



Continuous Professional Development for Public Engagement

Report for the SEE PER Challenge CPD Programme
University of Bath



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Introduction

Over the past decade there has been a major focus amongst research funders on creating a culture of public engagement within research institutes and universities. Significant investments include the Beacons for Public Engagement (BPE), the National Co-ordinating Centre for Public Engagement (NCCPE), the RCUK Catalysts for Public Engagement with Research (PER Catalysts), the Catalyst Seed Fund (CSF) the Wellcome Trust Institutional Strategic Support Fund (ISSF) and Research Enrichment (formally Provision for Public Engagement); and most recently the Strategic Support to Expedite Embedding Public Engagement with Research (SEE-PER).

In 2015, Research Councils UK (RCUK) and Wellcome jointly commissioned [The State of Play report](#) to synthesise a variety of evidence sources including research such as the [Factors Affecting](#), evaluations of the key culture change investments and a wide range of literature. The report identified that whilst considerable progress had been made several key challenges exist pertaining to professional development. These included:

- Researchers who are not active engagers are not aware of the training available and see lack of formal training as a key barrier to engaging the public with research.
- There is widespread availability of formal training in public engagement, however uptake from within the research community is low.
- Researchers who are active in public engagement tend not to value the formal training they have received or attribute it to their confidence in engaging the public.
- The core purpose of formal training is to increase participation in public engagement amongst the research community. There are limited policy frameworks or measures relating to quality of public engagement, and therefore professional development has a limited place to play within the landscape beyond participation.
- There is a preference amongst researchers for 'just in time' training and support, including one-one coaching conversations, however these types of interactions are often formally valued by researchers and institutions as part of professional development.
- There is no recognition for the role of external partners in supporting researcher CPD for example via formative feedback, providing experiential opportunities for engagement and sharing knowledge (i.e. about specific audiences, processes etc.)

As part of their work in Professional Development the Public Engagement Unit at University of Bath has developed, delivered and commissioned a wide range of training, activities and interventions. These include formal courses in partnership with

the postgraduate skills programme and the researcher development units; facilitating organised events for sharing knowledge and experiences, one-one support, the development of online and printed resources and delivery of bespoke courses at departmental levels. In line with the challenges identified in the State of Play report, the time spent on developing and delivering formal training was disproportionate to its actual and perceived value. Conversely the team are often called on for 'just in time' training to support events and public engagement projects. Because this support is linked directly practice and need, they are often very well received and valued, but the time involved in having one-one conversations and/or developing new resources for this purpose is far more significant.

In 2017, the University of Bath was awarded funding by RCUK as part of the SEE-PER call. The aim of the programme was to critically analyse training and continuing professional development for public engagement with research to understand the barriers and enablers to participation. This analysis was then used to: develop guidance, improve the quality of provision, and inform the development of new forms of professional development within the University of Bath and with the National Coordinating Centre for Public Engagement.

This report pulls together some of the key learning to emerge from the programme. It draws on the following inputs and was conducted between October 2017 and May 2018:

- A rapid review of the literature on continuing professional development in higher education.
- Six interviews with staff in higher education (at other Universities) and learned societies who have responsibility for and expertise in professional development for public engagement.
- A review of key literature pertaining to formal training in public engagement and science communication. Both terms were investigated given the limited number of studies and the fact that they tend to be used inter-changeably.
- A review of existing professional development provision including separate evaluations of formal training and support from the public engagement team, alongside interviews with the public engagement team.
- Ongoing discussions with advisory board members, including one meeting and one workshop.

The findings are presented in the following sections:

- **Professional Development in Higher Education:** A short summary of the status of professional development within academia.
- **Continuing Professional Development for Public Engagement:** Focusing on the University of Bath context but with reference to the wider literature.

- **Changing Researcher Demands at University of Bath:** Looking at the ChallengeCPD programme and the steps taken within the project to meet researcher's changing demands for professional support.
- **Closing Reflections:** A closing reflection on the project, and key learning to take forward.
- **References**
- **Appendix A:** Resources which may be useful for supporting researcher development in particular advanced public engagement skills.

Professional Development in Higher Education

There has been a growing trend towards formalisation of professional practices and procedures, leading to a demonstrable improvement in the role of professional development in supporting researchers. In their most recent report for example, Vitae (2017) suggests that there is a general move towards more formalisation in the processes of recruitment, induction and appraisal. Drawing on data from the Principal Investigators and Research Leaders Survey (PIRLS) survey and the Careers in Research Online Survey, the report finds a significant increase in levels of confidence in recruitment and selection processes, alongside a significant increase in engagement in appraisal from 52% in 2009 up to 72% in 2017. Vitae (2017) which also finds that the proportions of respondents reporting provision of a written job description which includes details of requirements for qualifications, specialist research skills and transferable skills have steadily increased since 2009 and are now approaching very high levels. Concurrently the proportion of researchers finding appraisal useful or very useful to focus on career aspirations has also risen from 52% in 2009 to 62% in 2017. Alongside these shifts there is a marked rise in the availability of induction programmes for newly appointed researchers with nearly 80% being offered an induction, alongside high participation rates (95% of respondents who were offered a local induction participated, and around 90% departmental and institutional inductions).

Policy implementation within HE is more likely to be the result of negotiation and conflict than of rational decision making and top down implementation. Universities are therefore more likely to discover their preferences through actions, than act on the basis of preferences, learning from past failures and successes (Trowler, 2012). Research suggests that despite the above gains, development still lacks currency and is met with scepticism and sometimes seen as an attack on academic freedom as part of a growing culture of performance measures (Dill, 2005). For staff with responsibility for professional development there is a leaning towards delivering programmes through cooperation and collaboration, to work with academics and to assist them to reflect upon their academic role in relation to teaching, research, scholarship, leadership, funding and supervision of students etc. (Fraser, 2001, p.55). These approaches are more in line with the values and needs of academics, as well as good practice in implementing change within Higher Education but may not necessarily be recognised as professional development.

In our review of the literature we identified a number of characteristics that influence the delivery and effectiveness of professional development:

- Academics have significant agency in exploring and to some extent defining what it means to be a professional in the contexts in which they live and work,

alongside regulating theirs and their peers ongoing adherence to vigorous academic standards (Dill 2005).

- An academic may identify themselves as a Historian, a Scientist, a Dentist or a multitude of other professions. These factors taken together may lead many academics to ground their professional status and identity within their disciplinary community rather than their institution (Blackmore and Blackwell 2003). This may in turn lead to a loose connection between CPD at individual, departmental and institutional levels.
- CPD and Professional Development can be met with significant resistance within academic communities in particular its link to what is seen as an obsession with measuring performance (Stefani, 2013) in line with a growing neoliberal encroachment on higher education (Bozalek et al, 2014; Mockler, 2013; Kneale P et al. 2016)
- There is sometimes a reverence for the doctorate degree and it is assumed that it prepares researchers for other roles encompassed by the academic profession, such as management, leadership, and teaching. It is sometimes assumed that these skills will emerge as individuals take on such roles and responsibilities (Pilbeam 2009, Brew 1995).
- Evaluation of CPD tends to focus on one-off formal training and is restricted to an immediate assessment of the extent to which the training met the needs and goals of participants. There is a dearth of long-term evaluation, or a broader understanding of the role of professional development in generating behaviour change and improving practice particularly in line with broader institutional and national goals; extent to which institutional standards and norms are met (in areas such as equal opportunities etc.) (Tourish 2012; Blackwell and Blackmore, 2003; Murphy, 2014)).
- There are fragmented structures responsible for the delivery of CPD sometimes revealing an absence of coordination and leading to a lack of coherence in provision (Murphy, 2014).
- Academic development programmes can suffer from a lack of “currency within the economy of the institution” (Boud 1999, p.8) as they can be seen as irrelevant to the daily life and work of a researcher.
- Ongoing pressures on time, a lack of awareness of available opportunities, lack of incentives to engage with professional development are all frequently cited barriers. There is lack of awareness of development opportunities, whereby academics often ignore the emails that are being sent from central departments like the Library, HR, and the Centre for Teaching and Learning (Murphy, 2014; TNS BMRB, 2015)
- Short-term funding arrangements for academic staff alongside the absence of clear career structures for academic developers, mean professional development is a marginal priority (Murphy, 2014; McKenna and Hughes, 2015)
- Much development work is not even categorised as such, and there is a narrow notion of training held by many senior managers (Clegg 2003).

- There is limited awareness regarding the extent of the university's spend on professional development provision, or indeed what level of spend would be appropriate (Murphy, 2014).

Findings from the University of Bath – ChallengeCPD Programme

The ChallengeCPD project had an advisory group comprising academics, academic staff developers, doctoral college representatives, external providers of training for academics, representatives from the National Coordinating Centre for Public Engagement and the Public Engagement Unit. In the first meeting of the advisory group we conducted a pinpointing exercise with participants to identify what makes for good quality professional development. The following pointers arose:

Design

- Enables you to **reflect** on an intervention, task or professional challenge and what you have learned from it.
- Is **linked to a big picture** (i.e. not a one-off box tick) but linked into career pathways
- Is **timely** and run when people need it at times that they can attend.
- It is **enduring** and provides resources that people can return to
- In an **environment** that is supportive of learning.

Delivery

- **Challenges thinking and behaviour.** Opening-up new ideas that might change practice – providing a space to 'dream differently'.
- **Is inclusive** and designed to account for different attitudes towards 'training', different learning needs and styles etc.
- Uses **active learning** approaches, not simply presenting black and white answers.
- Is **responsive** to the needs of participants (i.e. tailored on the fly) and **relevant** to participants' backgrounds and requirements.

Valued

- Provides **recognition and accreditation for skills**
- Is **efficient** and **effective** saving more time than the time invested in it.
- Is delivered by someone who has the **confidence** of the researchers.
- Helps **build networks and cohorts of practice**, facilitating peer to peer support.

In our discussions, we noted that there are tensions around the purpose of CPD and the position of the learner that must be accounted for. For example, if CPD is designed to change behaviour, then learners who are resistant to change, or not aware of a need

to change their behaviour may will have a different relationship to CPD as a result. Given the loose alignment between individual goals for CPD and institutional goals identified earlier in this document the trainer must strike a balance between providing challenge and supporting.

CPD for Public Engagement

The Content

The professional development landscape for public engagement is characterised by a range of formal training, a tentative although improving position within promotions, recruitment and selection criteria, a smattering of fellowships and specialist awards, and a plethora of informal under the radar processes of support and development (i.e. peer support, mentoring, one-one coaching). The Public Engagement Unit at University of Bath has developed, delivered and commissioned a wide range of training and development activities and interventions. Participation in these has been varied and reflects the national picture including: occasionally low participation levels, a perception amongst staff that there is no training on offer, and a desire for 'just in time' support.

In preparing for this project the Public Engagement Unit developed the following model to capture the diversity of CPD related practices:

One-off activity	←-----→	Ongoing support
Stand-alone	←-----→	Part of broader CPD programme
Closely linked to practical PE	←-----→	No link to upcoming PE opportunity
Entry-level	←-----→	Advanced
Stand-alone skill	←-----→	Embedded in research
Internal provider	←-----→	External provider
Group	←-----→	Individual
Linked to RDF or other accreditation	←-----→	No link to broader framework
Telling the institutional agenda / goals	←-----→	Supporting the individual's agenda / goals
Linked to stage in career	←-----→	Linked to levels of experience of engagement
Badged as professional development	←-----→	Not overtly badged at CPD
Skills based	←-----→	Attributes based

In our review, we found much of the literature on CPD for public engagement was focused on formal training (Edmondson and Dawson, 2004; Young and Mathews, 2007; Illingworth and Roop, 2015; TNS BMRB, 2015). Training is often linked to a specific activity (i.e. delivering at a science festival, working with schools), but may also support

a general awareness raising of public engagement and its value for research, without there necessarily being an opportunity on the horizon (Besley et al, 2016). Research suggests that levels of formal training for public engagement or communications stand at around one quarter (TNS BMRB, 2015, Vitae, 2017). Studies also suggest a steady increase overtime (TNS BNB, 2015; Owen et al, 2016), for example Vitae (2017) highlights a shift from just under 15% uptake in formal training and CPD in 2011 to 25% in 2017.

The formal training on offer across the sector, typically covers basic introduction to public engagement with research, funding, evaluation and specific skills such as working in partnership, communication skills, working with the media, working with policy makers, and creative approaches. If we broaden our definition of formal training to include conferences, the range of is broadened out a little further particularly focusing on research methods and epistemologies of practice. Some examples of this include a recent conference from University of Sheffield Faculty of Arts and Humanities exploring public engagement as a method. The day was developed to support researchers in developing their understanding of the experiential, embodied, communal and dispersed nature of knowledge changes the role of researcher. Sessions included 'art as research', and the 'divided self'. Another example, we found was 'Digital Storytelling theory and practice' run Unconference at the University of East London - a one day exploration of approaches to Digital Storytelling Facilitation for experienced academic researchers and teachers, media activists, community and media students or professionals who wish to explore the applied use of Digital Storytelling as a participatory research method.

The literature we reviewed appeared to us to focus implicitly to role of formal training in promoting participation in public engagement, predominantly through sense making and creating an attitudinal shift and appreciation for the role of engagement within academic life (Poliakoff & Webb, 2007). There was very little written around its role in improving quality of engagement. The formal programmes being developed in Higher Education Institutions appeared to be one-off models, whereas external organisations such as the NCCPE, Learned Societies and funders such as the Wellcome Trust have developed programmes to support reflection and learning over time.

Another key area we noted is how the overall purpose and ideas that are driving formal training are evolving over time. A review of academic papers found two published studies that had looked at this topic, both focusing on training in Science Communication. The themes that emerged:

- a shift towards scientific literacy away from public understanding;
- a shift towards science capital, reflexivity and themes of social justice in science communication, away from deficit models;

- a greater appreciation for the role of two-way communication as an approach to improve communication and achieve strategic objectives.

(Illingworth and Roop, 2015; Besley, 2015)

Although not cited in the literature, we know that institutions are taking new approaches to embedding public engagement within existing training and support. For example, at the University of Bath, the team have developed bespoke training and resources for supervisors of PhD students, and there is interest across the sector in providing support for principle investigators and departmental leads. There appears to be a growing demand for context specific departmental level support and institutions we spoke with were experimenting with train the trainer models to deliver this, however with mixed results. In some circumstances, there was a resistance amongst active engagers to taking on additional responsibilities in public engagement given their existing activities were not fully recognised or supported. At the University of Bath researchers who were active in engagement recognised that they were experienced in one aspect of the PE spectrum (for example working with the media, or delivering outreach) and as a result they felt ill-prepared to support other researchers in their department who might be using different methods. As part of this programme we've started to reflect on the nature of support that is required by leaders of engagement (see section on changing researcher demands for more details).

The Value of Training and CPD

As discussed in the introduction researcher's perception of the value of training and CPD appears to evolve depending on their experience of engagement. Those who have done very little engagement say they would like training as a mechanism to improving their confidence and getting some experience, whereas those who are active engagers place high value on learning through experience (Owen et al. 2016). Evaluation of public engagement CPD that we located is largely focused on responses of participants towards the extent that the one-off training met their specific goals and needs.

Where these evaluations exist, they tend to report improvements in:

- communication and organisation skills;
- levels of confidence to engage the public;
- generating new ideas and ways of working;
- enhanced teamwork and interpersonal skills;
- greater understanding of the benefits and relevance of public engagement to academic role;

(Illingworth, S. & Roop, H, 2015; Review of formal training for ChallengeCPD; 2018)

Holliman and Warren (2017) was one of the few published studies we found to return to researchers twelve months after the initial interaction asking about the usefulness of the training, how it had been applied and whether researchers would recommend the training to their peers. Written in relation to Science Communication training, responses received provided a wide range of examples where researchers had applied what they had learned in practice, from increased confidence and composure in media interviews through to greater clarity in written presentations.

In line with some of our discussions above Silva and Bultitude (2009) provides the following recommendations for training in public engagement that focuses on communications skills:

- Practical and interactive exercises are useful to enable trainees to observe and reflect upon their practice; if possible, this aspect could be delivered during a real science communication event to ensure contact with real audiences.
- Include a session on reflection/discussion of learning outcomes to encourage the trainee to be responsible for his/her own learning;
- Improve the quality of the content of materials and use them more effectively;
- Enable contact between trainees and peers involved in science communication, to promote the sharing of experiences;
- Be delivered by more than one trainer; this provides support to the trainer while making the session more complete and dynamic;
- Be bespoke (i.e. tailored to suit the trainees);
- A sound knowledge of the trainees' needs, abilities and expectations and adjust the training course accordingly.

Silva and Bultitude (2009) also note that trainers and enablers are much more aligned in their perceptions of what makes effective training when compared to researchers, it may therefore be worth considering involving researchers in the development of training and resources.

The role and purpose of CPD

Our discussions on the Challenge CPD advisory board highlighted that there was a lack of quality frameworks for public engagement, and in the absence of such there was no 'steer' for the skills, behaviours and attributes that professional development should be supporting, this mirrors findings from State of Play (Owen et al. 2016). The challenge here is that the quality frameworks for public engagement should simply be the frameworks that measure the quality of research for example REF, Pathways to Impact, Publication. These frameworks have only recently adopted 'impact' as a measure, and there is more work to define and capture high-quality public engagement within this measure.

Two frames that could be used to capture the journey towards excellence in public engagement were put forward in our discussions. The first frame was called the four stages of competence, or the "conscious competence" learning model. Originally developed by Gordon Training International in the 1970s relates to the psychological states involved in the process of progressing from incompetence to competence in a skill:

- **Unconscious incompetence:** The skill has become "second nature" and can be performed easily. The individual may be able to teach it to others, but not necessarily.
- **Conscious competence:** The individual understands and knows how to do something. However, using the skill or knowledge requires concentration, there is heavy conscious involvement in executing the skill.
- **Conscious competence:** Though the individual does not understand or know how to do something, they recognize the deficit, alongside the value of a new skill in addressing the deficit. The making of mistakes can be integral to the learning process at this stage
- **Unconscious competence:** The individual does not understand or know how to do something and does not necessarily recognize the deficit. They may deny the usefulness of the skill or training to develop the skill. The individual must recognise their own incompetence, and the value of the new skill, in order to take steps to towards next stage.

The second frame was developed in by Miller (1990). Known as Miller's Pyramid, it is a way of ranking competence both in educational settings and in the workplace. In distinguishing between knowledge at the lower levels and action in the higher levels, it brings to light ethical considerations around practicing public engagement and the knowledge required to do so without causing harm.

- Does
- Shows how
- Knows how
- Knows

Additional levels have been added to suggest that learners need to have heard about and have awareness of before knowing.

- Knows about
- Heard of

St. Emylns (2018)

Using these frameworks as a starting point the ChallengeCPD advisory board proposed that it would be helpful to map out the actions that might take place and

the support needs of researchers to move them up a step, alongside the types of experiences and actions that are associated with each level. We noted for example that having to teach public engagement as part of the undergraduate curriculum was a crucial step in the development of researchers (i.e. from knows how to shows how). As one example, Denicolo (2014) has mapped for example the expected outcomes from professional development related to the impact agenda for different stages of research careers.

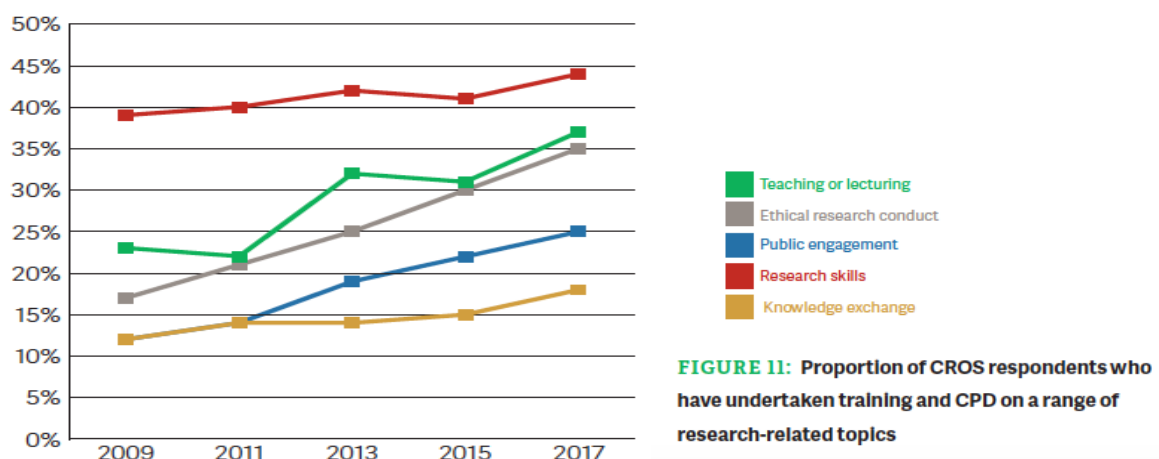
In our discussions, we identified potential barriers to researchers taking part in professional development for public engagement. These included:

- Not recognising that professional development is required to do public engagement (unconscious incompetence, unconscious competence)
- Lack of visibility of PER and understanding of what 'good PER' looks like
- The name 'professional development'
- A lack of time
- Mismatch between what researchers need from training and what is on offer
- An institutional culture that is resistant
- Professional development for public engagement emphasises it as a separate activity

ChallengeCPD Advisory Board (2017-2018)

An interesting point here is the position of professional development for public engagement and the fact that it is still viewed as a separate activity from CPD for research or teaching. Its notable that participation in CPD for teaching and lecturing and ethical practice are in significantly more advanced positions compared to say knowledge exchange. McWilliam (2007) points to a more established tradition of dedicated centres for teaching and learning, that were established from the 1990s and accompanied groundswell of support for greater recognition of scholarship of teaching.

(Vitae, 2017)



Indeed writing on the role of professional development in shifting the culture and practice of academics, McWilliam (2007) suggests that in teaching and learning, it has brought the academic away from traditional pedagogic models such as the 'sage on the stage' towards more open and discursive models what she terms the 'guide on the side'.

In comparison with public engagement, CPD in teaching has a number of more formalised systems including:

- Postgraduate Certificate in Teaching and Learning in the UK (LTHE/PGCAP or equivalent),
- Short training courses;
- *in-situ* training;
- consulting,
- peer review
- mentoring;
- student assessment of teaching;
- intensive staff development

(Kneale et al. 2016)

These systems are supported by several mechanisms and investments. For example, SEDA the professional association for staff and educational developers in the UK, and the Higher Education Academy.

It's evident that the Public Engagement agenda still has long way to go in relation to being embedded fully in the training and professional development agenda of research, so that research can take the same journey that is described by McWilliam (2007). This was explored further on the Challenge CPD advisory board was the need to embed professional development as part of the bigger picture of being a researcher. It was noted that focusing on 'training' may take attention away from the eco-system of research. Several dimensions were identified:

- **Evaluative measures:** how can we measure the impact of professional development over time? What are the quality measures for public engagement? For example, in teaching we use the NSS, module feedback etc.
- Can we adopt **peer review/peer support** in public engagement?
- How do we align professional development with **career stage and previous experience of public engagement?**
- How do we **value the skills and experiences** that people bring from outside of their professions (i.e. voluntary work, life experiences etc.)
- How can we work with different parts of the system for example specific support to **postgraduate research communities and supervisors?**

- How do you **foster a culture of professional development?**
- What is the role of professional development for public engagement within the **progression of a research career?**
- How do you account for the fact that **professional development is not linear?**
- **Join up effectively with other departments** offering CPD (i.e. HR, Centres for Teaching and Learning, Library etc.). Ensure that there are clear development pathways for researchers and a coherent offer.
- Make links with **reflective practice as part of the professional research career** and the role of Public Engagement within this.
- Recognise teaching practice as a form of professional development for example, embedding engagement in the curriculum.
- What can be **learned from other sectors?**

Changing Researcher Demands at University of Bath

In recent years, the Public Engagement Unit have noted a surge in demand for three areas of support for public engagement. The first can be described as 'just in time' one on one support, the second is to help researchers develop resources from established activities, these can then be used to roll out activities in other departments, or hand over the management of the activity to someone else. The third area is for departmental level leadership support. This may come from an academic who is passionate about public engagement and wishes to mobilise their department, or from an academic with a formal role (i.e. Head of Department, P.I. etc.) looking to learn how to create enabling cultures for public engagement or how to develop a strategy etc.

The ChallengeCPD grant provided a way of investigating how to meet these changing demands whilst learning to integrate the lessons identified in our review of the literature and advisory board meetings. In scoping, new ways to support researchers we had to consider how to deliver this support within current capacity. To meet the first demand, the approach we selected was to create resources that meet entry level needs (i.e. researchers who are new to public engagement), so that the professional support available from the Public Engagement Unit could focus on more complex areas. In doing so we also wanted to maintain the qualities that researchers value in their interactions with the Unit. A similar approach was taken for the second demand. With regards to leadership support in public engagement, we began to scope out what this support would consist of. It is likely that it will be developed as a formal package in the first instance.

We will look at each of these areas in more detail below, and cover some of the steps taken on the ChallengeCPD programme.

Just in time one to one support

This covers a wide range of topics including for example, what is public engagement, how do you write about public engagement in grant proposals, how do you facilitate an effective workshop, through to how do you evaluate and measure success. This type of support is both bespoke and tailored to the specific needs of the researcher. It is offered through corridor conversations, post meeting chats, telephone calls and formal meetings.

Our first step was to investigate and capture what researchers valued about one to one coaching and mentoring, and the learning process that emerge through the relationship between a researcher and the Public Engagement Unit and/or trainer. Our concern was that if we only focused on the content (i.e. questions researchers have and how to provide content that addresses those knowledge gaps) we would lose

something quintessential about the nature of the support on offer, when it came to developing resources.

We found three key components to the relationship:

- **Establishing a rapport:** this includes active listening skills, communication skills. The questions in the sections below are used constructively to both demonstrate interest in the relationship and planned activities.
- **Knowing when to offer support and when to challenge:** this requires a high level of emotional intelligence, and an ability to tailor style accordingly, recognising when to be tactful when to be more direct.
- **Building trust:** Particularly through demonstrating professionalism and competence. Concerns over competence may arise when the researcher experiences the trainer or team member as suspect in their approach or judgement. One of the key ways in which trust is built is when the public engagement unit knows the limits and strengths of their knowledge and experience and acts in accordance.

The role of the Public Engagement Unit via these informal one to one informal conversations is very similar to that of a trainer in a formal training session except that they are occurring in a variety of settings, formats and times. Still within these interactions the team draw on a wide set of knowledge, tools and informal resources and engages the researcher in a process which encourages greater reflexivity. By asking questions, they are not only supporting researchers to reflect on their own stance, motivations, aims and objectives but to improve how these might be communicated to others more clearly. As one researcher said in relation to her engaged research: "...they helped me to define what I am and what I am not..."

In our review, we also found a strong emphasis on non-judgemental and flexible support:

"No matter what you take or how late in day that you take a problem to them, they will have a go at supporting you. They really understand us, and how we work".

"I'm never be embarrassed to go to them with stupid questions".

"Very friendly and approachable. I've never had a bad experience. Even if you are not confident of the fit, just go and talk to them and they will have practical suggestions about what you can do".

"I love the PEU. I have endlessly positive things to say about them. They always suggest such great things. I love talking with them".

An earlier review of the Public Engagement Unit and the support offered researchers identified the following aspects that were important and valued in the interactions:

- **Credible:** a deep and rich understanding of the university, HE sectors, Research Councils and public engagement through research and practice. Well-connected outside of HE.
- **Reflexive:** using reflective practice to inform and develop the work of the Public Engagement Unit as well as individual researchers and teams.
- **Passionate:** deeply held, and evidence based, conviction that public engagement brings benefits to research, researchers and the research environment.
- **Connecting:** working in a way that interacts with many different communities within and beyond the university to translate, facilitate, mediate, network and broker. The ability to pull together activity across departments and harness it for strategic value.
- **Sensitivity/Emotional intelligence:** working in a way that recognises, and influences both feelings and behaviours.
- **Memory:** working to collate, share and deepen knowledge and experience of what works and what has been tried before.

(Owen, 2014)

It was clear that in moving to online resources, whilst some qualities could be embedded in the system, certain qualities would be lost. For example, it is more effective for a well-trained and highly qualified human being to judge the support needs of researchers than an online e-learning system that is built to help the user decide what they most need. The development of online resources to help the unconsciously incompetent may not be as effective as a short conversation, as the learner is not yet fully able to recognise their own training needs. We also noted that by encouraging researchers to online resources, the Public Engagement Unit could also risk losing some knowledge about the research community and in particular who is interested in what.

Identifying Current Needs

Simultaneously we scoped the specific development needs that researchers who have worked with the Unit have expressed, alongside identifying frequently asked questions which researchers. To do this we reviewed evaluation data collected from formal training and other PE fora, existing evaluations of the support offered by the public engagement team and findings from interviews with seed fund recipients which explored support needs for further PE activities.

The following areas were identified in the first instance:

Development area		Skills required
Understanding what Public Engagement with Research is		Basic understanding of definitions, examples and the role of public engagement in research
Advancing PE skills	Informing	Graphic design and graphic communications techniques
		Animations
		Acting and performance based techniques
		Social media and blogging
		Developing websites
		Photography
		Writing for different audiences
	Consulting	Facilitation (i.e. working with conflict/facilitation methods)
	Collaborating	Participatory research methods (i.e. using drama, film)
	Managing engagement	Collecting and using audience insight
		Situational Analysis
		Writing about PE in academic work
		Evaluation
Developing or scaling up PE activities		Setting up social enterprises
		Funding
		Who to work with and how to work with them (i.e. Heritage Sector, Science Centres, Festivals)
		Engagement plans
		Training others and developing resources
Embedding Public Engagement and Leadership		Capturing PE activity in department
		Developing PE strategy at a department level
		Embedding PE training in PGR training and supervisory support
		Within the curriculum

We found that many of the 'advancing PE skills' areas would be best met via specialist external training. We did however question whether researchers would seek to develop some of these skills (i.e. photography, developing websites), or if they needed to know what was involved in producing a good photo or website, and how to commission others who already have these skills.

Speaking with the Public Engagement Unit we found that most time was spent offering support in the first introductory area. Therefore, through conversations with the unit

we came up with a set of introductory resources that could be further developed and hosted online:

Resource type	Description
Decision trees A triage tool to help a researcher navigate where to go next in relation to a specific commonly asked question.	<p>Is this Public Engagement with Research? Helping researcher’s identity who, in professional services they should be talking with.</p> <p>I want to work with a creative. (i.e. you want your research to look pretty, new forms of research, engaging the public). This is to help people to work out if they should be commissioning a designer, data visualizer etc. or if they are looking for a genuine collaboration with artist /creative.</p>
Exercises Stand-alone exercises.	<p>What motivates you to engage the public with research? Leads to suggest certain activities based on a researcher’s personal motivation.</p>
Quick start guides These are more extensive interactive mini-modules which cover key content currently delivered through formal training.	<p>Getting started Navigates the researcher through three key questions. Why do they want to engage the public? What activity do they want to do? Who do they want to engage?</p> <p>Where next? (i.e. you have an activity – do you want to develop resources, sustainability, scale up, make it better). This is to help researchers to think about different ways they can build on existing activity.</p> <p>Managing public engagement Covers foundational knowledge such as event planning, consents MOUs, communications plans and legacy.</p> <p>Working in partnership Covers the ethics of collaboration, how to develop effective partnerships.</p> <p>Evaluating public engagement Introduction into evaluation and how it can be used.</p> <p>Facilitating a workshop How to host and event and read a room.</p>

The second related area of demand was to help researchers develop resources from established activities. To this end the Public Engagement Unit identified a suitable pilot for developing resources from an established activity. These resources will then be used to help researchers leading these programmes to involve others in the work, passing on some of the responsibilities for managing the programme, and also to enable the model to be developed in other departments. The pilot we selected was

the Young Researchers Programme a programme which matches individual postgraduate researchers with two or three young people (aged 12–15) each. The postgraduates act as supervisors, supporting the young people to complete a meaningful research project of their choosing and design.

Taken together we have put out a tender to develop e-learning materials. The e-learning materials will be targeted at researchers of any level but who are relatively new to public engagement and/or the areas covered in the resources that will be developed. It is anticipated that the materials could act as a precursor to approaching the public engagement team for support. The materials will be developed in [Xerte](#) an e-Learning authoring tool for producing engaging, interactive e-learning resources which is currently being used at the University of Bath. We anticipate that they will be hosted within [Moodle](#) which is the University's preferred virtual learning environment (VLE), however we will be seeking advice from the appointed consultant on this. The consultant and/or consortium will be tasked to conduct further instructional design, content research and training development (storyboarding etc.), overall navigation and structure, content design, and review and test the materials.

Leading public engagement

The third and final area for investigation and development was departmental level leadership support. This may come from an academic who is passionate about public engagement and wishes to mobilise their department, or from an academic with a formal role (i.e. Head of Department, P.I. etc.). Further work is needed to identify the role of the public engagement champion and look at support needs. We have begun this work and through reflecting on the support we provide, and conversations we have found that whether in a formal departmental position or acting as a champion for engagement, a leader in public engagement, might for example:

- Support others by offering advice and guidance in relation to specific activities.
- Devise departmental level schemes and projects, involving and training others across the department.
- Connect people across the department and institution to help galvanise activity, mobilise and share knowledge.
- Map current activity with a view to share resources, measure impact and build a coherent strategy.

In addition, a public engagement leader with formal responsibilities might also for example:

- Set a clear strategic vision for public engagement, defining for example what is in scope and out of scope, the priorities for the department.
- Advocate for the public engagement activities of others in the department.

- Understand staff development needs and interests in public engagement, matching this with opportunities or training.
- Can allocate resources to priorities.

To date the support on offer within the Public Engagement Unit is emerging for this area. The unit may help run a departmental level workshop bringing together researchers and professional support staff with an interest in and remit for public engagement. They also have experience in approaches to foster a culture change, such as setting up a seed fund to help galvanise activity and generate learning, embedding engagement within training, reward and recognition processes etc. There are also ongoing conversations with staff working in professional develop to embed leadership for public engagement as part of their ongoing support, for example the University is currently working on a behavioural framework which captures the behaviour of leaders against a set of attributes. Working with this framework we have started to populate the behaviour of a public engagement leader. This work is still at an early stage and can't be shared in this report, but some examples from this work are included below:

- Bringing in new sources of funding/resource for activities.
- Building networks and developing new ways of working with different partners.
- Helping others to manage their PE priorities and workloads.
- Being inclusive of a diverse range of experiences in PE.
- Sharing your PE skills and experience with other researchers
- Listening and learning from other's experience.
- Advocating enabling cultural shifts in procurement, recruitment, promotions, teaching programmes etc.

As part of our ongoing work we've identified the following training areas that could be tested and developed further.

1: Widening the net, bringing people in to help you develop and implement a PE strategy.

Shared leadership and who to work with.

What kind of public engagement leader are you? (i.e. lead through doing, pragmatist, advocate).

2: Nurture relationships, the role of the public engagement champion.

Explores the different aspects of the role - championing, developing/supporting staff, devising departmental strategy, interpreting institutional policy etc.

How to motivate others, the different motivations for Public Engagement.

What type of public engagement leader are you?

3: Mechanisms to affect change.

Covers a wide range of interventions for example - how to set up and manage a seed fund, workshops, sharing practice, communications.

4: Developing a public engagement strategy.

What are the core components of a PE strategy? What might such a strategy help you with.

5: Evaluate and learn

Developing KPIs. Using evaluation and reflection to strengthen your strategy and leadership.

Closing Reflections

What we have learnt from the Challenge CPD Project? First of all we have some criteria as to what makes good quality CPD:

- **Networks:** building cohorts of practice
- **Big picture:** Coherent
- **Rigorous and high quality:** plays to people who are short on time, apprehensive of value
- **Enduring:** something you take away and return too
- **Change:** challenges thinking and behaviour
- **Active, timely and relevant.**

Secondly, we must acknowledge that although the status of public engagement with research is growing, it is still at the fringes and there is a way to go before the research culture in Higher Education gives parity of esteem to between discovery, application and engagement. It flows from this that the role of public engagement within how researchers develop and grow careers and skills is also at times marginal, despite a growing presence. It is fitting that academics have significant agency in exploring, and to some extent defining, what it means to be a professional in the contexts in which they live and work, alongside regulating theirs and their peers ongoing adherence to vigorous academic standards. The growing role and status of public engagement within the academy is helping to place greater onus on researcher's defining what it means to be an 'engaged historian' or an 'engaged neuroscientist'. However, a lack of coherence over what constitutes excellence in public engagement (and therefore excellence in research), may hamper further developments in this arena. It is apparent therefore that public engagement professional development needs to be embedded at the heart of academic development and supported by relevant frameworks and standards that stipulate and encourage excellence in research. We recognise that there is an emerging knowledge and language of what constitutes excellence in engagement, however this knowledge lacks currency within the mainstream of the sector, for example it is not yet utilised on the assessment of funding applications.

Whilst the primary purpose of much formal training in public engagement appears at the surface at least to centre around enabling participation in public engagement, building confidence and helping researchers make sense of where engagement sits in their role. However, there is a growing awareness and demand from researchers for more advanced techniques, a more diverse suite of support including 'just in time' and 'one to one' support, and as above, a growing focus on quality. We've begun through this project to look at the role of e-learning in supporting these emergent needs, but there is more work to be done perhaps learning from professional development in teaching.

In this project, we also came across the value for academics of doing engagement, supporting others to engage the public, and embedding public engagement in the taught engagement. It's evident that leadership roles are emerging in this space, and more work is needed understand and develop appropriate lines of support. However, for some researchers CPD is too heavily associated with growing instrumentalism and an ongoing assault on academic freedom and academic qualifications are still being viewed as being sufficient to prepare researchers for other elements of their role (i.e. supervision, teaching, engagement).

Simultaneously the development and delivery of CPD within HEIs is distributed across a wide range of central departments alongside faculty and departmental provision and there is a lack of awareness of development opportunities from central departments (i.e. Library, HR, and the Centre for Teaching and Learning) alongside lack of time to engage with these opportunities when researchers become aware. The Public Engagement Unit therefore invest significant time supporting researchers via one to one just in time support, however much of this support despite being similar in nature to mentoring or coaching is not recognised by researchers as part of their professional development and learning. We took the following learning points from the work above:

- **When is continuing professional development recognised as CPD and by who?** In particular, giving consideration to how you support researchers to reflect on activities they have taken part in, not only to improve those activities, but also to look at their role in their professional development so that it can be captured as part of formal reward and recognition procedures.
- **Learning can take time to be realised.** We need far greater time lags in our evaluation efforts. How often do people use the resources? How have activities improved over time?
- **Surface existing skills and competencies.** Professional development is not necessarily about new knowledge or behaviours but helping people become conscious of what they already know.
- **Involve participants in the development of CPD interventions.** This might include user-testing, train the trainer models, and overall design.
- **Language of CPD.** We still need to find more appropriate language. Training is sometimes the least offensive, other options include researcher development, academic development, personal and professional development, reflective practice.
- **The role of external partners in supporting CPD is not acknowledged.** They often provide formative feedback and insights into audiences etc. There is professional development in organisations hosting researchers, buddying, acting as mentors or offering co-location working sites.

Finally, it is evident the impact of CPD on behaviour and outcomes needs to be more explicitly addressed within evaluation. Too much emphasise of formal training often as a conduit to encouraging researchers to engage the public with research rather than advancing critical skills and thinking. We found very little by way of formal programmes designed to support ongoing reflective engagement. The discussion in the literature was largely focused on one-off training interventions, and there is a clear need undertake long-term evaluation, and gain a broader understanding of the role of professional development (of all forms) in generating behaviour change and improving practice.

References

- Andrews, E; Weaver, A; Hanley, D; Shamatha, J; Melton, G (2005) Scientists and Public Outreach: Participation, Motivations, and Impediments, *Journal of Geoscience Education*, v. 53, n. 3, May, p. 281-293
- Baram-Tsabari, A and Lewenstein, B (2013) An instrument for assessing scientists' written skills in public communication of science, *Science Communication*, Vol 35, Issue 1, 2013
- Besley, J (2015) What do scientists think about the public and does it matter to their online engagement? *Science and Public Policy* 42 (2015) pp. 201–214
- Besley, J; Dudo, A; Yuan, S; and Ghannam, N (2016) Qualitative Interviews With Science Communication Trainers About Communication Objectives and Goals, *Science Communication* 2016, Vol. 38(3) 356– 381
- Besley, J.C., Dudo, A. & Storksdieck, M. 2015. Scientists' Views About Communication Training. *Journal of Research in Science Teaching*. 52(2):199–220.
- Besley, J.C. & Tanner, A.H. 2011. What Science Communication Scholars Think About Training Scientists to Communicate. *Science Communication*. 33(2):239–263.
- Blackwell, R. and Blackmore, P., 2003. Rethinking Strategic Staff Development. *In*: R. Blackwell and P. Blackmore, eds., 2003. *Towards strategic staff development in higher education*. England: SRHE & McGraw-Hill, pp.3-15.
- Bozalek, V., McMillan, W., Marshall, D., November, M., Daniels, A. & Sylvester, T. (2014). Analysing the professional development of teaching and learning from a political ethics of care perspective, *Teaching in Higher Education*, 19:5, 447-458.
- Edmondston, J. & Dawson, V. 2014. Perspectives of Science Communication Training Held by Lecturers of Biotechnology and Science Communication. *International Journal of Science Education*, Part B. 4(2):195–210.
- Clegg, S., 2003, Problematizing ourselves: continuing professional development in higher education. *International journal for academic development*, 8(1), pp.37-50.
- Dill, D., 2005. The degradation of the academic ethic: teaching, research and the renewal of professional self-regulation. *In*: R. Barnett, ed., 2005. *Reshaping the university, new relationships between research, scholarship and teaching*. England: SRHE & McGraw-Hill, pp. 178-191.

EU (2013) Supporting Early Career Researchers in Higher Education: Literature Review and Policy Context

Fraser, K., 2001. Australasian academic developers' conceptions of the profession, *International journal of academic development*, 6, pp.54-64.

HEA (2016) Evaluating teaching development activities in higher education, available from: <https://www.heacademy.ac.uk/knowledge-hub/evaluating-teaching-development-higher-education>

Herzog, E.D. 2012. Training scientists in a science center improves science communication to the public. *AJP: Advances in Physiology Education*. 36(1):72–76.

Holliman, Richard and Warren, Clare (2017). Supporting future scholars of engaged research. *Research for All*, 1(1) pp. 168–184.

Illingworth, S. & Roop, H. 2015. Developing Key Skills as a Science Communicator: Case Studies of Two Scientist-Led Outreach Programmes. *Geosciences*. 5(1):2–14.

Kneale, P. Winter, J. Turner, R. Spowart, L and Muneer, R (2016) Evaluating teaching development in higher education: towards impact assessment, *PedRio*, University of Plymouth

Matthew C. Nisbet & Dietram A. Scheufele (2007) *The Future of Public Engagement*, The Scientist

McWilliam, E., 2007. Unlearning how to teach. Paper presented at a conference entitled, *Creativity or Conformity? Building Cultures of Creativity in Higher Education*, 8-10 January 2007, Cardiff: University of Wales Institute.

McKenna, C. and Hughes, J. (2015) The locations and identity construction of academic developers: Findings from the ExILED (Exploring the Identities and Locations of Educational Developers) project. SEDA Report.

Miller, S (2003) Science communication's burnt bridges, *Public Understand. Sci.* 12 105–108

Miller, S. & Fahy, D. 2010. Can science communication workshops train scientists for reflexive public engagement? *Science Communication*. 31(1):116–126.

Morein-Zamir, S. & Sahakian, B.J. 2010. Neuroethics and public engagement training needed for neuroscientists. *Trends in Cognitive Sciences*. 14(2):49–51.

Mockler, N., (2012). Teacher Professional Learning in a Neoliberal Age: Audit, Professionalism and Identity. *Australian Journal of Teacher Education*, 38(10).

Murphy, J. (2014) Managing Professional Development of Academic Staff to Enhance University Performance, PhD Thesis University of Bath

Owen, D; Featherstone, H; Leslie, K (2016) The State of Play: Public engagement with research in UK universities. Report Prepared for Research Councils UK and the Wellcome Trust, September. Available at: https://www.publicengagement.ac.uk/sites/default/files/publication/state_of_play_final.pdf

Owen, D (2014) Public Engagement Unit: A Review for Next Steps, internal report for University of Bath Public Engagement Unit.

Pilbeam, C., 2009. Institutional structures: where legitimacy and efficiency meet, *In*: M. Tight, K.H. Mok, J. Huisman, and C.C. Morphew, eds. *The routledge international handbook of higher education*, New York: Routledge.

Rodari, P. & Weitkamp, E. 2015. Short training courses in science communication. Why? To whom? What? *Journal of Science Communication*. 14(4):1–6.

Royal Society (2006) Survey of factors affecting science communication by scientists and engineers

Silva, J. and Bultitude, K. (2009) Best practice in communications training for public engagement with science, technology, engineering and mathematics. *Journal of Science Communication* 8 (2). pp. 1-13. ISSN 1824 2049

Sturgis, P & Allum, N (2004) Science in society: re-evaluating the deficit model of public attitudes, *Public Understand. Sci.* 13 (2004) 55–74

St. Emylins (2018) Educational Theories You Must Know: Miller's Pyramid, available online: <http://stemlynsblog.org/educational-theories-you-must-know-millers-pyramid-st-emlyns/>

TNS BMRB (2015) Factors Affecting Public Engagement by Researchers, TNS

Trench, B. & Miller, S. 2012. Policies and practices in supporting scientists' public communication through training. *Science and Public Policy*. 39(6):722–731.

Trowler (2012), Higher Education Policy and Institutional Change: Intentions and Outcomes in Turbulent Environments

RCUK (2010) Review of progress in implementing the recommendations of Sir Gareth Roberts, regarding employability and career development of PhD students and research staff <http://www.rcuk.ac.uk/documents/skills/IndependentReviewHodge-pdf/>

RCUK (2017) Review of the Concordat to Support the Career Development of Researchers <http://www.rcuk.ac.uk/skills/frameworks/review-of-the-concordat-to-support-the-career-development-of-researchers/>

SEDA Professional Development Framework <https://www.seda.ac.uk/what-is-seda-pdf>

Stefani, L. (2013). Performance measurement for academic development: risk or opportunity? *International Journal for Academic Development*, 18(3), pp.294–296.

Willems, J (2003) Bringing Down the Barriers: Public Communication Should be Part of Scientific Practice, *NATURE*|VOL 422 | 3 APRIL 2003

Vitae (2017) Five Steps Forward: Progress in implementing the Concordat to Support the Career Development of Researchers 2008-2017, Vitae

Vitae (2012) Review of the UK implementation of the HR Excellence in Research Awards process, benefits to institutions and next steps, <https://www.vitae.ac.uk/vitae-publications/reports/uk-hr-excellence-in-research-award-review-and-benefits-june-2012-vitae.pdf>

Young, N & Matthews, R (2007) Experts' understanding of the public: knowledge control in a risk controversy, *Public Understand. Sci.* 16 123–144

Appendix A: Useful Finds

Museum Association

<https://www.museumsassociation.org/professional-development>

- AMA Support Groups (regional)
Reflective, Collaborative Learning to enhance your career.
- CPD Plan
- CPD Log
- Knowledge Journal
 - 1. The ethical responsibility of museums and galleries.
 - 2. The purpose of museums; why museums develop and safeguard collections to enable inspiration, learning and enjoyment.
 - 3. The role of museums: how museums develop and safeguard collections to enable inspiration, learning and enjoyment.
 - 4. How museums develop their collections.
 - 5. How museums develop knowledge of collections.
 - 6. How museums and galleries use their collections to inspire learning and enjoyment.
 - 7. How museums operate.
 - 8. How museums develop and represent their audiences.
 - 9. How museums have changed over time and how this has shaped the sector today.
 - 10. The different types of museum governance.
 - 11. The role and impact of sector related bodies, specialist groups and networks.
 - 12. The impact of society on museums.
- Practical project that meets the CPD criteria
- Professional review
- Mentor

Social Care

Information, guidance, resources and accredited training for anyone supporting people with dementia.

<https://www.scie.org.uk/dementia/>

Faculty Self-Assessment: Preparing for Online Teaching

This self-assessment for online teaching will allow you to evaluate and reflect upon your competencies in key areas of online teaching and provide a baseline of your pedagogical, technical, and administrative skills. As part of your results, you will receive additional guidance/resources for each competency to better prepare you for the online teaching environment.

<https://weblearning.vhost.psu.edu/FacultySelfAssessment/>

Advanced PE Skills

Lynda

Lots of Design Based Resources – i.e. photography, web development, graphic design; other topics such as marketing and communications, sound editing, animation. Some institutions have access/accounts.

<https://www.lynda.com>

E-learning/Training Tools

<http://www.sussex.ac.uk/tel/learningtechnologies/apps>

Pulled together by University of Sussex there are a few Gems in here. Basically, a list of apps and online tools that might be useful in teaching and/or learning – but also PE. Some that stood out for example:

- Anchor FM (twitter for sound)
- Easel.ly (infographic creator)
- Kahoot (real-time quiz)
- The noun project (icons)

The need for engaged research leadership

<http://www.open.ac.uk/blogs/per/?p=7891#more-7891>

NCCPE Leadership

https://www.publicengagement.ac.uk/sites/default/files/publication/leadership_resource_pack.pdf [

Effective leadership in higher education: a literature review

<https://www.tandfonline.com/doi/abs/10.1080/03075070701685114?journalCode=cshe20#.VGc2dBaEyKI>

Factors Driving Learner Success in Online Professional Development

<http://www.irrodl.org/index.php/irrodl/article/view/1714/2907>

Some Examples of Professional Development in Teaching

Sheffield Tool-kit for Teaching and Learning

<https://www.sheffield.ac.uk/lets/toolkit/pathways/intro>

UCL Evaluating your Teaching

<https://www.ucl.ac.uk/teaching-learning/sites/teaching-learning/files/20161207-ucl-evaluating-your-teaching-v3.pdf>

UCL Peer Dialogue Scheme

<https://www.ucl.ac.uk/srs/academic-manual/c6/pot>

UCL Exchange Seminars

<https://www.ucl.ac.uk/teaching-learning/professional-development/arena-open/arena-events/exchange-seminars>

University of Brighton – Curriculum Design Framework [PE Design Framework]

<https://staff.brighton.ac.uk/clt/published/CDF%20AB%20approved%20CC%20licence%20for%20external%20publication%20Jul17.pdf>

University of Brighton – Writing for Academic Publication

<https://staff.brighton.ac.uk/clt/PD/Pages/Research/Writing.aspx>

University of Oxford

<https://www.learning.ox.ac.uk/support/teaching/resources/evaluate/>

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