


Impact of teaching development programmes in higher education



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HEA research series

The image shows a university building with a stone facade and blue window frames. A person is walking on a bridge in the foreground. The building and bridge are reflected in a pond in the foreground. A teal text box is overlaid on the top left of the image.

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Foreword

'We expect our reforms to restore teaching to its proper position, at the centre of every higher education institution's mission.' (Department for Business and Skills, *Higher Education: Students at the Heart of the System*, June 2011)

The last 18 months have seen significant reforms in higher education across the four nations of the UK, unprecedented for a generation. Though taking very different approaches, the four administrations in England, Northern Ireland, Scotland, and Wales have all introduced far-reaching reform to improve higher education provision by increasing the emphasis on learners. Critical to achieving this are highly trained and innovative teaching and learning support staff.

The Higher Education Academy (HEA) plays a key role in this. As the national body for enhancing learning and teaching in higher education, a central part of our focus is on the accreditation of initial and continuing professional development (CPD) programmes delivered by higher education institutions. Accreditation provides external confirmation that this institutional provision is aligned with the UK Professional Standards Framework for Teaching and Supporting Learning in Higher Education (UKPSF). It is a widely recognised – and verifiable – indication that the provision has met the required standard.

Perhaps surprisingly given the commitment to, and investment in, the enhancement of higher education provision by successive recent governments, there has been no comprehensive survey of the impact of Teaching Development Programmes (TDPs). This report by HOST Policy Research provides an up-to-date overview of the research undertaken in Europe and the United States, in particular, and highlights its strengths and limitations. It also presents a challenging set of recommendations for the HEA and the higher education sector to consider in order better to inform future decision-making.

Of particular importance are the calls for an agreed methodology for the impact assessment of TDPs and for the establishment of cross-institutional, longitudinal studies of their impact, which will overcome the limitations of recent and recurrent small-scale and short-term evaluations. We owe it to students to provide them with the best possible learning experience during their time in higher education, and excellence in teaching is one way of achieving this. We look forward to working with the higher education community to translate the recommendations into action.

The research is a timely call for concerted effort to address a key issue.

Professor Craig Mahoney
Chief Executive
Higher Education Academy



Acknowledgements

A review of this nature draws on very wide experience and not only from the over 130 authors and co-authors whose published research has been the focus of this research. On behalf of the research team at HOST, I would like to thank those authors for their contributions to this growing field of inquiry, and also the individuals and agencies – in the UK and elsewhere – who have contributed their experiences and suggestions for source material.

A number of HEA staff have also made direct contributions based on past research and evaluation in each of the home countries of the UK, and others in the HEA have contributed to marshalling some of the discipline-specific available evidence. A special thanks are due to those in HEA, and outside, who have drawn this review to the attention of colleagues in some of the UK professional networks, and to the always helpful and encouraging contributions of the Project Steering Group.

Finally we would like to thank both Professor Keith Trigwell and Trevor Habeshaw for their valuable insights and helpful commentary on our analysis. Our conclusions, however, together with any errors or omissions, are solely the responsibility of the authors.

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Section I: Introduction

I.1 The study

In May 2012, the Higher Education Academy (HEA) asked HOST Policy Research (HOST) to conduct an intensive review of the impact of teaching development programmes in higher education (HE). This is a timely assessment, which coincides with the adoption of a revised framework for professional standards by the HEA and growing policy interest in teaching development of academic staff. It also comes at a time of growing scholarly interest in improving teaching quality, with a widening research base providing the focus of this review.

This report follows an intensive review period. It is presented as a *state of the art*, evidence-based assessment of the impact of HE-based teaching development programmes and initiatives. It also looks at the strengths (and weaknesses) of the research base from which the evidence is drawn, and reflects on the lessons for developing evidence-based future policy developments.

I.2 Background and scope

In most developed economies, and widely in Europe (Parsons *et al.*, 2010), teachers in HE are not required to hold accredited teaching qualifications either by statute, standard or convention¹. Some commentators have characterised university teachers as the last of the 'non-professions' (Baume, 2006), and elsewhere in education including non-HE areas of post-compulsory education, all teaching staff are required to be qualified (or qualifying)². The UK is not unusual in reflecting this picture, but the situation is changing and has seen rising activity in promoting and delivering teaching development strategies, especially since the 2003 English Higher Education White Paper (DfES, 2003).

The approaches that have been put in place across the UK have been very diverse. These reflect the different policy contexts across the four nations, origins of different parts of the 'HE sector' and especially the independent pedagogic traditions of different institutions (Gibbs *et al.*, 2000) and disciplines. The variety that has emerged has encompassed predominantly institutional programmes combined with some nationally supported programmes, as well as subject-focused initiatives including some emerging areas for public policy, such as entrepreneurship education.

Public policy in the UK has played an important role in stimulating these developments, especially in recent years including with the establishment of the HEA in 2004, which is devoted to the enhancement of the quality and impact of learning and teaching in HE. This has included a series of cross-institutional and partnership arrangements including the HEFCE-funded Centres for Excellence in Teaching and Learning (CETL) programme (England and Northern Ireland) 2005-2010, the Scottish Quality Enhancement Themes (2003-present), Wales' Future Directions initiative (2009-present) and the HEA's continuing UK-wide discipline-specific support.

¹ For example, by commonly applied HE recruitment or selection practices.

² Pre-qualification teaching staff on school-based training programmes has been expanding in the UK, and since 2002 all teachers, trainers and tutors in publicly funded further education and skills programmes are required either to hold an approved teaching qualification or be undertaking an accredited programme of pedagogic training leading to an approved qualification.

Nonetheless, in the UK, delivery has emphasised institutionally led strategies and provision. Here, institutional approaches have evolved mostly independently but under some common stimuli. In recent years, this has included the (now revised) UK Professional Standards Framework (UKPSF) for teaching and supporting learning in HE, which provided a focus through a framework of common standards³, and encouraging institutions to develop and apply teaching development programmes fitted to the specific needs of different academic and other staff.

HE teaching qualifications have been a part of this 'framework' approach (e.g. the Postgraduate Certificate in Academic Practice (PGCAP)) but, although qualifications have been gaining currency, the direct relationship of institutional teaching development initiatives to qualifications remains variable. Formal, sometimes mandatory, but non-qualification approaches have dominated most institutional and other arrangements, and developed under different strategic and funding stimuli. However, for new and aspiring academic staff⁴ the qualification pathway is becoming a more established feature of institutional strategies.

Approaches to teaching development in UK universities – as outside – do not stand still. These continue to evolve, and teaching development in HE has correspondingly attracted growing research interest. This in turn has resulted in a widening literature aimed at scholarly inquiry and knowledge exchange. Much of this has traditionally focused on processes – the ways in which teaching development programmes are developed and delivered. There has been, until recently, much less systematic research interest on programme outcomes, and the difference they make to participants and practice (Hanbury *et al.*, 2008).

In the UK, with government and executive administrations in the four home countries looking to teacher development programmes to boost teaching quality and institutional responsiveness, impact evidence is becoming more and more important. This study aimed to explore the available evidence and in particular to:

- a review the literature that exists on the impact and efficacy of teaching development programmes, in order to draw conclusions about the elements of programme design and delivery that appear to have the greatest impact on the improvement of student learning;
- b review the literature in order to make specific recommendations about the method and nature of future research into the efficacy and impact of teaching development programmes;
- c assess the gaps and weaknesses in the available research, with a view to identifying themes, priorities and methodology for any future research in this area.

A number of subsidiary research questions were set by the HEA and these have been amplified into a series of specific evidence collection strands (see Annex A). The scope of the study reflects the HEA's UK-wide remit, but account has also been taken of international evidence to provide a comparative context for the research and to draw on evidence and lessons emerging from teaching development programmes outside the UK.

1.3 Approach to the review

Our approach to addressing these information needs has centred on an essentially 'secondary' research methodology. This has aimed to identify and make best use of what had been expected to be widely dispersed published sources including key agency evidence, a range of literature including scholarly publications, as well as other research and evaluation evidence. The review has involved a four-stage methodology:

- 3 Specifically the *UK Professional Standards Framework*, which is sector-owned and provides support for the design and structure of institutional teaching development programmes.
- 4 For example, through graduate teaching support or assistant development programmes.

- Stage 1: Project inception and planning, including HEA progress reporting and liaison.
- Stage 2: Mapping wider international experience of HE-centred teacher development programmes, and evidence sources from cross-national agencies.
- Stage 3: Systematic review of literature and documentation against the HEA's research questions, together with a gap analysis of coverage and validity.
- Stage 4: Collation and reporting including an interim and draft final report(s) and taking into account HEA comments in this final report.

This approach has been put together with the necessary intensity of the study in mind and to ensure timely delivery of findings and recommendations on future priorities for the HEA. Beyond a systematic literature review, we have also sought wider evidence through a call for ongoing or (as yet) unpublished research-based evidence and through selective social media⁵.

A wider assessment has also been conducted of cross-national evidence available from selected European and other international agencies. This has provided little evidence, establishing that while such agencies have a policy review interest in the outcomes of national efforts to raise instructional professionalism in HE teaching staff, they have not conducted any systematic research themselves to understand it.

The literature review identified 312 published sources of potential relevance from our search criteria, with just over a third proving to have some specific relevance. Many of the other sources we have identified either were mis-tagged by journal or database references systems (i.e. their content was not appropriate), or were centred on impact of teacher development outside of HE. Some of those that were HE-centred were essentially descriptive reviews of teacher development initiatives and had no content relevant to the impact focus of this review. A small proportion of those selected for deeper review focused on the impact of staff development on different educational levels including but not specific to HE.

I.4 The report

The draft report is presented in five sections, which following this introduction to the review comprise:

- a review of the context to understanding programme impact including programme evaluation and impact assessment in the UK and more widely (Section 2);
- a synthesis of the available evidence on achieved impacts – for teachers and students, and on other programme impacts (Section 3);
- an assessment of impact research methods and models, and the strengths and merits of the available evidence including improvement opportunities (Section 4);
- a concluding assessment looking across the review and also setting out emerging evidence needs and gaps, possible priorities and next steps (Section 5).

5 In an attempt to ensure that we had captured work in hand or unpublished sources, a request for information was posted with Network and Learn and within two LinkedIn groups – Higher Education Management (36,378 members) and Higher Education Teaching and Learning (18,668 members). Although both sources elicited replies of interest and support, neither produced any empirical studies. The British Council were also contacted to see if any of their programmes, supporting higher education development, were relevant and, if so, had been evaluated – the response was negative.

In addition, the report provides two supporting annexes. The first sets out the research issues and questions set by the HEA (Annex A). The review draws extensively on published research by others, with citations drawn together in the second annex – the supporting bibliography (Annex B). We caution that multiple references are made to some sources across the sections of the report. This reflects the particular significance of some of these sources, and their wider relevance for different aspects of the impact evidence covered in this review.



Section 2: Understanding programme impact

2.1 Introduction

The various teacher development initiatives that have taken place in the UK need to be set against a wider context for HE. This section looks at some of this backcloth and in particular at:

- teaching development activities in context;
- HE teaching development programmes and their effectiveness;
- understanding the evidence base.

This wider context continues to evolve, but in the UK is changing particularly rapidly. Our starting point is consequently to look at some of the factors affecting institutional and other responses to teaching staff development, and teaching improvement as a quality instrument, in the policy context for HE.

2.2 Setting the policy context

The last 25 years have seen HE in the UK expand greatly. This has been accompanied by important structural and funding changes led by a succession of public policy reviews. A part of this has been a substantial increase in the focus on educational development for academic staff.

Specific policy drivers for this change have included the English White Paper, *The Future of Higher Education* (DfES, 2003), which provided for a substantial public investment to encourage good teaching practice and to reward those who are excellent in teaching. This was reflected in the Higher Education Funding Council for England's (HEFCE) Strategic Plan (2003), which made corresponding commitments, endorsing the aim to improve the status and recognition of excellent teaching and learning as a key element in the mission of HE, alongside research. Public policy across the four home countries has chosen to promote institution-led approaches and strategies, with encouragement also for partnership activity including the 2005-2010 CETL programme (England and Northern Ireland).

The most recent policy review for HE in England, the Coalition Government's Higher Education White Paper *Students at the Heart of the System* (BIS, 2011), set out a programme of further reforms and a vision for building a world-class HE sector. Central to the current reforms is the principle that when entrants face much higher direct costs, albeit largely deferred, in order to participate in HE, providers have the obligation to be more responsive to student choice and demand, and should be free to respond to those needs. Informed choice by prospective students is at the heart of these developments, with measures of teaching quality one of the key features to inform student decisions. The Scottish Government (2012) has recently published a pre-legislative paper setting out the next steps they will take to develop their proposals for the delivery of their manifesto commitments for post-16 education. Their proposals do not include the wholesale transfer of the financial burden to the student, as they do in England. The devolved administrations of Northern Ireland and Wales are also reviewing policy in this area. However, in all three cases, regardless of the funding

regime, it is likely that many of the pressures regarding perceptions of quality and value for money will be shared.

As an important early step, the Government has subsequently developed the Key Information Set (KIS) to give prospective students access to high quality information about different courses and institutions, enabling more informed choices. Inclusion of these data reflects an acknowledgement that in an environment of rising fees and deferred costs for individuals (i.e. through student loans), students are likely to consider the quality of teaching before making their selection of HEI at which to study:

... the increase in tuition fees for English students will mean that the sector will need to focus more than ever on ensuring educational quality. Students, quite rightly, demand value for money, and institutions will have to concentrate on further establishing their effectiveness in order to justify higher fees - the quality of learning and teaching will be key. (Mahoney, 2012)

The focus on demonstrably enhancing (and measuring) institutional teaching quality is, of course, hardly a novel development, and is better regarded as a continuation of a long-standing trend to increase the focus on quality of teaching as an issue in institutional competitiveness. However, this is given added impetus as one of a number of considerations likely to become increasingly prominent to inform and aid institutional and subject choices by prospective students.

The interest in teaching quality, its improvement through staff development and the understanding of its effectiveness, is consequently not new and is not fuelled wholly by the accelerating demands of student choice. Nonetheless, it could be reasonably argued that undergraduate education in the UK in particular (in common with the United States), is now more than ever regarded as a commodity within a competitive (mainly) domestic market. Participants' choices are seen not primarily as aspirational or lifestyle choices, but increasingly as life investment decisions related to employment prospects (Chalmers *et al.*, 2008).

With institutions likely to be facing more informed choices by applicants, finite or shrinking demand and potentially falling student learning revenues, teaching quality emerges as a discriminator for many institutions. The quality and effectiveness of their actions regarding teacher development are set to move centre stage in institutions' strategic responses to managing these and other challenges.

2.3 Teaching development in context

Against this background, public policy (and funding) has encouraged a higher profile and strategic approaches to the improvement of teaching quality by institutions (Gibbs *et al.*, 2000). An added impetus in the UK was the adoption of 'learning outcomes' across Europe as part of the Bologna Process and its associated Dublin descriptors, which impacted on the teaching and learning methods needed to achieve those outcomes (Lindblom-Ylänne and Hämäläinen, 2004). Similar changes occurred much earlier in some other developed economies, most notably the US, in part driven by student protests about "irrelevant courses and uninspired teaching" (Gaff and Simpson, 1994, p. 168).

Within the UK there has been rising activity in promoting and delivering teaching development strategies especially since 2003. Gibbs estimates that this area of work, which involved only around 30 active academics, mostly part-time, in the UK in the 1970s, now involves thousands of academic development personnel and substantial institutional investments (Gibbs, 2012). Others (D'Andrea and Gosling, 2005; Stes *et al.*, 2010) have also noted that the emergence of discourse around learning and teaching is one of the more remarkable HE phenomena of the last decade.

What has emerged in the UK from this sharply expanded activity has been characterised as very diverse. Different approaches have been taken to describing this diversity in the UK but, while avoiding classification, it is clear that 'programmes'

vary from an expanding range of usually part-time and certificated interventions (McArthur *et al.*, 2004), typically of one year's duration, to include continuing education through (usually) short-term, block or intensive workshop programmes (Rust, 1998). These post-experience programmes may also be complemented by more dynamic measures such as *specific* teaching staff development activities including systematic mentoring and observation-based video feedback (Schreurs and Van Vilet, 1998) or what has been collectively called "micro-teaching" (Trigwell, 2012) and also "portfolio work" (Jarvinen and Kohonen, 1995). Diversity, of course, goes beyond mode of delivery and includes different programme focuses and purposes ranging from changing practice to changing perceptions.

Researchers have suggested this UK diversity stems in particular from the fragmented development (and origins) of the 'HE sector', a particular feature of this seems to be the independent pedagogic traditions of different institutions (Gibbs *et al.*, 2000). Early analysts of these developments also noted the importance of different institutional emphases of a broader spectrum of knowledge and skills (Nasr *et al.*, 1996). In some situations cohesion has also been positively influenced by wider quality assurance initiatives such as that led by the HEA and QAA for the Welsh Assembly Government (HEA/QAA, 2009).

In recent years, UK developments have seen an embryonic trend towards greater cohesion, in particular through the (now revised) UKPSF, providing a framework of common standards and a basis for systematic accreditation of different institutional approaches. This has encouraged institutions to develop and apply teaching development programmes fitted to the specific needs of different academic and other staff.

While common qualifications have been a non-mandatory part of this 'framework' approach (e.g. the PGCAP), the relationship of qualifications to formal institutional programmes for teaching development has been variable. Formal, sometimes mandatory, but non-qualification approaches have dominated most institutional and other arrangements and developed under different strategic and funding stimuli. However, the qualification pathway for new academic staff is becoming more a feature of institutional strategies.

Recent analysis has suggested that in the UK there have been contrasts between generic development approaches, usually located centrally within HEIs and on occasions HEI partnerships, and specific (usually) disciplinary-based approaches (Gibbs, 2012). The latter are often seen as collaborative and sometimes led by nationally based disciplinary associations or professional groupings. While generic teaching development programmes have been said to be becoming more sensitive to disciplinary differences, the generic and specific approaches often have little interaction (Gibbs, 2012). Here, some comparative evidence from Australia, New Zealand and the United States suggests that differences in disciplinary contexts are reflected not just in disciplinary pedagogies, but disciplinary cultures underpinning teaching cognition (Kane *et al.*, 2002).

In some institutions teaching development approaches have been mandatory for newly appointed academics, or during their early career, but compulsion has not been a feature of the development of established staff. To this can be added voluntary provision for aspiring academics including graduate teaching support or assistant development programmes. Looking across this legacy and continuing developments, Gibbs (2012) has described this area of activity as having a number of components (not listed here) including the development of teachers as individuals and groups. Gibbs' recent assessment also lists a series of discernible trends in educational development over recent decades, and specifically:

- emergence from a focus on the classroom to a focus on the learning environment;
- changing emphases from individual teachers to a focus on course teams and departments, and also leadership of teaching;
- a parallel change from a focus on teaching to a focus on learning;
- a developing emphasis from change tactics to change strategies;
- a changing focus from quality assurance to quality enhancement;
- a changing focus also from 'fine tuning' of current practice to transforming practice in new directions.

At the same time, Gibbs suggests that these trends have been accompanied by a number of conceptual changes; psychological to sociological; atheoretical to theoretical; experiential and reflective to conceptual and empirical; unscholarly to scholarly; amateur to professional; and context neutral or context blind to context and discipline sensitive (Gibbs, 2012). Others have seen these trends and conceptual shifts as reflecting the complex, multi-factorial nature of the professional development of HE teachers.

2.4 HE teaching development and its effectiveness

If researchers are starting to show common ground on what teaching development in HE constitutes, there are various measures of how institutions have been increasing their focus on teaching quality. One ready measure is the extent to which teaching quality has become a component of their human resource and performance management processes. In 1994, institutions reported making, on average, only just under one in eight (12%) of promotion decisions primarily on the grounds of 'teaching excellence'. At the same time, just over a third of all institutions (38%) reported not making any such promotions (Gibbs, 1995). This situation seems to have changed rapidly. Although it is not a direct comparison, it nonetheless seems that just six years after Gibbs analysis suggesting teaching performance was a minor variable in staff progression decisions, the proportion of institutions including recognition and reward mechanisms in their learning and teaching strategy had increased to 65% (HEFCE, 2001).

The provision and use of data on teaching quality to support student choice (as well as institutional performance assessments) is controversial and its utility is not straightforward. Researchers have suggested that there is no generic definition of good teaching that suits all contexts and student cohorts (Donnelly, 2007). Much will depend on context – a recurrent feature emerging from the research – and also what teaching frameworks or models are being applied, to whom and where.

As a result, trying to determine whether or not good teaching – of any kind – supports or encourages good learning is seen as extremely difficult. Gibbs (2010), one of the few researchers with cross-national evidence, notes that (at least until very recently) comparative indicators of quality currently available in the UK are unlikely to provide prospective students with a valid basis to distinguish between individual courses with regard to their educational quality.

Gibbs goes further to suggest that on these foundations, the collation of currently available data into institutional or sub-institutional league tables is likely to be at best misleading and at worst inaccurate. He suggests that the best predictor of educational gain is measures of educational processes – primarily those that concern a small range of fairly well-understood pedagogical practices that engender student engagement (e.g. high quality direct feedback on students' assignments).

The argument is challenging, not least because in the UK there are very limited data about the distribution and prevalence of these educational practices. This is because arrangements for quality assurance, and institutional review and comparison, do not systematically document such evidence. Nor are they (in the main) the focus of the comparative National Student Survey.

This situation in the UK is in contrast to some international experience, notably in the US where the National Survey of Student Engagement (NSSE) has been used successfully by many institutions to benchmark and identify weaknesses in current educational processes. The same source has also proven a baseline to demonstrate the positive impact of the introduction of certain educational practices. Here, it has been reported that pooling data across such innovations provides a valid basis to guide other institutions in the adoption of practices that are likely to be effective. However, the NSS cannot be used in the same way (Gibbs, 2010).

Against what might be seen as a confused situation for understanding the effectiveness of institutional activities, issues of measurement of teaching quality (and their use as tools in evaluation) are now emerging as a focus for effort in the UK. However, this issue is not confined to the UK, although the policy context, and levers of change, are different in other countries. By the late 1990s there were calls in Australia, the US, Canada and elsewhere for more systematic research-led approaches to effective measurement. By the end of the decade researchers were calling for an international collaborative research programme (Gilbert and Gibbs, 1999) to provide a focus for knowledge sharing. The need to ensure an appropriate evidence base continues to be highlighted (Chalmers, 2010), with recent commentators favouring combining quantitative input and output indicators in combination with qualitative process and outcome indicators (Chalmers, 2010; Stes *et al.*, 2010a).

2.5 The scope of the evidence base

This study has focused on the available institutional and cross-institutional evidence from programme evaluation and related research. Its particular focus has been practical, evidence-based assessments of impact and impact determinants. Such evidence has long attracted scholarly inquiry, and by 1981 Levinson-Rose and Menges were able to identify some 71 studies from the mid 1960s of teaching development programmes and interventions (Levinson-Rose and Menges, 1981). However, the authors also provided an early diagnosis of one of the central challenges of those seeking to understand programme impacts, and were highly critical of the quality of much of the early research.

Nearly two decades later little had apparently changed. In 1998, Weimer and Lenze sought to extend (by scope) and update the 1981 assessment focusing on literature from the 1980s. Although adopting a more generous definition of the research in scope, and acknowledging the expansion of scholarly inquiry in this area, they felt their review provided inconclusive evidence of the positive effects of programmes. Like their predecessors 17 years earlier they also called for systematic approaches to provide for more and higher quality research.

Evidence drawn from the 1970s and 1980s inevitably lacks currency, although it may still have lessons for issues such as viable methodologies. However, later reviews of the research and evaluative evidence base (Kreber and Brook, 2001; McAlpine, 2003; Prebble *et al.*, 2004) have also tended to reinforce these conclusions about the fragmentation and often lack of coherence of much of the evidence base.

All of these studies, and many of the contributions they sought to review, are returned to in the next two sections of this study. This review aims to harness this growing evidence base to look very specifically at programme impact, to identify any common ground on their impact assessment, and to better understand the strengths of the evidence base and its limitations.



Section 3: Issues emerging

3.1 Introduction

The 'reviews' cited in the last section have been a starting point for this study. The review process has been described earlier and has focused on 108 identified sources meeting our criteria of being evidence-based and reporting on (at least some) impact findings. This evidence is drawn together here for six specific areas:

- impact on teachers' attitudes, knowledge and skills;
- impact on teachers' behaviour and practice;
- effects of disciplinary or generic programme focus;
- effects of compulsory and or voluntary participation;
- the impact of teacher development programmes on the student learning experience;
- other impacts.

This classification of evidence, drawn largely from the most recent review conducted by Stes and colleagues (Stes *et al.*, 2010b), is adapted to add further categories the HEA have set out as of particular interest to policy development. While all of the sources cited have relevance to one or more of these areas, the scale and breadth of this evidence drawn on from individual studies has been highly variable – an issue returned to in the next section of the report.

3.2 Evidence of impacts on teachers' attitudes, knowledge and skills

Stes and colleagues (2010a) conducted a review of 37 published sources of evidence on the impact of 'instructional development' in HE. In a watershed study mapping the breadth of available evidence against their typology of impacts, they concluded that effect on teachers' attitudes, knowledge and skills was the most common focus for analysis of impacts of programmes.

Looking more widely than the Stes review, it seems that relevant research has been drawing predominantly on self-assessed 'participant' data, although some studies have also included control group contrasts as a way of assessing additionality. However, these studies lack a common framework for what constitutes impact on teachers' attitudes, and variously look at constructs and concepts of teaching and learning, intentions, knowledge and skills, motivations and self-efficacy. The review by Guskey of the nature of faculty development impacts (2000) had collectively referred to these as "academics' conceptual change". Stes and colleagues (2010a) went further and attempted to classify identified attitudinal impacts according to:

- impacts on teacher attitudes (changes in attitudes towards teaching and learning);
- impacts on teaching conceptions (changes in ways of thinking about teaching and learning);
- impacts on teaching knowledge (acquisition of new or enhanced concepts, procedures and principles);
- impacts on teaching skills (acquisition of thinking/problem solving, psychomotor and social skills).

The authors distinguished between these changes and others involving transfer of these changes and acquisitions through changed behaviour (reviewed below). Their reviews showed some crossover between studies, with most (27 of the 36) providing evidence of one or more of these impacts – but none of all.

Impact on teaching attitudes: Work by Stes and colleagues (2010a and 2010b) showed that, among the studies they reviewed, the most common impact focus was on teachers' attitudes, followed by teaching knowledge and skills, but with little emphasis on teaching concepts. The research evidence for teaching attitudes is taken here together with teaching conceptions – the two being closely related and often not distinguished in some of the reporting by researchers. However, Stes and colleagues were critical of the evidence quality for many of the studies they reviewed in the area of teaching attitudes, emphasising that while:

... positive effects were reported ... none of these studies was a control/comparison group used. Only (one study) used a pre-test/ post-test design. (2010a, p. 31)

The current review went further than the Stes *et al.* review of 37 published studies. This included a large-scale study in Europe by Hanbury and colleagues (2008), which looked at changes to teaching attitudes and conceptions in over 30 UK universities. This did use a pre-test/post-test design based on the Approaches to Teaching Inventory (ATI) tool (Pintrich *et al.*, 1989; Trigwell and Prosser, 2004) to diagnose changes in participant samples across these universities. The study showed a large effect for programmes in achieving conceptual changes and in particular a shift in participating teachers towards student-led approaches.

The study by Hanbury and colleagues was important not only for its change measurement approach and scale, but in providing indicative evidence that since changes towards student-centred teaching approaches have been associated elsewhere with desirable changes in student approaches to learning (Trigwell *et al.*, 1999; Trigwell, 2012), then HE-based teaching development programmes would seem to be having positive effects on teachers' underpinning conceptions.

Postareff *et al.* (2007) also undertook a more systematic review based on 200 HE teachers from different disciplines across two institutions. The study was an attempt to bring more information to this discussion by examining whether the length of training of university teachers has an effect on approaches to teaching measured by the ATI and, furthermore, on self-efficacy beliefs. The study included a control group and was mixed method, involving the use of the ATI and interviews. Their assessment showed that the training enhances a shift from the information transmission/teacher-focused (ITTF) approach to conceptual change/student-focused (CCSF) approach, but cautioned that this is a slow process.

From this study, only after a year-long process of pedagogical training were teachers reported to be more student-centred than those who did not have training at all. In interviews, teachers mentioned only positive effects of pedagogical training on teaching and that it made them more aware of their approach to teaching and their teaching methods. The authors concluded that awareness of one's own approach to teaching is essential in improving teaching practices.

The results of this study confirmed earlier work (Trigwell and Prosser, 1996; Akerlind, 2003; Gibbs and Coffey, 2004) that training increased the extent to which teachers adopted the CCSF approach to teaching, but also that changes in the ITTF approach were not as strong. Put together the evidence implies that programme-related changes to approaches to teaching and self-efficacy beliefs typically develop only slowly. Postareff's evidence suggested it takes at least a one-year training process until positive effects emerge. In fact, shorter training seems to make teachers more uncertain about themselves as teachers:

... shorter courses might increase degrees of uncertainty, and lower self-efficacy, whilst a longer course increased the teachers' self-efficacy, and supported conceptual changes. (2007, p. 259)

In this analysis, the authors postulate that shorter courses result in a negative effect because they raise the teachers' awareness and make them less certain about their self-efficacy. Over a longer period they become more aware of ideal ways to teach. Teachers with no training lack the self-awareness and may feel that they are good, student-centred teachers – training initially causes this perception to collapse.

The period of gestation was even longer for changed beliefs to transfer to practice – an issue returned to below. This broad conclusion is supported by other evidence, with Gibbs and Coffey (2004) arguing that university teachers became less teacher-centred and more student-centred by the end of the four to 18 months' training. Put together the available evidence suggests that after a long training process, a shift from a teacher-centred to student-centred approach is possible (Postareff, 2007), but it also shows that the effect of pedagogical training is not necessarily linear.

Unusually among such studies, Postareff and colleagues went further to provide some longitudinal evidence from a follow-up (Postareff *et al.*, 2008). This looked again at the experiences of a smaller sample of the initial participants, contrasting those who had participated in further pedagogic training after the initial programme (2004), and those who not participated in further training since 2004. This showed that there were more positive changes in the measured scales among teachers who had acquired more credits of pedagogical courses since the year 2004 than among teachers who had not acquired more credits.

Donnelly (2007) reports a study of a Postgraduate Certificate in Third Level Learning and Teaching, an accredited continuous professional development (CPD) programme for academic staff and faculty members, located in an HEI in the Republic of Ireland. This CPD programme creates a climate of trust and respect that is approving of dialogue, encouraging of open debate, and supportive of risk-taking in teaching, building on the work of Marshall (2004) who noted that: "the power of peer observation resides in its developmental and collegial orientation and its exposure of colleagues to affirmation, constructive criticism, and the experience of how others teach differently" (p. 187).

The programme was designed to provide a forum for debate and dialogue around what constitutes 'good learning' for students and 'good teaching' by academics. Critical insights on the scheme are offered through a synthesis of relevant theoretical literature, discussion of the mechanics and climate of the scheme, and evaluations by the academic staff and faculty members participating over the past five years. It was evaluated using a mix of data – evaluation forms, interviews and document collection. The author concluded that the programme aids the integration of theory and practice, and demonstrates the value of interdisciplinary learning and how it can benefit, in particular, the practice of teachers new to HE.

Looking outside the evidence of impacts from programmes in English-speaking countries, Ménard *et al.* (2011) in Quebec used the Teacher's Sense of Efficacy Scale questionnaire developed at Ohio State University (OSTES) to measure individual teacher's assessments about their efficacy in student engagement, instructional strategies and classroom management. This questionnaire had to be translated into French, and it is not clear whether the long or short form was used⁶.

The use of the OSTES scale here was seen to have worked better for assessing impacts on teachers' attitudes than a parallel exercise looking at impacts for the students (reviewed below). However, the OSTES-based 'alpha' coefficients as calculated did not correspond well to those in the paper from which the instrument was sourced. This effect was apparently due to changing the size of the scale used as well as working with a smaller sample of teachers. For the next iteration of the evaluation programme, Ménard *et al.* will return to the original nine-point evaluation scale recommended by Hoy (2008).

6 <http://people.ehe.osu.edu/ahoy/research/instruments/#Sense>.

Butcher and Stoncel (2012) used an institutional case study approach to explore the nature and extent of the impact of the Postgraduate Certificate in Higher Education (PGCHE) on teachers appointed for their professional expertise. Data were collected in four iterative stages to investigate perceptions of graduates from the course (2006-2009), as well as current participants, midway through their programme. The research involved mixed methods (document collection, survey, semi-structured interviews and a focus group). Analysis revealed that teachers were willing to adopt new approaches to teaching, planning and assessment. A shift from teacher-centred to learner-centred approaches (Prosser *et al.*, 2006) was apparent, together with a shift in 'professional identity'. In particular, the study confirmed the benefits of interdisciplinary discourse. The same study also showed impacts beyond teachers' attitudes and conceptions, on the student experience and on participants' careers, and these were also discernible at departmental levels.

Many of the North American, European and wider studies providing some impact evidence on teacher attitudes and concepts are based on specific programmes, often reviewed at a particular point of time and uncommonly followed up (at least in the published literature) after the initial review period. Others have been described as focusing on particular teacher development activities or interventions falling short of whole programme evaluation (Kreber and Brook, 2001). While a narrow impact evaluation focus does not invalidate findings, it makes the delivery focus and context of the programmes important and some researchers have commented that such contexts are often not fully described in literature, limiting their utility (Stes *et al.*, 2010a). It also means that many of the studies are relatively small scale, and in some cases based on experimental or quasi-experimental approaches, a feature reflected in other impact evidence sources.

Lueddeke (2003), for example, reports an exploratory study to inquire into the relationship between a number of factors that characterise academics working in HE and their approaches to the scholarship of teaching. The findings suggest that discipline and teaching conceptualisation have the strongest influence on teaching scholarship, while qualifications and years of teaching have a moderate impact; gender and position do not appear to play a significant part. The impact evidence base from small samples has been criticised by some as insubstantial, but the quasi-experimental approach has also been welcomed by others (Stes *et al.*, 20010a) as making an important contribution in testing future evaluation frameworks for reliability.

Impacts on teachers' knowledge: Specific evidence of impacts on teachers' knowledge is fragmented. However, two studies did focus on the use of teaching development programmes for building teacher awareness and skills in working with students with disabilities. Getzel *et al.* (2003), for example, report the results of an online survey sent to 21 universities and colleges funded during 1999-2002 by the United States Department of Education's Office of Post-secondary Education (OPE) to develop and implement faculty and administrator professional development activities as part of an effort to ensure that students with disabilities receive a quality post-secondary education. Responses were received from 17 institutions and analysed qualitatively to identify recurring issues and themes. A key conclusion was that in order for CPD activities to thrive it is necessary to build partnerships with faculty, administrators, students with disabilities, and other departments. However, the authors noted that the survey framework and narrow range of respondents' roles (Project Directors or Co-ordinators only) may have limited the information and responses received. The authors also commented on the need to undertake studies to measure long-term individual and institutional changes.

A similar focus was taken by Sowers and Smith (2003) who undertook a cross-HEI study of a component of the Health Sciences Faculty Education Project (Oregon Health and Science University) involving 39 institutions. The programme, 'A Day in the Life of Health Science Students', was field-tested with 247 Nursing, Medicine, Dentistry and allied health faculty across these institutions. Participants were asked to complete a survey before and after the training and these were analysed to reveal perceptions of the ability of students with disabilities to be successful in their programmes. The results

demonstrated that participation in the training positively impacted the knowledge of the participants about students with disabilities. However, the survey lacked a control group, was entirely dependent on self-reported data and lacked any attempt to determine the long-term impact.

Impact on teaching skills: Evidence of impacts on teacher skills is also more limited and, where it is available, tends to focus on self-assessed reporting by programme participants. A study by Dixon and Scott (2003), for example, drew on self-assessed feedback that suggested teachers judged their participation in teacher development programmes as having increased their teaching and learning skills. This reported particular positive effects for creating “optimal and comfortable learning environments”, time management and enhancing student motivation and interaction. The study by Postareff and colleagues (2007) using follow-up interviews with some survey participants showed that teachers reported the development of reflective skills from participating in the programme.

Research evidence on programme impacts on teaching skills often lacks precision with effects frequently reported at generalised levels for skills acquisition. A North American based review, by Persellin and Goodrick (2010), focused on skills acquisition and surveyed past participants of the Associated Colleges of the South Summer teaching and learning workshop. This programme was established in 1992 and is targeted at faculty from the ACS consortium of 16 liberal arts colleges and universities in 12 states across the south. The five-day workshop aimed to provide opportunities to hone teaching skills through feedback from small micro-teaching groups as well as large-group plenary sessions on a variety of topics. By adopting a cross-disciplinary approach, the workshop ensures feedback is from the perspective of learners, not disciplinary colleagues who already have mastery of the field. The survey results (370 teachers) suggest that participation had a lasting impact on “professional development and skills”. Female respondents, in particular, reported more awareness and thoughtfulness about use of teaching skills, and reported having tried new strategies and taking more risks in their use of different teaching skills since participation. The Persellin and Goodrick findings support other work by Donnelly (2007) in Ireland and Marshall (2004) regarding the value of peer feedback to transfer of skills from teaching development programmes in an environment of trust.

In another review from the US, Romano *et al.* (2004) reported on skills and knowledge effects of a programme focused on the teaching and learning issues of mid-career academics, examining the impacts of the Mid-Career Teaching Programme developed in 1998 by the Center for Teaching and Learning Services (CTLTS) at the University of Minnesota. Participants self-assessed impacts (a self-administered post-programme questionnaire) and a small, representative group were also interviewed. The study emphasised the value to this group of interacting in a structured programme with a peer group of colleagues to focus on ways to strengthen pedagogical knowledge and skills. This emphasised the particular value of embedded peer reflection on both professional and personal challenges. No attempt was made to establish whether or not participation improved classroom practice or student outcomes. The study lacked a control group and was based entirely on self-observation.

A particular focus for the (limited) evidence on skills impacts is on technology-based skills. Two studies, by Howland and Wedman (2004) and by Kahn and Pred (2002), both using a quantitative approach based on pre- and post-test assessments of skill confidence and use, showed participants in programmes felt more comfortable with the embedded use of education technology. Education technology has been an important focus for themed teacher development in many countries, but other focuses, such as enterprise education, accelerating provision of teacher development initiatives do not seem to be matched by systematic research or evaluation into impact on participants' skills and practice.

3.3 Evidence of impact on teachers' behaviour and practice

The review by Stes and colleagues (2010a) showed that many of the studies looking at changes to teacher attitudes – in various emphases – also looked at issues of the transfer of changed attitudes and knowledge through impacts on teacher behaviour. The scale of some of these studies is limited – particularly where evaluation included resource-extensive methods such as pre-tests and post-tests to self-assess or observe changed practice.

An early contribution, using instructor post-test through observation, was conducted by Nasmith and colleagues (1995) with a small-scale 'experimental' review conducted six months to five years after programme participation, and also harnessing a control group. The results looked at use of innovative teaching methods related to the programme content, but showed no significant difference between participants and the control group. In contrast, Gibbs and Coffey (2004), in a much larger-scale review using pre and post-test analysis, looked at changes a year after participation and showed through the ATI tool that participants demonstrated more student-centred application after the year than those in a control group. Postareff and colleagues (2007) endorsed this conclusion, also using the ATI tool to show that participants with more credits from participation in teacher development programmes were more student-centred in their teaching behaviour than those with less.

Dixon and Scott (2003) provided more specific illustrations of impacts on teacher behaviour. On a small-scale sample of participants, they showed some positive effects for over two-thirds of participants on each of four measured indicators of changed teaching 'behaviour':

- increased relevance of teaching;
- interaction with (and 'movement among') students;
- encouraging students to ask questions;
- making eye contact with students.

However, the overall effects on changing teacher behaviour were mixed, and they also reported very limited impacts in another two tested indicators ('availability of teacher to students' and 'awareness of student responses to their teaching style').

Hewson and colleagues (2001) also showed positive effects (although on different behaviour measures), but were more cautious about the scale of transfer than Dixon and Scott. They used a pre-test and six-month delayed post-test approach from a programme centred on medical educators and showed positive effects for two of 15 tested teaching competencies, with some corroboration of these changes from a student assessment also conducted at the same time. Healey (2000) has also cautioned that transfer of knowledge from programmes may also lead to an initial drop in teaching performance as participants get to grips with the issues for changed practice.

In a contemporary study in Australia, after a decade of progressive approaches to teacher development in HE, McArthur *et al.* (2004) observed from their own research that no differences in subsequent teaching methods were found between teachers who completed a postgraduate certificate and those who did not. However, they still concluded that such programmes had positive effects by pointing out that they:

... enable less experienced faculty to develop teaching and learning attitudes and methods more quickly than they would without undertaking the postgraduate certificate. (p. 10)

There are other small-scale studies, not drawn on here, which showed limited 'transfer' effects of programme participation to practice.

Overall the impression of the available research evidence is of a lack of comparability in its focus and scope. A particular limitation is that the indicators each study has developed for teacher behaviours in practice – the 'transfer variables' they

have researched, are highly customised. These do not provide for a common assessment of what behaviours are (or are not) more likely to transfer from teaching development activities.

3.4 Effects of disciplinary or generic programme focus

The HEA has a particular interest in any evidence of the contrasting impacts from teacher development programmes taking disciplinary as opposed to generic (cross-discipline or themed) emphases. The review suggests this evidence is not strong. The distinction is nonetheless important and Gibbs has recently (2012) talked of the progression from what he refers to as “discipline sensitive” programmes as part of educational development activities becoming more sensitive to teaching – and sub-institutional – contexts. He contrasts what had been a polarised approach to the focus of programmes between:

... two parallel teaching development movements ... generic, centrally located within universities, with specialisms concerned with educational (not disciplinary) domains such as educational uses of technology. The other has been disciplinary, often positioned as offshoots of national disciplinary associations ... These movements have had little to do with each other. (p. 9)

The review suggests that although there has been a variety of disciplinary-focused research, little has been truly comparative. An exception is an important European study across Finland and the UK (204 teachers from Finland and 136 from the UK) where Lindblom-Ylänne *et al.* (2006), one of the few studies that looks specifically across disciplinary boundaries, explored the relationship between academic discipline and university teachers' approaches to teaching. They also looked at the contrasting effects of teaching context on conceptual approaches to teaching. Their analyses showed variation in student and teacher-focused approaches across disciplines (and teaching contexts), with teachers who experience different contexts adopting some contrasting teaching approaches in those contexts. They noted also that teachers from 'hard' disciplines, such as Physics, were more likely to report a more teacher-focused approach, whereas those teaching 'soft' disciplines, for example Media Studies, were more student-focused. These results support previous evidence on interdisciplinary contrasts in teaching approaches, notably by Lueddeke (2003).

Beyond this, the available research usually reflects the specific focus of disciplinary-centred programmes (Sowers and Smith, 2003; Brawner *et al.*, 2002). There is a substantial cluster of evidence here for the longer-established nature of the teaching development of medical educators. Here Steinert *et al.* (2006) also put together a synthesis of research on faculty development in medical education from 1980-2002, which showed a direct effect of programmes on learner-centred teaching skills.

Beyond specific discipline-based programme reviews, comparative research evidence that contrasts the effectiveness or impacts of disciplinary and generic approaches seems very limited. The often small or quasi-experimental scale of much of the identified research does not lend itself to disciplinary contrasts and the lack of comparative approaches – as noted above – means that studies are based on programmes with either a generic or a disciplinary emphasis. However, some of the research does comment on the value of generic or interdisciplinary learning in the design of programmes. Donnelly (2007) for example, in his study of the Postgraduate Certificate in Third Level Learning and Teaching in a HEI in the Republic of Ireland, suggests the integration of theory and practice is enhanced by an interdisciplinary design, in particular for new HE teachers.

In the US, the recent research by Persellin and Goodrick (2010) on the teaching workshops programme of the Associated Colleges of the South suggests that by adopting a cross-disciplinary approach, the programme provides for a focus orientated towards learners, and not dominated by disciplinary colleagues with 'mastery of the

field'. In the UK, a similar observation has been made by Butcher and Stoncel (2012) looking at an institutional approach to the PGCHE teachers. Their research suggested that participants embraced a shift from teacher-centred to learner-centred approaches in part associated with "the benefits of inter-disciplinary discourse".

However, such reflections seem to be few and far between. In addition, a final reflection returns to Gibbs, who raises the issue of what significance should be attached to this dualism, and the value of integrating both generic versus disciplinary emphases (Gibbs, 2012). He suggests that most recently central learning and teaching centres within institutions offering 'generic' skills training have become more aware of disciplinary differences, which go beyond disciplinary pedagogies to embrace different disciplinary cultures in how teaching is talked about and changed. If so, a useful research focus – although one not yet evident – would be on the effectiveness and impacts of more integrated programme arrangements that combine generic emphases with aspects of disciplinary differentiation or sensitivity.

3.5 Compulsory versus voluntary participation in programmes

In the UK, participation in generic teaching development activities has been mandatory in some institutions for newly appointed or early-career academics. In others, mandatory participation has been discipline-specific, for example in medical education focusing on developing teaching skills for recently qualified clinicians. However, while access to teaching development for early-career academics is widespread, any mandatory element has been left to institutional strategies. Compulsion has not been driven by national frameworks in the UK, or on the evidence of this review, elsewhere.

Against this background, much of the available research has not looked at contrasting impacts from compulsory and voluntary participation. However, there has been some related evidence of the effects of participant motivation, which has some value in reflecting on the likely effects of the influence of compulsory versus voluntary engagement in programmes. In this De Rijdt *et al.* (2012), reviewing a series of evaluation studies of teacher development programmes, found "participant motivation" to be the most commonly reported influencing variable on the impact of staff development – although with an effect that was more commonly reported for motivation to learn and less commonly for motivation to transfer learning to practice. The authors contrasted this with research on staff development in other activities outside teaching and HE and where motivation to learn, or motivation to transfer learning to practice, were not the most common influencing variables on the impact of staff development. They concluded that more research was necessary on how motivation works as an influencing factor in professional staff development.

3.6 Student impact of teaching development programmes

In the Stes and colleagues review (2010a) of 37 studies, seven had data specific to the impact on students' experience with five of these from quantitative assessment. Looking more widely confirms their assessment that this is a poorly developed area for understanding programme impact, although also one with distinct methodological challenges.

There have nonetheless been some important contributions providing student impact evidence as well as some methodological insights and potential tools for the use of others in addressing methodological challenges. Four of the more recent studies have been looked at in some detail – although not all were covered by the Stes *et al.* review:

- Trigwell, Prosser and Waterhouse (1999) review the association between teachers' approaches to teaching and students' approaches to learning;
- Ho, Watkins and Kelly (2001) use a pre-test and two staged post-tests to assess impacts on students;

- Gibbs and Coffey (2004) report on a study on the effectiveness of university teachers' training involving 22 universities in eight countries, with parallel student impact evidence;
- Ménard, Legault, Ben Rhouma, Dion and Meunier (2011) describe the early phase of a project to determine the impact of undertaking teacher development training including on students in Canada (Quebecois).

Trigwell, Prosser and Waterhouse (1999): This study in particular set out to establish the nature of the relationship between teachers' approaches to teaching and students' approaches to learning. They surveyed the students and teachers in each of 48 first-year science classes. The study adopted a modified 'tracking-back' approach whose utility has since been advocated on the basis of more broadly based and research-centred teaching and learning impact assessment. Consequently, in advance of the topic being taught the researchers harnessed two generic tools to provide baseline evidence, with teachers asked to complete the ATI and students a version of the Study Process Questionnaire (SPQ). These tools had been previously developed (respectively by Trigwell and Prosser, 1996; Prosser and Trigwell, 1998 (ATI), and by Biggs, 1987 (SPQ), with SPQ modified to the context of this study.

In this study, data were analysed in two phases, factor analysis and cluster analysis at class level, and results showed a clear relationship between the teachers' approaches to teaching and the students' approaches to learning. Teachers who described their teaching as ITTF were more likely to be teaching students who reported adopting a surface approach. This empirical evidence supported earlier research that consistently showed that surface approaches to learning are related to lower quality learning outcomes (Marton and Säljö, 1976; Van Rossum and Schenk, 1984; Trigwell and Prosser, 1991; Ramsden, 1992; Prosser and Millar, 1989). The research indicates a relation between the approach to teaching and the quality of student outcomes and provided a foundation for much subsequent development of HE CPD.

Ho, Watkins and Kelly (2001): Evidence of student outcomes was provided from a small-scale in-depth study of the effectiveness of the conceptual change approach to teacher development programmes. The effect of the programme on the participants' teaching conceptions was assessed by identifying and comparing the conceptions of teaching of the participants before and after the programme. Three semi-structured and staged interviews (pre-programme, immediate post-programme and delayed post-programme a year after concluding) were used, with the academic year 1994-95 treated as a control year, before the programme had run, and the year 1995-96 as the test year, when the participants had been through the programme. The study also used generic tools for measuring change drawing students' perceptions of a participant's teaching in his/her selected course through the Course Experience Questionnaire (CEQ) (Ramsden, 1991), which provided for a comparison of scores at the end of the control and test years. The consequential effect of the programme on student learning was determined by comparing impacts of participants' teaching on students' studying approaches in the pre- and post- programme years using Entwistle's (1994) revised version of the Approaches to Studying Inventory (ASI).

The programme brought about detectable conceptual change or conceptual development in two-thirds of the sample group. Subsequently, all the 'changed' teachers received better ratings on their teaching practices from their students in the following academic year, while none of those who did not change their conceptions showed similar gains in student rating scores. A resultant positive impact on their students' studying approaches was observed for half of the teachers who changed their conceptions. Although the findings provide very encouraging results concerning the effectiveness of a conceptual change approach to staff development, the authors note caution due to the very small size of the sample. Additionally, although all

teachers whose conceptions had changed demonstrated a significant improvement in their teaching practices as perceived by their students, only half instituted a change in their teaching practices to the extent of inducing a positive change in their students' approaches to study.

The authors contend that, on the basis of their evidence from this study, a change in conceptions of teaching is likely to lead to a prompt improvement in teaching practice, although this conclusion is not consistent with some other evidence regarding student learning. They conclude that advancement in conceptions of teaching is a basis for improvement in teaching practices and supports other predictions that, if teachers' conceptions of teaching are developed to a higher level, their teaching practices should improve accordingly (Bowden, 1989; Gow and Kember, 1993; Gibbs, 1995a; Ramsden, 1992; Trigwell, 1995). However, they note that other models exist in the literature to suggest that conceptual changes take place after, rather than prior, to changes in practice (Guskey, 1986) and that in the literature there is an absence of empirical evidence that development in conceptions of teaching will lead promptly to an improvement in teaching practice.

Gibbs and Coffey (2004): A third and important source of broader evidence on student impacts comes from one of the few cross-national reviews. In this, Gibbs and Coffey report a study on the effectiveness of university teachers' training involving 22 universities in eight countries. The study focused on one group of teachers and their students at the start of their training and a year later, together with a control group, which received no training. Evidence was gathered using six scales from the Student Evaluation of Educational Quality questionnaire (SEEQ) (Marsh, 1982; Coffey and Gibbs, 2000) and the 'Good Teaching' scale of the Module Experience Questionnaire (MEQ) (Ramsden, 1991; Gibbs and Coffey, 2004) to establish student ratings for their teachers.

As in the Trigwell *et al.* 1999 study, the Gibbs and Coffey study also applied the ATI tool (Trigwell and Prosser, 2004), although through a modified approach. Consequently, this applied the ATI to establish the extent to which teachers described themselves as teacher-focused and student-focused in their approach to teaching (Trigwell *et al.*, 1999; Trigwell *et al.*, 2000), together with two scales from the MEQ to establish the extent to which the students of those teachers adopted a surface approach and a deep approach to learning. The authors report that they found evidence of a range of positive changes in teachers in the training group, as well as in their students. Set against this, the analysis from the control group showed a contrasting lack of change, or negative changes, in non-participant teachers.

Ménard, Legault, Ben Rhouma, Dion and Meunier (2011): Ménard *et al.* describe the early phase of a project to determine the impact of undertaking teacher development training on new teaching staff and students at foundation HE level (specifically in Quebecois Cégeps). The only formal requirement to teach at this level is a Bachelors degree in the specific subject (although many new staff have Masters or doctorates), but no formal teaching training is required. A number of universities are therefore offering a 15- to 30-credit programme to support new teaching staff. As this programme is not compulsory and there is no empirical evidence on the impact of this teacher training, Ménard *et al.* have set up an evaluation programme. The evidence thus far is based on the early stages of the research programme, not least the challenges of translating American measurement methods to a different language and education system.

To understand the benefits to students, Ménard *et al.* translated the Motivated Strategies for Learning Questionnaire (MSLQ) widely used in the US and iteratively tested versions of the translated questionnaire with students. The analysis of the results for students has not proved as robust as hoped in the first year of application and the authors have had to further modify their translations of the MSLQ for the next cohort of students. Their intent is to identify whether there is a benefit to students in order to inform the debate as to whether teacher training should be compulsory at this level of education.

Other sources: A further source of evidence regarding the impact on students' experience draws on what might be referred to as proxy studies, where programme participants are asked to assess effects on student learning. A small number of other studies have used these approaches – often on very small-scale samples, but are not reviewed in detail here. Such approaches to assessing student outcomes may lack reliability and would be controversial as a sole source of evidence on student outcomes. However, they can produce useful insights and especially when applied to defined target 'end-user' groups (Sowers and Smith, 2003).

3.7 Other programme impacts

The HEA requested this review to assess any distinctive evidence for other impacts and effects and in particular for:

- programmes centred on younger teachers or those newly entering or pre-entry to the profession (e.g. graduate student programmes);
- contrasting effects of programmes based on national frameworks and others with ad hoc or no links to frameworks/external standards;
- the influence of conceptualisation of teacher development and in particular of forms of instructional development on programme impact;
- effects of teaching development programmes on the status of teaching, and teachers' involvement in the scholarship of teaching and learning.

Evidence in these areas lacks differentiation, and is often very limited, it is consequently touched upon only briefly here.

Programmes for younger teachers or new entrants: Many of the programmes and initiatives that have attracted research interest have had a focus on younger HE teachers. Some have suggested that these remain the dominant focus in North American institutional initiatives (Kreber and Brook, 2001) or more widely including in Europe (Gibbs, 2012; Prebble *et al.*, 2004). In the UK, the professional standards framework means that for new academic staff the qualification pathway is increasingly becoming a feature of institutional strategies, although with less impact for established staff. To this can be added provision for aspiring academics including through graduate teaching support or assistant development programmes.

Butcher and Stoncel (2012) have provided recent evidence through an institutional case study approach to explore the nature and extent of the impact of the UK's PGCHE teachers appointed for their professional expertise. Data were collected in four iterative stages to investigate perceptions of graduates from the course (2006-2009), as well as current participants, midway through their programme. The research involved mixed methods and showed that 'new' teachers were willing to adopt novel approaches to teaching, planning and assessment, with a shift from teacher-centred to learner-centred approaches. To this was added evidence of changes in perceptions of self-efficacy and professional identity. Impacts were discernible at several levels – at individual and departmental levels, on the student experience, and on participants' careers. Beyond this, however, few studies in the UK or elsewhere seem to distinguish between programmes (or qualifications) that are wholly centred on new or young entrants, or make provision in the analysis for distinguishing effects on older or newer entrants (e.g. where career length is a determinant variable).

One European study has looked at student outcomes specifically for teacher development for newly appointed university teachers (Stes *et al.*, 2010b). In this, there was limited positive evidence of the effects of teachers' instructional development on student learning. Their study collected and analysed quantitative data from more than

1,000 students at pre- and post-tests, using a quasi-experimental design. A multi-level analysis was conducted in which five models were estimated, one of which produced negative impact.

The authors of this study concluded that instructional development for new or aspiring teachers in HE does not easily translate into measurable improved 'early career' practice. They point in particular to the difficulties of finding measurable effects on students' perceptions of change and in the teaching and learning environment.

In addition, the evaluation of the Mid-Career Teaching Programme developed in 1998 by the CTLS at the University of Minnesota (Romano *et al.*, 2004) focused on mature teachers in HE (i.e. mid-career). However, this lacked a control or comparison group, for example among younger academics.

Contrasting effects of programmes based on national frameworks and/or external standards: There is some evidence that training to national or other professional standards does produce added value (Gibbs and Coffey, 2004; Nasr *et al.*, 1996; Haigh, 2012). However, the evidence is predominantly situational, and lacks any controlling for additionality of effects. Beyond this, we have been able to find no evidence of research that has commented specifically on the distinctive effects of programmes based on either external (professional) standards or national frameworks.

However, not all researchers have agreed with the value of standards-based approaches. Orr (2008), for example, looking at professional development of UK further education lecturers (including those working on foundation degrees), has concluded that externally imposed frameworks reflected "restrictive and impoverished notions of professionalism". His work led him to believe that more meaningful and autonomous professionalism, institutionally or sub-institutionally focused, may evolve if teachers are permitted to select their own CPD agendas, rather than having such choice limited by prescribed standards and content. However, the transferability of his conclusions to mainstream HE contexts is unclear.

The influence of different forms of instructional development on programme impact: The evidence base here is limited. As has been demonstrated much of the research base is not comparative and emphasises reviews of specific programmes – often centred on a single intervention such as participation in an instruction development course, workshops or seminars, active observation or reflective portfolio methods. Evidence to contrast the effects of different programme modalities is consequently limited to the handful of studies looking across various individual studies.

In looking at modalities, Steinert and colleagues (2006) suggested that collective delivery, typically through a structured course, had proven effective in changing teaching attitudes. However, the assessment was centred on medical education and where the context of delivery was perhaps atypical of other areas of 'academic' staff development in HE.

The recent study across 36 teaching development initiatives by Stes and colleagues was drawn across a variety of disciplines and contexts and was able to contrast impacts for teachers' learning and behaviour, institutional impact and impact on student learning by modality (Stes *et al.*, 2012). The results, however, were not clear on relative impacts. Indeed, the authors concluded that 'collective' (i.e. course-like) teaching development initiatives, while having positive impacts on teachers' learning and (where there was evidence) on student learning, had less common impacts on translating the knowledge and skills learned to teaching behaviours and practice. The same analysis also showed that teaching development initiatives that did not rely on collective course-based delivery, or were hybrid in their approaches (e.g. combining collective delivery with participant mentoring) had stronger effects on teacher behaviour. However, as Stes and colleagues pointed out, these findings seem to be contradictory, since evidence of impact on students could only come about by effective transfer of knowledge to teacher practice. The authors concluded that the evidence base was too small to generalise at this level.

Effects of programmes on the teaching status and involvement in the scholarship of teaching and learning: These two issues are interrelated and included together here. However, for both there is limited apparent evidence from available research. Steinert and colleagues, in a cross-discipline review of teaching staff development in medical education, established that evaluation of teaching development programmes in this area had a positive impact on teachers' attitudes towards the utility of such development (Steinert *et al.*, 2006). However, beyond this, there is very little distinctive evidence of the effects of teacher development programmes on sociocultural factors such as the status of teaching in HE.

On the issue of the impact of programmes on engagement with scholarship, Brew and Ginns (2008), using the Scholarship Index (SI), have documented a positive relationship between engagement in the scholarship of teaching and students' course experience at the department/faculty level. This was a multi-indicator assessment of 'scholarship engagement', which included graduate teaching certificate programmes, but went beyond to include SI measures such as teaching awards, publications and presentations on university teaching methods. As such it lacked a more specific association to teacher development initiatives. However, they concluded that where a department/faculty was highly engaged in the scholarship of teaching, students in that faculty/department were significantly more likely to have described experiencing higher quality courses.

Beyond this we have found little evidence seeking to relate teacher engagement in such programmes with their involvement in the scholarship of teaching and learning. This is not to say that no such relationships exist, indeed the blooming research base of the last decade in particular might informally suggest a positive association, but there seems to be no systematic evidence as yet to confirm such a link.



Section 4: Impact research methods and models

4.1 Introduction

An important focus of the review has been to look beyond the evidence of findings to better understand the effectiveness of previous research conducted, including the use of different approaches and tools. This is drawn together here to look at:

- the strengths and merits of the available evidence of impact assessment;
- opportunities for improvement of impact evidence of teaching development programmes;
- practical challenges evident from impact assessment and evaluation.

Set against the context of individual studies, this part of the review provides a critical assessment of the methods used and also draws on scholarly commentary on the robustness and utility of these approaches. However, as some of these commentators have themselves noted (Stes *et al.*, 2010a; Trigwell, 2012), the published sources are highly variable in their depth and detail in their descriptions of methodology and this limits this assessment. A useful starting point, however, is to look at overarching frameworks that have been proposed and used for guiding research strategies.

4.2 Impact assessment models and frameworks

This review has drawn together a diverse range of studies, albeit drawn from very different programme and cultural contexts and contrasting methodological foundations. Although some studies have used common tools (Trigwell *et al.*, 1999; Ho *et al.*, 2001; Gibbs and Coffey, 2004) or variants of these, a particular challenge is the difficulty of establishing comparability of study results. Several of the researchers, notably Stes *et al.* (2010a), reviewing past evidence or reflecting on their own analyses have come to the conclusion that common indicators or a framework for choosing and applying these, is needed to enable studies to build upon each other.

Any such framework would need to be sensitive to programme contexts, and the need for researchers to take into account the individual differences of teachers participating in staff development initiatives is highlighted by Levinson-Rose and Menges (1981). Weimer and Lenze (1998) similarly draw attention to the importance in comparative studies of taking into account fields related to HE. The developing scholarly interest in the field has been accompanied by proposals for different evaluation frameworks and models (Van Note Chism and Szabó, 1997; Guskey, 2000) and from others drawn more widely than HE (Kirkpatrick, 1998).

Guskey's model (2000) has particular relevance to this review since it suggested impact from teacher development programmes would be at five different levels:

- academic reactions;
- participants' conceptual change (teaching knowledge, beliefs and perceptions);
- participants' behavioural change (changing practice and use of skills/techniques and different learning strategies);

- development and change in organisational support for teacher development;
- changes to student learning and performance.

Although not centred on faculty development alone, these five levels seem to provide for a valuable and practical analytical framework. Trigwell (2012) has since explored the application of these levels to teacher development contexts and has established that from available (published) studies the evidence base is strongest for the second level (conceptual change). He has also suggested that these studies provide some evidence for the third (practice change), but are weaker for changes to student learning (and often dependent on proxy measures) and weaker still for organisational change.

A slightly later attempt to model an approach to impact evaluation was proposed by Kreber and Brook (2001) and this was centred on faculty development, drawing on a broad review of North American studies evaluating HE-based teaching development programmes. The approach was not aligned with the Guskey model, but shared similar features. It set out a six-level framework with three based on participants outcomes (perceptions/satisfaction; teaching beliefs; teaching performance), two on student outcomes (perceptions of staffs' teaching performance; learning outcomes) and one on organisation culture. Each level was said to be capable of being evaluated separately or together. The Kreber and Brook model also set out different implications for evaluation design for five of the most common faculty development activities:

- structured (usually central) course(s) on learning to teach in HE;
- individual consultations with teaching staff including mentoring and one-to-one coaching;
- seminars and workshops;
- collaborative action research studies on teaching;
- peer consultation programmes.

The Kreber and Brook model suggests a framework whereby impact can be evaluated for any of six hypothesised levels within each of the five constituent activities (as above). It also sets out separate design issues within each. Unlike the Guskey model, there is no evidence of literature that benchmarks subsequent evaluative practice against this model or otherwise tests the utility of the approach.

A more recent interdisciplinary research review has taken a different approach to building a conceptual framework (De Rijdt *et al.*, 2012). This has looked widely across evaluative frameworks, drawing upon management, HRD and organisational psychological research as fields of research seen to be most closely related to education and staff development. Through this, the authors propose a conceptual framework based on defining *influencing variables and moderating variables* that have the potential to affect the transfer of learning in staff development activities. They base this approach on the assessment that transfer of professional learning to the workplace is complex and not easy to achieve and cite management studies as establishing that only 10% of learning actually transfers to job performance (Fitzpatrick, 2001; Holton and Baldwin, 2000; Kupritz, 2002).

The De Rijdt *et al.* model also draws attention to the fact that the research design of the studies measuring transfer of staff development learning can have an impact on the outcomes reported. They suggest strongly that the research design of studies into transfer of learning should change from a short-term measure to a gestation period of 12 months.

With what seems a handful of exceptions, these models – earlier and more recent – seem to have had remarkably little effect on research or evaluation practice. They remain, for the assessment of impact in teacher development, essentially theoretical models that may have utility in building subsequent approaches, but are essentially untried as methodological frameworks.

The conditions affecting the development of research or evaluation approaches, and the precise methodologies adopted by researchers, are rarely clear from the published research. However, the diversity involved seems to suggest that methodology is determined by the essentially localised dimension of much of the evaluative focus, with approaches adopted being highly customised and essentially pragmatic.

4.3 Evidence strengths and limitations

This broad review has looked across numerous studies, conducted in different contexts, and in 11 different countries, and provides a useful starting point to assess common strengths and merits of research approaches – and also limitations.

Strengths: Looking across the evidence base suggests three broad strengths. The first of these is the sheer diversity of the available evidence. While this often lacks accessibility and provides challenges in its comparability, the number of studies means that numerous research methods have been developed and tried and this in turn provides a wide (if not always) deep methodological foundation from which future researchers can learn.

A second and related merit of the evidence base is that it is international. Although lacking more than a handful of cross-national studies, this means that the research methods developed have been tried on many different institutional contexts, and this in turn provides for some future-proofing in changing national contexts.

The third strength, and a consistent merit of the research base, is that it is highly applied and practical. This applied focus is aided by the fact that individual studies are commonly looking to measure, and describe, practical effects of participation and realised benefits for participants.

Limitations: While these are important strengths, on which other scholarly inquiry can build, for the purposes of this review the evidence base also has many limitations. One issue is that the breadth of the available research is counterbalanced by the small scale of much of the research, especially from the US and Canada, which centre on impacts of specific (individual) programmes and usually is limited to assessments at a specific point of time, which soon become out-dated as programme (and HE) contexts change. The breadth (and quality) of this evidence base is consequently patchy, as well as being highly fragmented. Almost by definition this means the evidence lacks comparability.

This consequence for this review is that the source evidence limits what can be said about the characteristics of programme impact. Where it exists, the available impact evidence is often highly generalised, may have shallow roots, and uncommonly develops or harnesses robust quantitative measures (or tools to mobilise these). In particular, the available evidence shows:

- The evidence available seems much stronger on seeking to isolate high-level effects on teacher participants. In this the evidence is strongest regarding changes to teacher attitudes to and conceptions of teaching. Here, the Stes review (2010a) provides a valuable appraisal across 27 (or their 37 reviewed) studies of methods and utility we conclude has much wider relevance.
- Much of the available research focuses on documenting effects and not changes resulting from programme participation. While useful, the common lack of baseline measures (e.g. pre-tests) means this provides for a very limited understanding of the 'net' effects of programme delivery and very little evidence of the added value of participation. Since 1981 leading commentators (Levinson-Rose and Menges, 1981) have been calling for more robust and systematic research methods that could better understand 'net effects', but with apparently little effect on the research strategies used in subsequent studies.

- The available evidence is dominated by what amount to snapshot measures – often taken at or very shortly after completion of programme participation. Stes and colleagues (2010a) looking across a series of studies have drawn attention to the limitations in methodologies used by researchers to assessing – and controlling for – programme effects. This is an important limitation, not the least because the few studies that have taken a look at effects six months or a year afterwards (such as Postareff, 2007), indicate 'slow-burn' effects and even the possibility of regressed quality of practice as participants gain confidence and/or pedagogic breadth. Consequently, 'snapshot' studies risk providing a misleading picture of either sustained changes to attitudes or actual transfer to practice. Policy or other decision-makers relying on such evidence at institutional level and above may be making judgements on future investments or delivery approaches based on unsound or premature evidence.
- This review concludes that while changes to teacher knowledge and skills have been a common impact focus in research, the evidence provided is often based on very specific or highly generalised measures. This was seen as a weakness in earlier studies (Levinson-Rose and Menges, 1981) and seems to have changed little since. A combination of the limited evidence base of knowledge and skills impacts and the great diversity in what is measured, means that this evidence lacks comparability and provides a weak foundation for sharing knowledge on the skills development effectiveness of programmes.
- Parallel evidence of the impacts to teacher practice coming from the transfer of changed attitudes, conceptions, knowledge and skills, is also lacking in substance and breadth. Stes and colleagues (2010a and 2010b) have commented on the limitations of self-assessment evidence taken at, or soon after, participating in programmes, and also the paucity of deferred post-test evidence. What evidence is available also provides for mixed messages about the effectiveness of knowledge transfer to practice – making the need for more robust assessment all the more important. Trigwell proposes that a new and more systematic evaluation approach, based on contextualised evidence, is needed to shape such a focus (Trigwell, 2012).

These are important limitations, which would need to be taken into account in any future national stimulus to further research and evaluation.

4.4 Specific evidence improvement opportunities

In addition to some of the methodological gaps set out above, the studies also suggest some possible programme effects that are based on evidence that is either shallow or contradictory, where more research is needed to identify effects and mechanisms. The available evidence suggests this might usefully focus on three main areas:

Programme delivery/modality:

- Longer length of programmes and/or duration of activities positively affect the quality of learning and transfer potential, but the extent of this for different programme modalities is uncertain.
- Staff development interventions extended over time show more positive results of transfer of learning than one-time interventions.
- The modality and nature of the staff development intervention conditions the quality of impact, with on-the-job learning having a more positive impact on transfer of learning than 'off-shore' programmes. However, there is limited evidence of why this is the case and what the influencing mechanisms are.
- There is little robust evidence to understand what are the wider motivators and influences to knowledge transfer from programme participation to changed teaching behaviour and practice.

Programme recruitment and participation:

- Experienced teachers show more and earlier transfer of learning from programmes aimed at teaching development (i.e. to practice) than their novice colleagues.
- Novice teachers may require a critical mass of teaching development input or of 'foundation' pedagogic knowledge and understanding before transfer potential becomes positive, but the content of this, set against different participating starting points and delivery contexts, is unclear.
- Novice teachers also seem to show more response to collaborative arrangements in programmes and this positively affects transfer of learning where it involves collaboration with more experienced colleagues.
- Novice teachers will also gain most from programmes where they are supported by others, including working within communities of practice, but there is little evidence of what works most effectively in wider knowledge sharing and support.

Student outcomes:

- There is a substantial lack of direct evidence on outcomes for students, and in particular on what features of teacher development activity positively affect the potential for change in student learning and outcomes, and the determinants of this influence.
- This seems to be a deep-seated inadequacy (i.e. since Levinson-Rose and Menges, 1981) in measuring the impact on student learning and outcomes within programme evaluation. Subsequent analysis (Trigwell *et al.*, 1999; Kreber and Brook, 2001), most recently by Trigwell (2012), has suggested this reflects a lack of common tools such as a student engagement questionnaire and/or common indicators and action research is needed to inform the development of tools capable of customisation and wide application.

A final issue centres specifically on the non-UK evidence. The focus of this review has been on the impact evidence, and where this has not been available from published research we have been unable to take account of cross-national experience. At the same time the research has shown the evidence base continues to develop, and some countries have established either important programmes and/or arrangements for networking experience that might reveal important insights through a review of their experience, which is deeper than identifying published research. This might provide important lessons methodologically for how others have, or are, developing arrangements for assessing effectiveness and effects of these investments.

4.5 Practical challenges in impact evaluation

This analysis would not be complete without acknowledging some of the challenges presented by impact evaluation of programmes and activities such as these. While there has been no systematic assessment of these across such studies, supporting evidence can be drawn from wider experience and from commentary within the published studies. This suggests that evaluators and researchers seeking to better understand programme impact may face a number of specific challenges:

- **Low priority:** Unless there are operating or (external) funding issues that require impact evaluation, individual or collaborating HE providers may not have a natural inclination to proactively establish it. In particular, individual HEIs may be under no direct obligation to formally evaluate the effectiveness of teaching development programmes. Even where HEI funding is drawn wholly, or partly, from 'programmes' (such as CETLs) directly resourced by HE-related non-executive agencies (in the UK), the focus of such agencies on not constraining institutional initiative and

freedoms seems to have resulted in participant HEIs not being obligated to conduct evaluation as a condition of securing funding.

- **Lack of appropriate research funding:** Publicly funded HE-led research in the social sciences is under considerable competitive pressure in the UK, as in other developed economies. However, these pressures may adversely affect emerging areas of inquiry such as HE teaching development studies. Much of the research drawn on in the previous chapter has stemmed from the initiative of individual institutions and individuals within this. While funding sources are often not clear from publications, except where stemming from charitable, external grant aid or publicly funded agencies, the impression is that many studies stem from low-budget or institutionally funded scholarly inquiry. We note that evaluation of large-scale and impact-centred research funding exercises in the UK, such as the ESRC/HEFCE Teaching and Learning Research Programme (Parsons *et al.*, 2011) showed that none of its 57 major research awards were directed at teaching development activities in HE.
- **Capacity and research experience in the field:** This quality of relevant experience, and continuity, in the research base may be being adversely affected by staff turnover among researchers. This would seem to be reflected in a lack of incentive or durability for individuals in pursuing further research in this area. Consequently, and although this is not a systematic assessment, of the cited publications in this review less than one in ten authors are cited more than once, yet a third of the citations (36) stem from just seven authors internationally⁷. There may be many explanations for this apparent clustering of experience, but it may suggest that for many contributors the engagement in impact research relating to these programmes is not an enduring aspect of their research interests – and perhaps their acquired skills and knowledge.
- **Skills in programme evaluation and impact assessment:** While the researchers producing the cited publications drawn attention to in this review have no doubt had substantial and in many cases long established research skills and credentials, many may have had less experience in programme evaluation and impact assessment. Other research (Parsons *et al.*, 2011) has shown that HE researchers in particular may lack skills in setting and measuring impact indicators, and this may be a constraint to applied researchers in this field. Others may feel their research skills are not well placed to tackle the particular challenges of impact attribution in evaluating teacher development programmes.
- **Constraints to longitudinal analysis:** Researchers need a commitment to extended research and evaluation timetables to be able to support longitudinal analysis. One possible constraint to this will be a focus on summative evaluation of programmes – which does not provide for post-participation review, and/or the limitations imposed by what may be essentially short-term funding for evaluations or applied research. It seems likely that funding periods of at least 24-36 months would be necessary to support longitudinal analysis, and this is unlikely to be supported by many funding pathways.
- **Generic assessment tools capable of customising to different programme and HE contexts:** Many researchers have drawn attention to the lack of research frameworks to guide the assessment of programme impacts (Butcher and Stoncel, 2012; Kreber and Brook, 2001; Postareff *et al.*, 2007; Roxã *et al.*, 2011) and others have drawn attention to the need for specific research tools – in particular to guide the assessment of student impacts (Stes, 2010a; Trigwell, 2012). Where particular tools have been put forward the research (and tools) may now be very dated (Marsh, 1982). This lack of appropriate frameworks may reinforce the constraints on skills and experience touched on above, and will be compounded by the lack of generic or customisable tools, with researchers facing 'reinventing the wheel' for each programme assessment or wider research.

- **Academic priorities:** In the UK at least, time pressures on, and priorities for, academic staff, including those engaged in the development and delivery of teaching development programmes, may have emphasised engagement in other areas of scholarly activity. Until recently the limited range of specialist journals linked to academic development, or limited prioritisation of the subject in wider HE journals, may also have constrained publication opportunities – indirectly diverting research attention to areas more likely to secure publication – and individual and departmental value in the Research Assessment Exercise (RAE) and now the Research Excellence Framework (REF).
- **Programme differentiation:** In some cases, evaluative evidence does not distinguish between the effects of teacher development and wider QA improvement initiatives. This review has shown that where teacher development activities are embedded in wider quality or improvement programmes for the sector, or parts of it, impact evidence of such initiatives can be lost in wider evaluations.

In sum, it seems likely that (lack of) availability of research funding or appropriate resources for systematic evaluation, will have acted to hold back the conduct of publishable quality research, or the scale of that conducted. At national level this is surprising given the importance that policy makers have attached to evidence-based policy and assessing the cost-effectiveness and value of publicly funded investments. At institutional level, it may question the extent to which decision-makers appreciate the value of systematic formative and summative evaluation to improving teaching development (and other) practice.



Section 5: Next steps

5.1 Introduction

This final section of the review draws together the evidence set out in Sections 2 to 4 of this report. To meet the HEA's information needs these are set out as follows:

- an overview of evidence of impacts from teacher development programmes;
- the limitations of understanding in relation to evidence needs and gaps.

An assessment is also set out of proposed next steps to support a series of recommendations provided to the HEA. This may aid the HEA in using and taking forward this review.

5.2 Evidence of impacts

The available evidence on the impact of teaching development programmes, in their various guises, is positive. This is most notably for changes to teacher attitudes and conceptions, although with a more confused picture regarding the transfer of this knowledge to practice. Not all past researchers have come to the same conclusion, and some are hesitant on the evidence base to do so. However, this assessment does seem to reinforce a majority view among those engaged in (published) scholarly inquiry (Trigwell, 2012).

These positive impacts may go wider than residual effects for individual participants. Some researchers have gone further to suggest that this in turn is creating greater confidence in the sector regarding the utility of such interventions. Steinert *et al.* (2006), for example, suggested this is reflected in more positive attitudes to faculty staff development itself.

Particular issues that emerge from the research, although not always consistently, are:

- There is a positive association between participation in teacher development programmes and individuals' propensity to develop (or enhance) learner-centred teaching methods. This is important since a range of wider scholarly and pedagogic-centred research studies have shown such methods are in turn associated with stronger student outcomes in HE.
- Impacts on teacher knowledge and skills are less clear but seem to be positively affected by a combination of longer duration programmes, integrated support (especially for newer teachers) and continued formal inputs from continuing professional development.
- Impacts may be more readily achieved for established teachers but the available evidence suggests there is substantial potential for transfer to practice among 'novice' or aspiring teachers where a critical mass of pedagogic knowledge is achieved.

These are important positive effects, but the value of the evidence we have found is held back by some serious evidence gaps, returned to below, and by a lack of comparability. This reflects, in part, the fragmentation of approaches with different

research looking at programmes that may have radically different aims and different programme contexts. Even within programmes, these will be delivered through different modalities, making direct contrasts of effects very difficult. The research itself will also be shaped to meet specific needs and contexts and, as such, will be using different indicators or measures of performance, different evidence collection methods or combinations, and with often very different focuses and scale of evidence collected.

Put together, while this provides for a rich and diverse evidence base, it makes drawing common lessons problematic. Where some lessons do emerge, they reflect the focus of much of the research on scholarly inquiry and are not necessarily geared to the interests of policy makers, in particular those concerned with evidence-based policy. Key policy research issues such as understanding determinants of programme effectiveness and impact successes, as well as the additionality of realised benefits, are almost absent from the published research. This is not to criticise the researchers, but it does question why a policy intervention that has secured large-scale public investments, especially in the last ten to 15 years, has seen so little attention paid to the evaluation of the impacts and on factors that will enhance future decision-making about programme funding and focus.

5.3 Evidence needs and gaps

This review started with the premise that research on programmes with an impact focus was going to be difficult to isolate and limited in scope. In fact, the authors have been impressed with the range of what does exist – albeit with some challenges in its diversity and fragmentation.

The previous section of the report has also documented some of the apparent weaknesses – and challenges – emerging from the evidence base. While there has been a notable widening of the range of studies available in the last ten to 15 years, the substance and utility of much of this seems poorly placed for informing policy development relating to teacher development – in the UK and elsewhere.

Looking across different countries' experiences – and evidence – this does not seem to be a novel assessment. Several cross-cutting assessments, looking across the research base, point to the scarcity of well-designed studies, variously calling for the need for more and better designed research, and evaluation tools, on the impact of staff development (Weimer and Lenze, 1998; Kreber and Brook, 2001; Steinert *et al.*, 2006; Stes *et al.*, 2010a; Trigwell, 2012). Where proposals are made for stronger methodological foundations these tend to emphasise the importance of more qualitative evidence to support the common reliance on self-assessment by teachers (Steinert *et al.*, 2006) or mixed method studies (Levinson-Rose and Menges, 1981; Weimer and Lenze, 1998; Stes *et al.*, 2010a) in order to gain insight into the process of knowledge transfer to practice and generating teacher and student outcomes.

Beyond researchers' own reflections this review has been able to draw limited evidence on effectiveness of methods from published studies, in part because authors often provide partial or limited details on methodology used to assess impact. This is particularly the case where there are incomplete or insufficient details on scale and scope of evidence collection. However, this review suggests that issues emerging for improved methods for characterising and better understanding of impact include:

- **Pedagogical clarity:** Teaching development activities are diverse – with different emphases, modalities and content. Researchers often provide limited evidence of important issues of context in what is being evaluated for impact, and notably on issues such as the pedagogical approaches to the underpinning focus of the studies being carried out. The reasons for this are unclear, but this represents a serious limitation to sharing knowledge from such studies, and critically appraising the impact messages.

- **Use of proxy measurement:** Where researchers have sought to review impact, usually as part of wider evaluative focus, these studies often rely on what amounts to indirect or proxy measures (e.g. academics' self-assessment of enhanced student learning), which have been criticised in some of the literature for their usefulness (Levinson-Rose and Menges, 1981). Self-assessment can lack reliability, especially when drawn from customised determining variables. There would seem to be much greater potential for either harnessing existing tools and frameworks (e.g. ATI, MEQ for benchmarking teacher attitudes and practices, and SPQ, ASI, SEEQ or others for assessing student outcomes) and also for mapping post-programme changes. These also offer opportunities for customising content or focus and for use with control groups, while retaining the value of building comparative evidence for use by other researchers.
- **Breadth of impact measurement:** Other researchers have approaches that may centre on single-sourced direct measures including, for example, very broadly based methods such as likert scales of student satisfaction with teaching. Focusing evidence gathering may have the value of intensifying the effort, securing earlier results and reducing costs, but works against a deeper, or contextualised, analysis and understanding of impact and has limited value for empirical review of impact.
- **Understanding impacts on students:** To date much of the available impact evidence focuses on the effects on teachers' attitudes and aspects of practice. As noted, there is rather less attention paid to the impacts observed from student experiences, either through direct feedback or observation, although there is some discussion of the value of non-causal evidence from student feedback. Some observers have chronicled difficulties in securing wider student feedback, yet this seems at odds with the demonstrably effective approaches from researchers such as Professor Trigwell and colleagues, and Gibbs and Coffey among others. However, Trigwell has recently cautioned that no appropriate tools fully reflect the need for a generic approach to measurement and noted:

A better proxy for change in student learning at Guskey's (2000) level five would therefore be a teaching engagement questionnaire that includes those additional aspects of teaching that development programmes are aiming to achieve, such as communication and scholarship, as well as an understanding of subject matter. At the present time no such questionnaire appears to exist. (2012, pp. 259-260)

Public policy also seems set to place an emphasis on the outcomes for end-users – the students themselves – and this can no longer be neglected in favour of the more readily secured evidence on teacher perceptions.

- **Use of longitudinal studies:** If student outcomes evidence is less easy to generate and to come by, longitudinal studies seem even more limited. Getzel *et al.* (2003) and Sowers and Smith (2003) have been among the few who recognise this as an evidence gap and called for institutional responses to look at progression and/or sustainability of impact. Longitudinal analysis seems the area of research investment most likely to be negatively affected by funding and/or time constraints on researchers. Such evidence is almost wholly small-scale. However, with the evidence that is available suggesting that impacts on teaching quality may need a critical mass of pedagogic appreciation, may be progressive or even 'slow burn', it would seem that impact needs to be viewed not from the perspective of changes shortly after participation, but in the medium-term – a year or more after participants had concluded. This is not a vague call to arms, and specific methods are offered from some existing research. Delayed tests have been used successfully by some (Ho *et al.*, 2001), albeit largely at a quasi-experimental scale. Inventory methods have also been proposed by recent researchers in the field (Trigwell and Prosser, 2004) and would seem to have scope for much wider use among researchers if their application is sufficiently well understood.

- **Use of tracking studies:** A separate but related evidence gap seems to be the lack of tracking or larger-scale studies. These may provide for continuing analysis of change on a cross-institutional basis, but also provide benchmarks for institution level evaluation – as proposed by Gibbs (2010), Hardy (2008), and Ho *et al.* (2011). This might also provide an empirical basis for assessing the relationship between espoused beliefs and teaching practice (Kane *et al.*, 2002) where the evidence seems too limited to have enabled sufficiently thorough investigation to draw any definitive conclusions. Such a focus, however constituted, might also provide a suitable platform for addressing some of the uncertain issues or contradictory findings emerging from the patchwork of evidence available, as outlined above.
- **Use of control groups:** Current methods focus on programme participants as direct beneficiaries, and the use of proven impact assessment methods based on evidence triangulation seems more limited, in particular the use of control groups. Such evidence is vital in establishing the measure of change and outcomes from programme investments and also the extent of knowledge/learning transfer to practice. Control group methods are also a reliable basis for establishing the additionality of the effect (i.e. from the counter-factual position of what effects would otherwise have occurred without the investment). It seems likely that in the UK and elsewhere, those funding such investment, at institution level and above, will be placing greater emphasis not on benefit realisation from programmes but on evidence of its additionality, and few studies are well placed yet to address this need.

A final observation on the strengths and weaknesses of the evidence base goes beyond analysing programme effects, to looking at causes and causality. This review has suggested that the available evidence is notably weak on determinants of programme impact and effectiveness. In general, studies seem stronger on measuring realised benefits – for teaching staff and to a lesser extent for students – but with too little focus on the how and why such benefits come about, or to explain why such programmes are having an effect.

A crucial area for ‘determinants’ evidence seems to be more information on what underpins knowledge/learning transfer from programmes. In this, De Rijdt and colleagues (2012) have compared findings on ‘influencing variables’ with conclusions from selected reviews of ‘training transfer’ in the field of management, HRD and organisational psychology (Baldwin and Ford, 1988; Blume *et al.*, 2010; Burke and Hutchins, 2007). They propose a focus for future research on influencing variables and in particular:

- motivation to learn;
- motivation to transfer;
- needs analysis;
- active learning;
- self-management strategies;
- strategic link;
- transfer climate;
- supervisory support.

They further suggest a number of moderating variables that could be of importance within the context of staff development in HE that need further research. These are:

- time lag versus no time lag;
- self-measure versus other measure of transfer;
- use measure versus effectiveness measure of transfer;
- open skill versus closed skill.

This seems a useful starting point to understanding determinants and would provide for greater comparability, but the focus could go wider to look at other contextual factors. Whatever focus is taken, this remains a critical evidence gap, since, as Trigwell

(2012) has recently argued, only by asking 'why' will those designing and delivering programmes be able to improve their effectiveness and further raise impacts from what is being provided.

To tackle this Trigwell proposes a fundamental shift in the focus of researchers to emphasise understanding:

... relations between the context, mechanism and outcomes. For teaching development programmes this means finding out what actions lead to what outcomes for what people. (2012, p. 263)

Others have suggested different models for new evaluation methods that can capture appropriate impact evidence (Van Note Chism and Szabó, 1997; Guskey, 2000; Kreber and Brook, 2001). Trigwell (2012) builds on this to suggest that a stronger emphasis on 'determinants' of impact could be addressed by adopting an emphasis on methods of Realistic Evaluation (Pawson and Tilley, 1997).

This review is not well placed to challenge or endorse such proposals, although the authors would encourage choice and customisation of structured methods that are consistent with cost-effective delivery including for larger-scale and longitudinal samples. However, to Trigwell's call for a stronger focus on determinants of impact, we would add the need for initiatives in the design and use of tools, and evaluation frameworks, which could encourage more comparability of findings from individual studies, while also systematically addressing some of these evidence gaps. These would be important steps towards providing an evidence base for improving programme practice – which is currently built on shallow and fragmented foundations.

5.4 Tackling the challenges

The HEA commissioned this review with the intention of harnessing available evidence on programme impacts to inform its future decision-making. The review shows a growing and diverse evidence base, with some positive indications of impacts from programmes, but with (as yet) a fragmented evidence base to draw on to inform future policy and improvements. Much of this evidence is also drawn from outside the UK. While this is valuable to informing UK-based practice, it raises larger questions around the research funding, orientation and/or institutional capacity in all UK home countries to undertake systematic impact assessment of teaching development programmes.

These issues, and more specific suggestions for a future research focus, have been drawn together here in a series of interrelated recommendations for the attention of all agencies with an interest in how more effective teaching development has been (and can be) contributing to wider public policy, and institutional, goals for HE. We regard all of these proposals as evidence-based and important. We also indicate those actions we would regard as urgent priorities.

Recommendation 1 – Conduct a sector consultation on this review: This review has been carried out robustly using systemic (literature) review methods and consulting some of the key players as to any emerging evidence gaps. We commend it to the HEA as a state of the art review of current knowledge. However, we are conscious that we have had very little feedback from calls for evidence from the sector and recommend that it is 'stress tested' by the HEA through an open consultation seeking views on the report, and a call for further evidence. This is an urgent priority.

Recommendation 2 – Develop a cross-national review of wider evidence:

Much of the evidence we have drawn on is from outside the UK. In parallel with Recommendation 1, we would suggest:

2a The HEA, or others, should follow up this review with selected cross-national and international bodies and fora to also seek their views on the report, and to identify any synergies with possible future actions by those bodies.

2b The need for a focused study to review developing national evidence in selected countries where there are new or significant teacher development initiatives or arrangements for networking experience in HE to assess any lessons for how others have, or are, developing arrangements for assessing effectiveness and effects of these investments. We propose there is particular value in focusing this study on four to five selected countries in Europe. This study will provide a starting point for reviewing this focus, and the consultation proposed in Recommendation 1 and Recommendation 2a) will also contribute to selection of countries to be reviewed.

Recommendation 3 – Prioritise the development of an impact assessment guide/toolkit for HE: We are conscious that localised research and also evaluations of institutional and partnership initiatives focused in teaching development programmes will continue in the UK. These need to be urgently informed of the lessons from this research, and we propose that there is a need for the production of a generic impact assessment guide or toolkit that can draw on these lessons to:

- unpick some of the suggested methodological requirements and contexts to help programme managers/institutional funders to set evaluation frameworks;
- set out evidence-based pros and cons of approaches to aid local review;
- map context-specific practical resolutions to some of the methodological challenges identified here;
- provide guided links to tools and key papers.

This should be an urgent priority, but any such guide is likely to need to be updated to take account of outcomes from Recommendations 6 and 7.

Recommendation 4 – Establish a national focus for further research to improve impact evidence: The review has documented the strengths of available research but also many weaknesses. These would seem to be a potential focus for a small-scale and highly targeted competitively allocated research-funding exercise conducted unilaterally by the HEA, or others, to inform better practice, or perhaps in collaboration with funding and/or research councils. Such an effort might explore different funding channels (competitive bids for research grants, targeted research studentships, knowledge exchange fora, and/or funded short-term research fellowships) with the joint aim of filling critical information gaps and to help build UK research capacity in this area. Some of the issues for a themed focus for such funding are set out in Section 4.4 above, but other may emerge from the consultation proposed in Recommendation 1 above. To this might be added funding for a study or review of the relative impact effects of disciplinary-focused programmes – building on this review but looking to add primary evidence to fill this evident research gap.

Recommendation 5 – Establish a national focus for further research to improve policy formation: The HEA, or others, should seek to establish two fully funded research investments in the UK to extend the evidence base in critical areas for policy formation and institutional improvement and specifically for establishing:

5a one or more cross-institutional impact-centred longitudinal studies of programme participation and impact in the UK to report over a 24-30 month period on medium-term effects for teacher and students, longer-term potential, impact determinants and utility of shorter-term and longer-term impact measures, and to encourage funding bodies to establish the sustainability of those inquiries through tracking evidence to establish longer-term impacts for teachers and institutions;

5b one or more parallel studies on transfer mechanisms for programme investments, and in particular providing an empirical basis of the call by De Rijdt and colleagues (2012) for analysis of influencing variables and motivators. These may best prioritise tracking back studies to capitalise on existing institutional programmes, and to produce early evidence, and would be expected to report also within 18 months. There is value also in commissioning one or more tracking forward studies, but these could not be expected to produce viable evidence in less than 24-30 months;

5c one or more research investments that develop and harness control or comparison group methods allied to existing teacher development investments in the UK, and to critically appraise the added value and additionality of teaching development programmes. These should be able to report with 18 months.

Each of these investments will take some time to set up and conclude, and we regard commissioning these as **an urgent priority**.

Recommendation 6 – Establish a study to map use of tools and evaluative approaches:

This review has only partially completed its goal of critically appraising research methods and tools, due to the inaccessibility of much of this evidence from published research. We propose the HEA, or others, should establish a study to extend this analysis through primary research-based review with selected researchers drawn from the bibliography in this study, to map and critically appraise the use, and utility, of tools, and implications for further development of common tools and approaches in impact assessment. This should be an **urgent priority**, which might base its approach on the review of 37 studies internationally conducted by Stes and colleagues (Stes *et al.*, 2012).

Recommendation 7 – Establish a national development project to produce ‘generic’ impact assessment tools and instruments: There is a need to provide methodological development funding for one or more studies centred on the production and testing of generic tools, and customisable research instruments to support programme impact assessment. In particular, there is a need for the HEA, or others, to support:

7a a retrospective review of existing teacher-impact tools (ATI, MEQ, and others);

7b a retrospective review of existing student experience testing tools (e.g. SEEQ, ATI, MEQ);

7c a developmental study to produce and test a generic student experience assessment tool capable of customised use in different teaching development contexts in HE (e.g. Trigwell’s proposal, 2012);

7d a developmental study to map and assess lessons in the use and application of alternative impact measures including those drawn from Social Return on Investment (SRoI) and other social impact measures.

Each of these would be expected to report in 12 months. We regard each of these to be an **urgent priority**.

Recommendation 8 – Establish a national repository of research-related impact evidence: The evidence we have drawn on is highly fragmented and often inaccessible. We propose that the HEA, or others, should review the scope within copyright conventions to establish an online repository to widen access to the material drawn attention to in this review, and to others emerging from Recommendations 1 and 2 (and others) above.

Recommendation 9 – Establish a cross-sector ‘benchmarking’ study: The review presented here has necessarily focused on HE experiences of teacher development.

However, the utility of the evidence gathered, and any future evidence produced from the investments suggested here, would be substantially enhanced by wider baseline evidence of the impact of teacher development programmes from outside HE. We propose there is much that can be drawn in the UK from school-based teacher improvement, and specifically from other post-secondary teacher development including within further education. We propose a single benchmarking study is set up by the HEA, or others, to identify and review such evidence, and the implications (against this study) for HE, and to seek this study to report in 12 months. This is an **urgent priority** to be able to better understand the significance of the findings from this review.

While these recommendations are presented here to the HEA, as the architects of this review, we anticipate that action against these may require multi-agency inputs, and the HEA may not be best placed to lead a response on each.

We commend this review, and these recommendations to the HEA, and thank the agency for the foresight in establishing what we hope others will also regard as an important and timely synthesis of the state of current knowledge.



Annex A: Research issues and questions

- a The quality and robustness of existing evidence about the efficacy of teaching development programmes.
- b The costs and benefits of including disciplinary components in teaching development programmes, and on focusing teaching development programmes around a disciplinary context.
- c Good practice in the development of both national and sub-national but inter-institutional teaching development frameworks that are used to structure and design teaching development programmes.
- d Examples where the design of teaching development programmes and frameworks has been based on conceptual schemes and models of teaching and learning.
- e The impact on the efficacy of teaching development programmes of the compulsory or voluntary nature of those programmes.
- f The different ways in which teaching development programmes can be, and have been, evaluated, and the relative merits of those different evaluation methods, looking in particular at methods of evaluating the impact of teaching development programmes on student learning.
- g The impact of teaching development programmes on wider teaching cultures, e.g. the status of teaching, and teachers' involvement in the scholarship of teaching and learning.
- h What obstacles and challenges exist to investigating the efficacy and impact of teaching development programmes.
- i How the goals of teaching development programmes have been conceptualised, and how the balance has been struck between aiming at changes to teachers' attitudes and practices, and changes to students' attitudes and learning experiences.



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