills. *EMBO reports*, *22*(12), p.e53592.
https://doi.org/10.15252/embr.202153592

Healey, M., Flint, A. & Harrington, K. (2014) *Engagement through partnership: Students as partners in learning and teaching in higher education.* York: The Higher Education Academy. Retrieved from
https://repository.londonmet.ac.uk/5176/ Accessed 9 December 2022.

Hubball, H. T., Clarke, A., Webb, A. S., & Johnson, B. (2015) Developing institutional leadership for the scholarship of teaching and learning: Lessons learned with senior educational leaders in multi-national and multidisciplinary research university settings. *International Journal for University Teaching and Faculty Development, 4*, p.237.

Juntrasook, A., Nairn, K., Bond, C. & Spronken-Smith, R. (2013) Unpacking the narrative of non-positional leadership in academia: Hero and/or victim?. *Higher Education Research & Development*, *32*(2), pp.201-213. https://doi.org/10.1080/07294360.2011.643858

Kinsella, R., Finegan, T., Ranta, M., O'Sullivan, B., Hedge, M., Kalyani, U.H. & Ryan, S. (2022) GTA teaching practice development in the time of Covid-19: A collective reflective on how "having the chats" led to much more. *Postgraduate Pedagogies*, *2*(1), pp.47-71.

Kneale, P.E. (2018) Where might pedagogic research focus to support students' education in a REF-TEF world. *Journal of Geography in Higher Education*, *42*(4), pp.487-497. https://doi.org/10.1080/03098265.2018.1460807

Lashuel, H.A. (2020) Mental health in academia: what about faculty?. *Elife*, *9*, p.e54551. https://doi.org/10.7554/eLife.54551

Lee, A., Pettigrove, M. & Fuller, M. (2010) Preparing to Teach in Higher Education. Lichfield: UK Council for Graduate Education. http://hdl.handle.net/10026.1/1431 Accessed 28 November 2022.

Macfarlane, B. (2011) Professors as intellectual leaders: Formation, identity and role. *Studies in Higher Education*, *36*(1), pp.57-73. https://doi.org/10.1080/03075070903443734

McGough, S. (2002) The future of political studies: Graduate teaching in the new millennium. *C-Sap Project 2001Á2, University of Birmingham and UK Political Studies Association*. Accessed 9 December 2022.

Meadows, K.N., Olsen, K.C., Dimitrov, N. & Dawson, D.L. (2015) Evaluating the differential impact of teaching assistant training programs on international graduate student teaching. *Canadian Journal of Higher Education*, *45*(3), pp.34-55. https://eric.ed.gov/?id=EJ1085351

Muzaka, V. (2009) The niche of graduate teaching assistants (GTAs): Perceptions and reflections. *Teaching in Higher Education*, *14*(1), pp.1-12. https://doi.org/10.1080/13562510802602400

Park, C. & Ramos, M. (2002) The donkey in the department? Insights into the graduate teaching assistant (GTA) experience in the UK. *Journal of Graduate Education, 3*(2), pp.47-53.

REF. (2014) Research excellence framework. Retrieved from http://www.ref.ac.uk/ Accessed 28 November 2022.

Roulston, D. (2018) 'Engaging students in research with 'real-world' outputs: Making an impact outside of the lecture theatre', in Tong, V.C.H., Standen, A & Sotiriou, M. (ed.) *Shaping Higher Education with Students: Connecting research and teaching.* UCL Press: London, pp.208-221.

Simmons, N. (2011) Caught with their constructs down? Teaching development in the pre-tenure years. *International Journal for Academic Development*, *16*(3), pp.229-241. https://doi.org/10.1080/1360144X.2011.596706

Standen, A. (2018) 'Where teaching meets research: Engaging postgraduate teaching assistants with research-based education', in Tong, V.C.H., Standen, A. & Sotiriou, M. (ed.) *Shaping Higher Education with Students: Connecting research and teaching.* UCL Press: London, pp.41-52. http://library.oapen.org/handle/20.500.12657/30611 Accessed 9 December 2022.

TEF. (2017) Teaching excellence framework, higher education funding council for England. Retrieved from http://www.hefce.ac.uk/lt/tef Accessed 9 December 2022.

Tierney, A.M. (2016) *'More than just a Teaching Fellow': the impact of REF and implications of TEF on life science Teaching-Focused Academics in UK HEIs* (Doctoral dissertation, Durham University). http://etheses.dur.ac.uk/11826/ Accessed 28 November 2022.

Webb, A.S. & Tierney, A.M. (2019) Investigating support for scholarship of teaching and learning; We need SoTL educational leaders. *Innovations in education and teaching international*.

Wenger, E., McDermott, R. & Snyder, W.M. (2002) Seven principles for cultivating communities of practice. *Cultivating Communities of Practice: a guide to managing knowledge*, *4*.

Retrieved from https://www.clearwatervic.com.au/user-data/resource-files/7Principles_Community-of-Practice.pdf
Accessed 9 April 2023.

Winter, J., Turner, R., Gedye, S., Nash, P., & Grant, V. (2015) Graduate teaching assistants: responding to the challenges of internationalisation. *International Journal for Academic Development, 20*(1), pp.33-45. https://doi.org/10.1080/14703297.2019.1635905