DARTE

Disciplinary **A**pproaches to **R**esearch and **T**eaching **E**xcellence

Application for Fellowship of the Higher Education Academy

Descriptor 3: Senior Fellow

Applicant name	**Dr Katharine Hubbard**
Department	**Biology (School of Environmental Sciences)**

September 2016

Application for Descriptor 3: Senior Fellow

Senior Fellow is awarded to individuals able to provide evidence of a sustained record of effectiveness in relation to teaching and learning, incorporating, for example, the organisation, leadership and/or management of specific aspects of teaching and learning provision. Such individuals are likely to lead or be members of established academic teams.

Applicants must have at least three years of experience (full time equivalent) of working in a teaching and/or learning support role in higher education.

Guidance on how to fill in this application form is available from the DARTE 'Guide to your fellowship application'.

If you are applying for recognition via the oral presentation route, Sections One, Two and Four of this form must still be completed.

Please do not forget to add the following documents to your completed application:

	Check √
The completed application form	Yes
The two references	Yes
The full peer observation report form	Yes

When ready to submit email to darte@hull.ac.uk

SECTION ONE: Information About the Applicant	
Name: Katharine Hubbard	Length of Employment at Hull: 18 months Part-Time/Full-Time: Full time Total Number of Years Employment in Higher Education: 10 (6 on a full time basis, 4 on a freelance basis)
Role Currently Held: Lecturer (Band 8)	
Subject Area/Department: Biology	
Please list all Level 4 and above qualifications or awards you already hold, together with date of attainment: BA Natural Sciences (obtained 2004) PhD (obtained 2008) FHEA (obtained Sept 2015) Royal Society of Biology Higher Education BioScience Teacher of the Year (2016) Society of Experimental Biology President's Medallist SEB+ section (2017)	
I am applying through the written submission route YES I am applying through the oral presentation route ☐	

Reflective commentary.

Please provide an account of the education, training, employment, roles and experience which have contributed to your professional development as teacher, mentor, facilitator of learning and academic leader
Word Count: 1497 words

My teaching career started in 2004 as a PhD student at the University of Cambridge; I was a demonstrator in undergraduate practical classes, and gave 'supervisions' (weekly tutorials to groups of 1-3 students that complemented the lecture material) throughout my PhD. This included setting, marking and providing feedback on student work in the form of essays, practical questions, presentations and other formats, although this work was entirely formative in nature as the lecture courses were assessed through end-of-year exams. My teaching methods were largely self-developed, being based on my own reflections of how I learned most effectively as an undergraduate, and through developing my practice on the basis of student feedback. As my level of experience grew I started to share ideas with other PhD students who taught, and many of my teaching materials became part of a pooled set of resources used by other staff members in my department.

After a post-doctoral research position in the USA, I returned to Cambridge in 2010 where I took on considerable levels of supervision teaching on a freelance basis. I also gave my first lectures during this period. I was then made a Teaching By-Fellow at Churchill College in 2011, where I became a Director of Studies, responsible for providing academic and pastoral support to all biology students within the college. As part of this role I was also a member of undergraduate admissions interview panels, where I started to develop an interest in Widening Participation and the need to provide equal opportunity for students.

Alongside my role in Churchill College, in 2013 I became a Teaching Associate in the Department of Plant Sciences at the University of Cambridge. As such I was responsible for teaching large undergraduate laboratory practical classes (up to 300 students) and developing new teaching resources. This contract included my first contribution to formal university assessment procedures, being responsible for assessing examination essays, setting practical exam questions and marking coursework. I gained Fellowship of the HEA during this position.

A significant change to my pedagogical strategy happened when I was asked to provide sabbatical cover for a Senior Lecturer, needing to give 6 lectures on signal transduction to a large 1st year class (300 students) as the final lecture block of the year. I knew from discussions with students on the course that they didn't understand the connections between different areas of the course, and that they didn't want to be learning new content so close to the exam. I therefore rewrote lectures to include a clearer narrative, including playing a relevant song at the start of each lecture as an aid to memory (e.g. a lecture on adrenaline signalling started with Eye of the Tiger) and to create a 'buzz' about the lectures; this is now my signature lecture style. I also made the connections with other lecture blocks explicitly clear to students, and included short revision segments of topics that I knew the cohort were struggling with. As a result, I received the highest feedback scores on the entire course, and won a Student Led Teaching Award for 'Outstanding Lecturing'. This set of lectures represented a 'threshold moment' for me, where I started to put student engagement at the heart of my teaching.

After this, I wanted to take my teaching to the 'next level', so I started to attend external meetings organised by the HEA, Biochemical Society and Society for Experimental Biology, which exposed

me to new teaching approaches and assessment practice, particularly using digital tools. Attending these meetings gave me the confidence to question the pedagogical strategies I had been using, and to develop new ways of delivering material. For example, I designed online pre-practical tutorials for students to complete before my laboratory classes, as these had been successful interventions in other institutions. This delivery style was new to Cambridge, but it proved popular with students. As a result, I supported colleagues in other departments to create digital tools for their own courses; a collection of 'Lecture Bite' podcasts I helped the Biochemistry department to establish now has over 13,000 hits. I also introduced new active learning sessions to core courses, including interactive essay writing workshops to support the development of academic writing skills.

As I expanded my use of digital tools, I realised the materials I used might not be pitched as effectively as they could be as they were being generated from a staff perspective. I persuaded a colleague in another department to collaborate on this and put in a funding application, which supported the recruitment of 4 undergraduate interns to work on a student partnership project to review our current practical teaching provision, and to create new digital resources for use by future cohorts. The project has been widely disseminated; I have published a manuscript describing the project with the students as co-authors, and the project has been presented at internal institutional events, national conferences and external seminars. Partly on the basis of this project, I was named Royal Society of Biology HE BioScience Teacher of the Year in 2016 [See case study 3].

As part of my role in Cambridge, I was also responsible for providing support and training for PhD students and PostDoctoral Researchers who were starting on their teaching careers [see case study 1]. I established the 'Plant Science Supervisors Network' to share best practice, and to encourage those who teach to gain AFHEA accreditation. I wrote an opinion piece for F1000research on 'Challenges and opportunities for early-career Teaching-Focussed academics in the biosciences' in collaboration with others at institutions around the country; this piece was highlighted in a keynote talk at the 'Enhancing Student Learning Through Innovative Scholarship conference (2015) as a valuable contribution to the national conversation on reward and recognition for teaching in Higher Education.

I moved to the University of Hull in January 2016 as a Lecturer in Biological Sciences, where I have continued to develop new teaching resources for use in my own teaching and across the subject area. Having had previous experience of using modern Virtual Learning Environments (VLEs), I took a lead within Biological Sciences when we moved to using Canvas, providing workshops to staff and students, writing exemplars and template pages for other staff to import into their own sites and providing 1:1 to support to other academics adjusting to the new technology. I routinely disseminate best practice from the pedagogical literature and wider teaching community to colleagues and embed these within taught modules. For example, I redesigned the feedback process for 1st year tutorial essays to include a 'review-and-response' model that was based on the HEA 'Developing Engagement with Feedback Toolkit'; this is now used by all Academic Support Tutors in Biology [see case study 2].

Since moving to Hull I taken responsibility for large modules, most notably 06061 Preparing for Learning in Higher Education, a foundation year module involving 450 students and 12 academics, alongside Student Engagement Officers and Library Skills staff [see case study 4]. I have redeveloped this module, incorporating online components designed to provide effective formative and summative feedback, and a core 'curriculum' for use in subject specific workshops

delivered by other academics to complement my own teaching. This redesign has seen a significant increase in the number of students completing the module, and seen a significant increase in student performance. Partly on the basis of this work, I was short-listed for the 'Innovative Teaching' award at this year HUU awards. I have also taught laboratory classes, lectures, supervised research projects and run workshops to students of all years within Biology.

In addition to developing my own teaching, I am now taking a role in coordinating teaching provision across the Biology subject area. Working closely with the Director of Teaching and Learning for the School of Environmental Sciences, I am developing new programmes within the Biology portfolio (e.g. Biology with Teacher Training), and as Programme Director for these am responsible for compliance with University and national quality standards. I am also leading a review into current Biology Teaching Provision, with a view to ensuring programmes across the subject area reflect the latest subject benchmark statements, are able to be accredited by external bodies and are ready for subject level TEF.

Engagement in Scholarship of Learning and Teaching (SoTL) has been increasingly important through my career. I am currently working on a number of pedagogical research projects, some of which have been published and/or disseminated at national conferences and at invited seminars at other institutions. For example, a collaboration with Sports Exercise and Health Science in Hull is considering the impacts of authentic research dissemination, and module 06061 is now being used as case study for a HEFCE funded project into the use of Learner Analytics. I coordinate the STEM Education Research Group at Hull, and continue to mentor early career academics engaging with scholarship [see case study 1]. Partly for my scholarship work, I will be awarded the Society of Experimental Biology Presidents Medal 2017 for the SEB+ (Education, Diversity and Public Affairs) section of the society.

SECTION TWO: Demonstrating a sustained track record (720-900 words)

In this section you should provide brief examples of professional activity, appropriate to your chosen category of fellowship, to demonstrate that you satisfy the 'Dimensions of Practice' contained within the UK Professional Standards Framework. Each example will need to be mapped against the UKPSF. Please see the DARTE Handbook for advice on this.

For Senior Fellow successful engagement with all the Dimensions of Practice is required.
Applicants must provide evidence of:
• All Areas of Activity (AA)
• All Core Knowledge (CK)
• All Professional Values (PV)

Your application should be centred around your activity in relation to the following:
UKPSF D3 VII Successful co-ordination, support, supervision, management and/or mentoring of others (whether individuals and/or teams) in relation to teaching and learning. At least one of your case studies should be related to the leadership of learning and teaching.

Twelve to fifteen examples should be sufficient to provide evidence of the range of learning and teaching activities you have undertaken

Each example in this section must be no longer than 60 words.

Professional and Developmental Activities (720-900 words)			
Example (please number activity and include dates)	**AA 1-5**	**CK 1-6**	**PV 1-4**
1. I have taken a lead in the transition to new VLE platforms within SES and my former institution. I have run workshops for staff in designing VLE sites and digital materials to support effective learning. I have also provided exemplars and templates for other staff to import into Canvas to encourage best practice. (2014-present)	A4	K3, K4	
2. I have implemented the use of online pre-practical tutorials to help students prepare for and reduce cognitive stress in laboratory classes. These consist of videos explaining core concepts, and quizzes to test understanding, including embedded formative feedback via the VLE. These have been designed on the basis of my own work in previous institutions, and on the pedagogical literature. (2014-present)	A1, A2	K2, K4	V3
3. I have redesigned the feedback process for 1st year tutorial essays, which has been implemented by all Academic Support Tutors	A3	K2, K3	

across biology. This takes the form of a 'review and response', mirroring the feedback process used by academic journals. I have provided staff with supporting resources, and run workshops with students on using feedback effectively to support their learning. (2016-present)			
4. I have collaborated with Sports, Health and Exercise Science to evaluate the impact of authentic undergraduate research dissemination through The Student Thesis Conference. Outputs of this project have directly informed support provided to students within SHES. This work has been submitted for publication in Higher Education Peadagogies, and has been presented at national and international conferences. (2016-present)	A5	K5	V3
5. I currently am a member of the ULTAC Assessment Review group reviewing assessment and feedback processes across the university as part of a Higher Education Academy project. This review includes consideration of authenticity of assessment, compliance with quality assurance processes and implications for university policy. This group will form recommendations for best assessment practice across the institution. (2017)	A3, A5	K2, K6	V4
6. I have led a team of staff in redesigning a large foundation year skills module (06061 Preparing for Learning in HE, 450 students), which teaches core skills such as academic writing and referencing. This has required coordination of staff from a number of subject groups and professional services to support students from different backgrounds transitioning into Higher Education. (2016-present)	A1, A2	K1, K2	V2
7. As part of redeveloping 06061, I have redesigned assessment and marking criteria through the module to be implemented by colleagues in other subject areas to ensure consistency and fairness of assessment in different subject areas. Assessment strategies have been based on models from the pedagogical literature used successfully at other institutions. (2016-present)	A3	K2	V3
8. I have acted as a personal and academic tutor in Hull and my previous institution,	A2, A4		V1, V2

providing pastoral advice and support to students. This has included collaborating with colleagues and welfare services to support students with disabilities, serious mental health problems and other barriers to participation in education. I have also advised other tutors on appropriate support strategies when dealing with their own tutees. (2012-present)			
9. I have led student-partnership projects, where undergraduate collaborators have reviewed laboratory teaching provision, and redesigned pedagogical strategies. We co-created online quiz and video resources to teach core concepts in formats preferred by students, and to provide formative assessment opportunities. These were designed to support students from diverse backgrounds, particularly those from schools with limited resources to teach practical science. (2015)	A1, A2	K1, K3, K4	V2
10. I regularly attend and present at national education focussed conferences and meetings, including events run by the Society for Experimental Biology (SEB), Physiological Society and Royal Society of Biology. I have organised education focussed sessions at the SEB annual conference, and will be presenting my teaching work as the SEB+ (Education section) President's Medallist 2017. (2014-present)	A5		V3, V4
11. I have contributed to University Validation Panels, providing feedback and recommendations on programme design for subjects in other Faculties, and ensuring that programmes align with Subject Benchmark Statements and University quality procedures. (2017)		K6	V4
12. I have designed and run Widening Participation events for schools across the country as part of The Cambridge Colleges BioScience Experience project, and run university taster sessions for local schools in Hull. These have aimed to increase aspirations of students from areas with low participation in Higher Education, contributing to institutional Widening Participation strategy. (2015-present)	A1	K1	V2, V4
13. I have mentored early career teaching staff, including PhD students and PostDocs who	A2, A4	K2	V2, V4

teach and/or assess work. I have also provided support for early career staff working with students with specific learning difficulties and other potential barriers to success. I have encouraged staff to seek AFHEA status, and have provided references in support of their applications. (2012-present)			
14. I have written teaching materials as part of the American Society of Plant Biology's 'Teaching Tools in Plant Biology' collection of online resources (Hubbard and Dodd, 2016). 'Teaching Tools' are used internationally, particularly in countries with limited access to textbooks or journal subscriptions. These resources include lecture slides, teaching guides, student handouts and suggested teaching activities.	A1	K1	V1, V2
15. I coordinate and set the agenda for the STEM Education Group within the Faculty of Science and Engineering, with the aim of encouraging staff to engage in a community of evidence based practice, develop and disseminate their Scholarship of Teaching and Learning. I also regularly attend and present at external conferences and meetings focussed on undergraduate education. (2016 onwards)	A5	K5	V3

SECTION THREE: Evidence of success and effectiveness

Case studies in this section should be based around the 'typical activities' for the category of fellowship for which you're applying. The key consideration is how the activities are enabling the demonstration of the relevant Descriptor and the Dimensions of the Framework.

For each of the four case studies you should:

- Describe the context of the case study;
- Evaluate the success/effectiveness of the activity (this should entail a critical and reflective self-analysis), making use of feedback from peer observation or from students;
- Provide evidence of scholarly activity associated with the case study by embedding within it reference to key sources related to pedagogy in your discipline or more generally in higher education.

Please give the word count for each case study (maximum of 800 words for each case study).

For those seeking recognition through the oral presentation route, you should seek to convey each case study in a maximum of 10 minutes.

Case Study One: Supporting Early Career Academics to develop their careers and engage in Scholarship of Learning and Teaching.
Word count: 789

Despite the current emphasis on Teaching Excellence in UK universities, reward and recognition for education-focussed academics is widely regarded as not being equivalent to that of research-focussed staff (Cashmore, Cane, & Cane, 2013; Cashmore & Ramsden, 2009; Fung & Gordon, 2016; Gretton & Raine, 2015) [V4]. I became particularly aware of this issue while attending a meeting of the Society of Experimental Biology Education section, where I discussed the relative lack of status and support with a number of other education focussed academics. As a result, I led a collaboration to write an opinion piece exploring these issues from the perspective of early-career academics (Hubbard, Gretton, Jones, & Tallents, 2015). This article was highlighted in the keynote talk at the 'Enhancing Student Learning through Innovative Scholarship' conference 2015 as an important perspective on the reward and recognition debate [A5,V4].

After writing this article, I became interested in the need to support other early career academics who teach, despite being on a fixed-term Teaching Associate contract myself. While still in Cambridge I established the Plant Sciences Supervisor Network, bringing together PhD students and PostDoctoral researchers who gave undergraduate tutorials to share experiences and best practice in designing teaching activities, assessment and feedback methods and supporting students with individual needs such as dyslexia [A1,A2,A3,K2,V1]. I have also helped individuals from the network obtain AFHEA status, and one has now been offered a Teaching By-Fellowship at Churchill College Cambridge. The network has therefore had lasting impact in terms of career development of the participants, and acted as a bridge between the departments activities and those of the wider professional bodies [K6,V4].

"Katharine was amazingly supportive when I was teaching small groups of undergraduate students. She provided a useful set of teaching ideas and resources for each topic and was always happy to discuss lesson plans or answer my questions. Katharine's co-ordination dramatically improved my experience of teaching and made the process a lot less stressful (and a lot more fun) than it had been before."
– PhD student, University of Cambridge

Engagement in the Scholarship of Learning and Teaching (SoTL) is one activity that can contribute to academic promotion (Royal Society of Biology, 2016). Trigwell et al. (2000) describe different levels of SoTL, from simply being aware of the relevant teaching and learning literature, through to communicating the results of scholarship projects to a wider audience. However, there are barriers to STEM academics engaging with SoTL, including a lack of familiarity with the language, research methods and data analysis strategies of pedagogical research (Tierney, 2017).

Since moving to Hull, I have shared my own experiences of moving from discipline based research to pedagogical research, and supported and mentored others to engage in scholarship through a number of activities. I organise the STEM Education Research Group, which meet fortnightly to discuss SoTL projects and develop a community of practice [A5,V3]. This group has doubled in size since I started arranging meetings, and includes academics from a range of STEM disciplines as well as Student Engagement Officers and staff from LEAP. I have invited a number of Teaching Fellows to join the group who are now engaging with SoTL projects of their own, therefore my actions have directly resulted in the scholarly activity of others. For example, I collaborate with Sports Health and Exercise Science to evaluate the impact of their Student Thesis Conference, which will result in the first SoTL publications for an academic in that subject group (Douglas et al., in review), and will provide evidence of impact for subject level TEF [A5,K5,V3].

"*Thank you for organising [STEM Education meetings]; the meetings are a real highlight of my fortnights*" – Teaching Fellow, School of Physical Sciences

"*Just want to thank you for your terrific input yesterday [into PCAP] – just what I wanted. I also appreciated you staying for lunch and speaking to some participants. I have had some really positive feedback*" – Dr Stuart McGugan, LEAP

My expertise in, and support for, the scholarship of others has been recognised through speaker invitations within Hull and externally. I have been invited by LEAP staff to share my experiences in getting started in pedagogic research and dissemination of SoTL with early-career academics enrolled on the University of Hull Postgraduate Certificate in Academic Practice (PCAP). I have been invited by the Higher Education Academy to a 'New to BioSciences Teaching' event. I have also given invited seminars at the Universities of Liverpool and Greenwich on evidence-based approaches to teaching, and have given talks at external meetings about the need to support early-career academics. As such, I have supported, mentored and encouraged a range of academics to adopt evidence based approaches to teaching, engage in the higher categories of scholarship described by Trigwell and get recognition for their teaching activities.

Cashmore, A., Cane, C., & Cane, R. (2013). Rebalancing promotion in the HE sector: is teaching excellence being rewarded? York: Higher Education Academy. Retrieved from https://www.heacademy.ac.uk/node/4267

Cashmore, A., & Ramsden, P. (2009). Reward and recognition in higher education: Institutional policies and their implementation. York: Higher Education Academy. Retrieved from https://www.heacademy.ac.uk/system/files/RewardandRecognition_2_2.pdf

Douglas, C., Yearsley, J., Scott, G., & Hubbard, K. E. (n.d.). The Student Thesis Conference as model for authentic and inclusive student research dissemination. In Review at Higher Education Pedagogies.
Fung, D., & Gordon, C. (2016). Rewarding educators and education leaders in research- intensive universities. York: Higher Education Academy. Retrieved from https://www.heacademy.ac.uk/system/files/rewarding_educators_and_education_leaders.pdf
Gretton, S., & Raine, D. (2015). Reward and recognition for university teaching in STEM subjects. Journal of Further and Higher Education, 1–13. http://doi.org/10.1080/0309877X.2015.1100714
Hubbard, K., Gretton, S., Jones, K., & Tallents, L. (2015). Challenges and opportunities for early-career Teaching-Focussed academics in the biosciences. F1000Research, 4, 76. http://doi.org/10.12688/f1000research.6227.2
Royal Society of Biology. (2016). Royal Society of Biology Higher Education Teacher Career Progression Framework. London. Retrieved from https://www.rsb.org.uk/images/HE_Teaching_careers_progression_document_08.02.2016.pdf
Tierney, A. M. (2017). Threshold Concepts in Academic Practice: Engagement with the Scholarship of Teaching and Learning. Practice and Evidence of the Scholarship of Teaching and Learning in Higher Education, 12(2), 165–184. Retrieved from http://community.dur.ac.uk/pestlhe.learning/index.php/pestlhe/article/view/167/
Trigwell, K., Martin, E., Benjamin, J., & Prosser, M. (2000). Scholarship of Teaching: A model. Higher Education Research & Development, 19(2), 155–168. http://doi.org/10.1080/072943600445628

Case Study Two: Improving the Feedback process for 1st year tutorial essays [798 words]

Learning to write in an academic style is one of the major challenges that first year students face, but is a key graduate skill defined by QAA subject benchmark statements [K6]. This is particularly true in STEM subjects including Biology, where the assessment style at A level is primarily through short answer questions in an examination, so 1st year students often have limited exposure to extended, referenced pieces of written work [V4]. Biology 1st year students at Hull are required to write an essay as part of module 58024: Skills for Biological Sciences, for which the teaching and assessment occurs through small group tutorials with Academic Support Tutors.

During the 2015-6 academic year, concern was raised by student representatives that ASTs were providing inconsistent levels of feedback for the tutorial essay assignment, leading to unequal support for students developing a key skill [V2]. Academics were also concerned that students were not engaging with the feedback provided, limiting the value of the assignment for developing academic writing skills on transition to university.

To address this, I led the re-design of the assessment and feedback process for this assignment, with the resulting approach being used by all ASTs involved in the module (approximately 20 members of staff) [A1,A3]. The redesign was informed by the 'HEA Feedback toolkit' and the 'Developing Engagement with Feedback' toolkit (The Higher Education Academy, 2013; Winstone & Nash, 2016), as well as feedback practices at other institutions I was aware of through attending external events [A5,V3]. In particular, the redesign was designed to turn the feedback process into a dialogue between tutors and students, as recommended by the HEA Feedback Toolkit [K2,A3]. I also wanted the feedback process to be a more authentic experience, so modelled the way we use formative assessment on the process used by academic journals when reviewing manuscripts.

In the new model, students were required to submit a draft of their essay as a formative assignment part way through the semester, alongside a self-assessment checklist based on Northey and von Aderkas (2015). Tutors then completed a 'essay review' form which highlighted good points about the essay, 'major revisions' which were likely to make a large impact on marks, and then 'minor revisions', allowing students to prioritise the feedback. The review form also included recommendations to engage with library skills teams where appropriate, including a link to the relevant booking form so that students were directed to relevant support services [A4]. When submitting the final version of the essay, students were also required to complete a

'response' form where they directly responded to the feedback provided on the formative draft, including the actions they had taken to improve their assignment and an estimated grade [A3,K2,K3].

As this was a new model for students and staff, I provided supporting materials to all relevant parties. I provided all academic staff within Biology with documentation providing advice on effective, evidence-based approaches to giving feedback, and a version of the form that was made easy to complete with pre-populated comments. I also gave advice to individual academics on how to use the review forms, which gave better consistency of assessment practice across the module and clearer suggestions for students on how to improve their work [A3,K2]. Students received a lecture on 'Making Effective use of Feedback' during the skills module, including a summary of the review and response process and suggestions on how to use feedback effectively to improve their learning [A2,A3]. Importantly, this lecture acknowledged that there are emotional barriers to engaging with feedback which must be overcome if the feedback is to be of use to the individual student (Värlander, 2008; Winstone & Nash, 2016), so aimed to create a more supportive culture around student engagement with feedback [A4,V1,K3].

> *"[Katharine] has implemented change in formative assessment in a number of modules, evidenced by increased student engagement and marks (compared to identical assessments in which changes weren't implemented), and has guided other staff in improving their assessment types."*
>
> – Dr Domino Joyce, School of Environmental Sciences

The success of the approach can be seen directly in the module results for this year. Compared with the previous academic year, there was a 10% increase in the mean scores for the tutorial essays, while there was no change in the mean marks for other assignments on the module [K5]. Feedback from staff was broadly positive, although there remain concerns about the time taken to complete the review form, so the sustainability of the approach needs to be optimised in future years. This has been submitted as an example of good practice to an ULTAC Assessment and Feedback group. It has also been presented at a Faculty Learning and Teaching event on feedback, and I will be supporting individuals from across the faculty to embed this approach in their programmes.

Northey, M., & von Aderkas, P. (2015). Making Sense: A Student's Guide to Research and Writing (2nd edition). Oxford, UK: Oxford University Press.

The Higher Education Academy. (2013). HEA Feedback toolkit. York : Higher Education Academy. Retrieved from https://www.heacademy.ac.uk/system/files/resources/feedback_toolkit_whole1.pdf

Värlander, S. (2008). The role of students' emotions in formal feedback situations. Teaching in Higher Education, 13(2), 145–156. http://doi.org/10.1080/13562510801923195

Winstone, N. E., & Nash, R. A. (2016). The Developing Engagement with Feedback Toolkit (DEFT). York: Higher Education Academy.

Case Study Three: Bridging the Gap – A Student Partnership project to improve Biology Practical Class Teaching at The University of Cambridge [793 words]

Practical classes are an essential component of biology teaching, providing students with an opportunity to gain technical skill, gain a deeper understanding of lecture material and to develop transferable skills [K1,K2]. The QAA subject benchmark statements for Biology include a variety of practical skills that Biosciences graduates should be able to do, including competence in core

experimental skills [K6]. However, many undergraduates arrive at university with limited experience of practical work at schools, which has been highlighted by a number of recent reports (Grant & Jenkins, 2011; Science Community Representing Education, 2013; The Royal Society, 2014) [V4]. My own research demonstrated that students from state schools conducted practical work much less frequently than their peers from independent schools, and that low levels of practical experience were associated with negative emotional responses to university laboratory classes (Hubbard et al., 2017) [V1].

Pre-practical tutorials have been successful interventions in laboratory based teaching in a number of other institutions, where their use has increased student confidence and engagement with practical work (Cann, 2014; Whittle & Bickerdike, 2014) [K2,K3,V3,A5]. After presenting the idea to a colleague in the Physiology department, I established and led a project to introduce pre-practical tutorials across an entire inter-departmental course (1st year '*Physiology of Organisms*'). With funding I obtained from the University Teaching and Learning Innovation Fund, 4 student interns were recruited to work on the project who acted as partners throughout, acting as researchers, pedagogical consultants and developers of new teaching materials.

Through the project we co-created over 200 online quiz questions relating to the practical classes, and created 14 videos or animations to teach students the key ideas required to understand the lab class in a multimedia format that they would respond to [A1,K1,K4]. These included 'technique videos' demonstrating the equipment they would encounter, and how to use it safely and accurately, therefore reducing potential anxiety and allowing students to prepare for practicals in their own time [K2,K3,A2]. Quiz questions were written to complement this material using the tools in the VLE, and were written to incorporate instantaneous feedback and hints when an incorrect answer was given [A3,K2,K4], providing students with targeted feedback on misconceptions that may have prevented them from understanding the practical [K2,K3].

Since I introduced online components to practical class teaching there have been over 11,000 hits on the video collection, and despite being hosted as optional resources, the quizzes were completed by over 50% of the class. Student feedback on the resources has been positive, with 87% of students describing the resources as 'useful' or 'very useful' [K5]. The blended learning approach has since spread to other courses, with the 1st year Medical course 'Homeostasis' now having quiz questions to support all practical classes, and the 1st year 'Molecules in Medical Sciences' course taught by the Biochemistry department now has a collection of lecture podcasts that have been accessed over 13,000 times, demonstrating the success of the teaching style [K2,K3, K5].

"*I find the practical quizzes helpful, in particular the pre-practical quizzes to ensure that I know what is going on in the practical. I find the calculations helpful because I find them quite challenging, especially because I didn't do A level physics which is why I find the explanations useful when I get the calculations wrong.*" – 1st year student

"*Students have made good use of this material and have particularly enjoyed the video explanations – indeed, they are clamouring for more! …. I can only thank and congratulate Katharine for her vision in driving this project, which has benefitted both myself as practical course organizer and hundreds of our first-year students*."
- Dr Matt Mason, University Physiologist

The project has been presented to national and international meetings, and has been published in *Higher Education Pedagogies* (Hubbard et al., 2017*)*. This paper was co-written by the 4 students, providing them with an authentic research dissemination opportunity to add to their CVs. The student interns presented the project to a meeting of the Directors of Learning and Teaching in Cambridge as a case study of innovative teaching practice, which will inform the development of the university digital teaching strategy.

"*Whilst Katharine was at Cambridge she made a significant impact on the teaching of Plant Sciences … 'Bridging the Gap' is a project in which other parts of the university are very interested and which we hope can be rolled out widely*."
- Prof Graham Virgo, Pro-Vice Chancellor for Education

This project formed the basis of my case study when I was awarded the Royal Society of Biology's HE BioScience Teacher of the Year award 2016. I have implemented the pedagogical strategy of pre- and post-practical quizzes and videos to support my practical teaching in Hull (e.g. for module 58026: Microbiology and Immunology), so the project continues to have impact.

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Case Study Four: Development of a large academic skills module to ease the transition into university study
[803 words]

Transition into University study is a major event in the educational lives of undergraduates, and for most students requires a significant adjustment. Challenges associated with transition involve academic expectations, the requirement to self-manage study and adjusting to new social environments (Hulme & De Wilde, 2014; Money et al., 2017). Successful transition is also associated with developing academic confidence, and an ability to self-regulate learning (Borghi, Mainardes, & Silva, 2016; Lizzio & Wilson, 2013; Nicholson, Putwain, Connors, & Hornby-Atkinson, 2013). Effective transition support requires institutions to develop an extended programme of activities that extend beyond induction week, and to create a culture of 'belonging' (Foster et al., 2012; Thomas, 2012). This is especially true for degrees with an integrated foundation year, where the extended nature of this transition underpins progression into and success at Level 4 and beyond.

Shortly after arriving at the University of Hull, I was given the role of module leader for 06061 Preparing for Learning in Higher Education, a core foundation module for all students in the Faculty of Science and Engineering, which requires coordination of a team of 12 academic staff.

The ~450 students on this module come from a range of educational backgrounds, and are diverse with respect to gender, ethnicity and socio-economic background. An effective 'Preparing for HE' module therefore needs to respect the diverse needs of this cohort, while ensuring all students are equipped with the key academic skills for university study [V1,V2].

With the literature on transition in mind, I redesigned the module to start by focussing on academic expectations, institutional support systems, time management and coping with stress [V3]. To facilitate this, I coordinated the activities of the module with those of the Student Engagement Officers (SEOs) and Library Skills Teams, bringing institutional support systems that will be relevant throughout degree programmes into the core taught components of this module [A4]. This approach has now been highlighted as good practice in the University of Hull Induction Tool Kit developed by the Student Engagement and Transition Team for use with both Level 3 and 4 students.

"*Katharine has worked in partnership with us by inviting us to attend and present in a core module, asking for our input on relevant content and allowing us to facilitate an event on support services. This approach has been extremely valuable in both in raising our profile and embedding ongoing support for this student cohort and has led to further collaboration in terms of our approach to developing a peer mentoring scheme for foundation year students*."
– Sarah Donkin, Student Engagement Officer

The learning outcomes of the module are designed to introduce students to skills needed at Level 4 from the start of their degree programmes, including academic writing, use of relevant sources and referencing, time management and professional ethics [A1,A2,K1]. As such, the module contributes to programme learning outcomes for a number of validated degree pathways in the university, and aligns with relevant QAA subject benchmarks [K6]. To assess these learning outcomes in a sustainable way for a module of this size, I developed a series of 'low stakes' weekly assessments in the form of online quizzes embedded in the VLE, using a model based on Voelkel (2013) [K4,V3]. This weekly assessment model also allows students the opportunity to develop their own self-regulation, which has been associated with a successful transition into HE (Lizzio & Wilson, 2013). To present this material to students in a discipline relevant way, I coordinated the activities of the module teaching team by asking them to contribute relevant examples from their own subject areas to contribute towards the module assessment [K3].

Quantitative and qualitative data suggests the redesigned module has been a success; there was a significant increase in the number of students passing the module (91% compared with 81% in the previous year) and therefore being allowed to progress to Level 4 study. I also conducted end-of-module surveys with the students, who said that the module had been useful but they wanted more emphasis on subject-specific referencing styles, which will inform the development of the module [K5]. However, to allow deeper understanding of the factors underpinning successful transition I am a co-leader on a HEFCE funded research project the use of learner analytics, which uses module 06061 as a case study. Learner analytics have the potential to give institutions better insight into student learning through systematic data collection, and can potentially be used to target interventions (Clow, 2013). This project will use data from the module (e.g. attendance, VLE engagement) to systematically identify predictors of success, and then work in partnership with students to develop appropriate institutional responses to analytic data [V3,K4]. This project has already highlighted changes required to university ethics policies to align with national ethical guidelines on the use of learner analytics (JISC, 2015) [V4]. The ultimate aim of this work is to

inform institutional and national analytics strategies to support successful transition of students from diverse backgrounds into either level 3 or level 4 [V1,V2].

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Other Information

Please use this space to provide any additional information you would like to submit in support of your application; e.g. activities undertaken in professional bodies or subject associations which further develop teaching and learning. Projects undertaken by a group or team are valued as much as individual activities. **(Max. 150 words)**