Developing an infrastructure to support an evidence informed approach to Personal Development Planning

Norman Jackson[1], David Gough[2], Elisabeth Dunne[3] and Melissa Shaw[4]

Introduction

The Higher Education Academy (HE Academy) is supporting an evidence informed approach to the development of teaching and learning policy, the continuing improvement of practice and the development of new practices.

> *'I want the Academy to be used as a resource for staff and institutions when they need information about how to enhance student learning and what methods are most appropriate for addressing particular students needs. We will establish a solid, easily-accessible evidence-base that will enable staff who teach and support student learning to choose the course of action that will best achieve their goals.'* Professor Paul Ramsden, Chief Executive Higher Education Academy, HEFCE Annual Conference 22/04/04.

To facilitate this objective, the HE Academy (building on the work initiated by the Leaning and Teaching Support Network – LTSN) is conducting an experiment with the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI Centre) and the Centre for Recording Achievement (CRA) to build a data base of studies that describe and evaluate different approaches to personal development planning (PDP).

PDP is proxy for a number of constructs that attempt to connect and draw benefit from reflection, recording and action-planning. PDP encourages learners to plan their own learning, to act on their plans, to evaluate their learning and to generate evidence of learning. When expressed as a set of actions and processes PDP involves:

Ø   Planning (setting goals or targets and thinking about how they might be achieved).
Ø   Doing things (actions and behaviours that are consistent with plans and learning through the experience of doing with greater awareness).
Ø   Recording (thoughts, ideas, experiences and results through writing, audio, video, visual or other means to demonstrate learning and achievement and to provide an evidence base to support reflective learning).
Ø   Reviewing (the evidence of learning, reflecting on what has happened and making sense of it).
Ø   Evaluating (making judgements about self and own work and determining what needs to be done to develop/improve/move on).
Ø   Using the personal knowledge and sense making derived from PDP to: plan future actions; change thinking, beliefs and behaviours or communicate learning and achievement to others.

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[1] Higher Education Academy
[2] Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre), Social Science Research Unit, Institute of Education, University of London
[3] University of Exeter
[4] Centre for Recording Achievement

This set of activities and behaviours is consistent with the self-regulation model of learning (Zimmerman, 2000; Zimmerman and Schunk, 2004; Jackson, 2004) – an observation that has become increasingly apparent as the data base building and evaluation study has progressed.

The construction of the data bases is seen as a necessary first step to examine the practicalities, issues, costs and potential benefits of developing an infrastructure to support an evidence based approach in higher education teaching. The data bases were intended to: a) map the field of research and evaluation evidence relevant to PDP (survey world literature), b) identify the best scientific evidence of the effects of PDP-type practices on students' learning, c) identify evaluation studies that have been conducted within UK HE institutions, and d) use the technology to enable people to access these data.

Policy context

PDP was chosen for the experiment because it is an important area of teaching and learning policy. In 1997, the National Committee of Inquiry into Higher Education recommended that students should have a Progress File to help make the outcomes of learning more explicit, identify the achievements of learning, and support the idea that learning is a lifetime activity (NICHE, 1997). The Progress File was intended to be the policy solution to the difficult question of how to represent and communicate the complex learning from a higher education by providing each student with a transcript – a record of their learning and achievement and a means by which the student can 'monitor, build and reflect upon their own development'. The term Personal Development Planning (PDP) is used to denote this process.

The Progress File initiative is a unique teaching and learning project for UK HE. The policy[5] was developed by the sector, approved by the Board of Universities UK and the Standing Conference of Principals, and commended to the sector in May 2000 for implementation as a two step process – transcripts in 2004 and PDP policy and practice in 2005. In England, policy is being promoted by an alliance of Universities UK, SCOP, the Quality Assurance Agency, the Higher Education Academy[6] and the practitioner network – the CRA.

The work described in this paper was undertaken to support the implementation of the PDP element of the Progress File. PDP is the first policy to mandate any form of learning in higher education, and the first teaching and learning policy to be implemented across the whole education system (as Progress Files in Schools). An evidence based approach to policy would have included a systematic search for evidence of the impact of PDP-type learning processes. But the resources, time or expertise to undertake a systematic review were not available to the policy making agent (QAA). Instead, policy was developed through a brokered, consultative process (Jackson 2003a). Policy was heavily influenced by the prevailing practitioner discourse and it was clear from the non-systematic literature reviews that were undertaken that while there were many descriptions of PDP-type activity, the evaluation evidence for positive impacts on learning was quite limited. O'Connell (2003, citing work undertaken in the late 1990s) concluded: 'As is common with educational movements that are 'enthusiast led,' the focus of activity has been on development more than research. Thus, much of the work reported has been of the descriptive, implementation study nature. There is relatively little empirical research to demonstrate positive causal relationships between Recording Achievement *(PDP)* schemes, the teaching and learning context and culture and, to some extent, the individual characteristics of learners.'

In order to secure ownership and encourage implementation of PDP in diverse learning contexts, policy was framed in terms of high-level principles and minimum requirements that could be customized and implemented to suit any learning or institutional context. Such flexibility is

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[5] Embedded in Guidance at www.qaa.ac.uk
[6] and its predecessor the Learning and Teaching Support Network

challenging because it requires people and institutions to make their own decisions about what PDP is and conduct their own experiments in order to learn how to implement their own conceptualisations.

From a policy makers position this is a messy and inefficient approach requiring the invention of many new wheels, but it has the advantage of engaging people and institutions in developmental processes that ultimately lead to deeper and richer learning than if standard procedures or processes were imposed. This provides the ideal situation for an evidence based approach in which the choices that are made from many possibilities are informed by evidence of the consequences rather than only imagination (this is not to devalue the importance of imagination as an important motivational outcome-focused force). In the absence of an appropriate evidence base, this approach to policy implementation assumes that the higher education system will develop its own evidence of the impacts of PDP through implementation and that this self-knowledge developed in the many different contexts in which it was deployed would provide the energy and motivation to sustain development.

PDP (Progress File) policy was driven by the political desire to improve the quality of information on learning and achievement in higher education, but it was informed and influenced by the practitioner discourse that believed that the learning behaviours developed by PDP resulted in improved learning potential and outcomes even though the evidence for all these potential benefits was generally lacking. This situation places responsibility on the organizations that are promoting the policy to facilitate the sharing of the practice and learning of those who are at the forefront of experimentation in order to create the evidence to demonstrate actual benefit (Jackson 2003b).

A vision of evidence based practice

The experiment is based on a model of evidence based decision making and practice that involves three steps.

1 It assumes that PDP practitioners – whether they be teachers, staff and educational developer change agents, or policy makers – would like answers to questions about PDP practice. Discussions with practitioners suggested that they would like to be able to answer questions like:
   Ø What is the range of approaches to PDP?
   Ø What types of learning outcomes can be achieved through different forms of PDP?
   Ø What approaches have been used to evaluate PDP practice?
   Ø What factors (eg teaching, support and guidance, contexts) are associated with the most successful implementation schemes?
   Ø What works best for a particular context?

2 Practitioners either search for their own answers using the data base or more likely, refer to guidance and digests produced from the data base.

3 Practitioners critically evaluate the evidence derived from the database or guidance in their own practice contexts and, where appropriate, integrate this knowledge into their own teaching practice or policy.

Development of evidence bases to inform practice

When fully realized, the concept of the *PDP evidence bases* will have been developed and implemented over four to five years. The process is outlined below.

Stage 1: January 2001 – The process began in 2000 with discussions about the EPPI Systematic Review process and how it might be utilized in higher education. In January 2001, the EPPI

Centre was contracted by the LTSN Generic Centre to develop a systematic map and synthesis review of research relating to the process of learning that underlies PDP. A PDP practitioner user group helped formulate the research question on which the review was based and helped to create inclusion criteria to guide the selection of evidence. The methodology and results are fully described by Gough *et al.* (2003)[7]. The process resulted in a map of the research field (defined by the research question and inclusion/exclusion criteria) and the identification of 25 empirical research studies that were considered to give the best scientific evidence for the impacts of PDP-type learning processes.

Stage 2: September 2003–2004: While the results of this exercise provided insights into what was known about the impacts of learning through reflection-recording and action planning, their usefulness to academics was considered to be limited because of the form in which the results were presented and the difficulty of connecting results to practice in a meaningful way. The project team realised that there needed to be a further stage of extraction, synthesis and translation of results, and so two educational researcher/teacher practitioners (Elisabeth and Richard Dunne) were commissioned to produce two user friendly Guides. One Guide (produced by ED) is seeking to identify the characteristics and fundamental principles of successful learning derived from the 25 empirical studies which provide the *best scientific evidence* of what works. The second (produced by RD) is seeking to synthesise the important learning points from the wider map of research (the 158 additional studies identified through the research synthesis).

Stage 3: January 2004 – ongoing: The third stage in the process of evidence building has been the development of a second database of evaluation studies that are more directly connected to personal development planning in UK HE contexts. This part of the process involves: 1) creating through a user group a specification for the database, 2) developing a new and more comprehensive coding form (Appendix 1) to facilitate data extraction, 3) conducting a system-wide search for institutional PDP evaluation studies, 4) building the database and coding the studies and 5) synthesizing the information contained in the studies and creating a Guide to the interpretation and use of the data.

Stage 4: September 2004–2005 The final stage of the process will be to work with a number of institutions, PDP practitioners and researchers to try to use the database and its products in real decision making processes so as to gain a deeper understanding about how it might be used. The outcomes of the research synthesis and production of Guides will also inform the preparation of new Guidance for Personal Development Planning in which the principles of good teaching for effective learning will be embedded. In this way, the products of systematic evidence building and synthesis can influence the policies and guidance that higher education teachers draw upon to inform their practice.

Stage 1 – Results of Systematic Review and Research Synthesis

Underlying the first stage of database building and synthesis is the assumption that if we are to adopt a more evidence informed approach to teaching and learning in higher education, we need to identify and map (characterize) relevant knowledge derived from research and distil from this the things that we need to know (accepting that we may not need what we need to know until we have been through the process).

Systematic mapping

Details of the data gathering process, the map of relevant research and the results can be found at the URL given in footnote 7. The purposes of the review were:

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[7] http://eppi.ioe.ac.uk/EPPIWeb/home.aspx?page=/reel/review_groups/EPPI/LTSN/LTSN_intro.htm.

Ø   To create a map of the empirical research that has been undertaken on PDP processes in higher and related education to inform discussions on what future research might usefully address.[8]

Ø   To synthesize the known evidence for the effects of PDP-type processes on student learning in higher and related education, for the benefit of policy makers and users of policy.

The review questions were:

Ø   *Systematic map*: What empirical research has been undertaken on the use of PDP in higher and related education?

Ø   *Systematic synthesis* (in-depth review): What evidence is there that processes that connect reflection, recording, planning and action improve student learning?

An initial trawl of the English language world literature since 1982 – using key words developed by the user group – resulted in 14,271 potentially relevant studies being identified. The abstracts and titles of these documents were evaluated using the criteria developed by the user group in collaboration with the research team, and 982 documents were identified as being worthy of further analysis. 813 of these documents were accessed, read and evaluated using the criteria developed and of these, 158 documents were subject to more rigorous analysis and key wording to produce a map of the research field. The following conclusions were drawn from this evidential map.

Approaches to PDP in the literature: Most of the research has been undertaken on learning logs and journals and diaries and studies of reflective practice. Most studies adopted a prescriptive approach to PDP implementation in order to achieve course-specific outcomes, but there were also many studies that adopted a negotiated approach to implementation for course-specific outcomes and for broader self-development. A significant proportion of studies used a prescriptive approach to implementation to achieve broader self-development. Studies of learning logs and journals, reflective practice, self-assessment and self-regulation were particularly associated with course-specific outcomes. Studies of Records of Achievement and self-direction were slightly more likely to be associated with broader self-development aims. There is considerable international overlap in the frequency that the different terms for PDP are used, but it is clear that records of achievement and profiling are a particularly UK phenomena, and that self-direction and self-regulation are particularly common in North American studies.

Context of the studies: Most of the studies were undertaken in the USA or the UK; most concerned HE and focused on learners. Studies in HE, compared with other educational settings, focused slightly more on course-specific than on broad developmental outcomes. Studies in HE were more likely to have used learning logs, journals and reflective practice and less likely to have used action planning and Records of Achievement than other educational settings. Studies in secondary schools were more likely to have used PDP styles of self-regulation, learning style and attitudes to learning. Knowledge gains were common outcome measures in studies in all educational settings but particularly in HE.

Study outcome measures: Most of the research outcome variables were on approaches to learning and learning styles. Next most common were knowledge gains, skills and identity; career or employment outcomes were rare. The most common method of measuring outcomes was through participants' views. There was little variation across work or course contexts in the type of outcome measures. The use of learning logs and journals and reflective practice were relatively more common in studies with course-specific outcomes.

Research design: The most common designs were the exploration of relationships between variables followed by evaluations of naturally occurring policies and practices, then evaluations of

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researcher-manipulated interventions. Relatively more of the studies from the USA and Australia were evaluations of researcher manipulated interventions compared with other countries.

Very few of the studies from the USA were descriptive. UK studies were more likely to be descriptive and to emphasize exploration of relationships compared with other countries. Very few of the UK studies were evaluations of researcher-manipulated interventions.

Systematic synthesis (in-depth review)

The objective was to identify the best evidence of impact of PDP-type interventions. The basis for inclusion in the in-depth review was that the study type was an evaluation of a researcher-manipulated intervention and included objective external outcome measures. Twenty-five experimental studies were considered to provide the best evidence to satisfy these criteria and answer the central research question – *What evidence is there that processes that connect reflection, recording, planning and action improve student learning?* These studies provided the focus for the in-depth *systematic review and synthesis*. These were subject to detailed analysis and data extraction. The findings are presented below.

The studies in the in-depth review did not differ in obvious ways from the rest of the mapped key worded studies. This applies equally to the evaluation studies not included in the in-depth review on sub-concepts of PDP; the context of PDP; reasons for learners using PDP; focus on course-specific or broader self-development aims; population focus; sex of learners; age of learners; and educational setting. The studies in the in-depth review were more likely to be concerned with both self-regulation and prescribed approaches to implementation and less likely to be concerned with independent learning, logs and journals, and cooperative learning. They were also slightly less likely to be concerned with self-assessment. Studies in the in-depth review were more likely to have been undertaken in the USA with few evaluations of researcher-manipulated interventions undertaken in the UK. Studies in the in-depth review were relatively over-represented in terms of outcomes of knowledge attainment and less represented in terms of identity and attitudes to learning outcomes compared with all mapped studies and the evaluation studies not included in the in-depth review.

Weight of evidence of studies in the in-depth review: All of the studies in the in-depth review were assessed on: a) the quality of the study in terms of accepted practice within the research design employed; b) the appropriateness of that research design for addressing the systematic review question; c) the relevance of the focus of the study in relation to the systematic review question; d) an overall judgement about the weight of evidence that the results of the study provide towards answering the review question based on judgements A, B and C. Four of the 25 studies were rated as contributing a high, fifteen a medium, and six a low weight of evidence to answering the review question.

Weight of evidence and direction of results: Most studies (N=17) reported positive effects of PDP-type interventions on learning. Some studies did not find any evidence of an effect but only one study reported a negative effect of these processes on learning compared with controls. Most of the evidence showing positive effects was reported from studies rated as medium in terms of weight of evidence. The results do not suggest that weaker evidence is more positive about the effects of the PDP interventions. The conclusion is that PDP can have a positive effect on student learning.

Results of studies on outcomes: The relatively few studies meeting the narrower inclusion criteria and the heterogeneity in their samples, interventions and measures of outcomes makes it difficult to differentiate specific results in terms of effects. However, there are three aspects for which it is possible to provide data.

Student attainment: Fourteen out of the 25 studies measured 'attainment', ten of which were rated as having high or medium weight of evidence for the review. All the ten studies reported positive effects on student learning in terms of 'attainment'.

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S*tudent 'learning styles'*: Fourteen out of the 25 studies measured approaches to learning outcomes and thirteen of these were rated as providing high or medium weight of evidence. Of these thirteen studies, nine reported positive effects on learning styles, one reported mixed effects and three reported no evidence of effect.

S*tudent 'personal' outcomes*: Four out of the 25 studies measured 'personal' outcomes and three were medium-rated for weight of evidence. One of these three reported a positive effect on personal variables. The other two studies reported a negative effect and no evidence of effect respectively.

Overall, the links of PDP-type processes to these three outcomes is strong, but the sample size in each is clearly small.

Stage 2 – Information extraction and production of guidance for HE teachers

Underlying the second stage of the synthesis process was the realization that simply identifying and characterizing the best available empirical evidence to answer the research question is not enough. There has to be a deeper and more educationally meaningful process of digging into the data and extracting from it important learning and then translating and presenting this information in ways that will make sense to HE teachers and will enable them to critically evaluate its relevance for their own practice in the contexts in which they work.

The findings from Stage 1 are important, but it became clear that much more was available than the data analysis to this point had been able to provide, both from the 158 selected studies overall and from the 25 allocated for 'in depth' attention. It was apparent that all the papers were set in a context of educational, psychological or personal theory that was worthy of note and might be used to develop some theoretical perspectives to specifically underpin PDP; that they used constructs and definitions which could add to the understanding of PDP-related processes; and that they described classroom practices from which it would be possible to learn more about effective teaching and the management of personal growth

Managing the process of information extraction

Retrospectively, it is often difficult to remember why any particular project or piece of work was so difficult. When a resolution to a problem is found, the problem no longer exists in the same form. And so it is difficult to remember the precise nature of the original problem. However, the difficulties associated with this project remain vivid. In the first instance, the only way to address the kind of information outlined above was through a detailed reading of each of the 25 'in-depth' papers. At this point, it was not evident what kinds of information would be available that might be useful, nor was it entirely clear what the end purpose would be, or how any information might be appropriate for use in the future. A first reading through seemed, if anything, to confuse the issues and potential purposes. There seemed to be almost nothing coherently and obviously the same. Re-reading and note-taking led to information on a great many points of interest but without pattern or form; it was not systematic data analysis and seemed to serve little purpose.

The continuing process was very different from strategies possibly well-rehearsed by academics in the writing of papers and articles: find some major ideas, threads or concepts, select a quote or two that support a personal argument or vision, and take little notice of the rest. This would have been possible, even easy, but it did not do justice to the deeper complexity of many of the papers, especially those written by outstanding academics steeped in years of study of theoretical principles in education or psychology and the relation of these to practice. Given also that these papers had eventually been selected from a process that started with over 14,000 studies, they warranted more than the selection from them of a few tasters and tit-bits. Hence began another form of systematic analysis, but without at this stage being sure what it was that was available in the papers for such a process, and not being sure what criteria would be appropriate. Re-reading of papers led to the development of a provisional template into which all important data could be fitted. The products now look straightforward; the data sit snugly under the appropriate headings.

The process was much messier, with the template constantly being revised, reconceptualised and refined.

Why was this process so difficult? The problem lay in part in the nature of the data. The collection of papers addressed PDP-related processes in a variety of contexts, in a range of countries; the overall sample covered a broad range of ages, levels of academic experience, and ability; the size of the samples varied enormously; there was great variety in the type and style of intervention; the time-span of the intervention; the differing nature of the processes used for monitoring outcomes, as well as the different nature of anticipated outcomes and the statistical procedures used for measuring change. Such a range can be seen as powerful. Or it could be maintained that an attempt to make any claims from a set of studies that are so disparate has no validity. How can it be sensible to say that a study examining strategies for text comprehension over nine weeks with all male students enrolled in a six-month diesel mechanics course in a post-secondary system in Wyoming can have any relationship with a study that takes place over six years with university undergraduates in the context of the broad range of development activities required for professional practice as a psychologist in Finland? Or could these studies be compared to one with sixth grade Israeli students testing the effects of computerized feedback in developing mathematical reasoning? Given this variety and difference, it was extremely difficult to make clear-cut or simple statements about what might be learned, and direct comparison of effects between studies was hardly possible. Above and beyond these differences was the fact that the research design and methodology was different for each study, as were the measures of change, general analyses and statistical procedures used. In addition, it was sometimes not easy to find even the most basic data from within this group of papers. Many are not written as systematically as might be assumed, given that most appear in good quality journals. Also, some of the studies were adapted in design over the course of the research period, adding confusion to what actually was being done, or measured. Any conclusions were further confounded by the limitations of the research activities, with many authors being critical of the limitations of their own work and how it might be interpreted within future practice.

A further problem lay in the fact that, although the processes described in the papers related to the research criteria for inclusion – and incorporated descriptions of reflection, action, and so on – in fact, very few of the outcomes of these 25 studies had anything to do with the kinds of activity that are usually associated with PDP in the UK. This raised the issue of what, then, should be examined in further detail? Were there useful links to be made that were not immediately apparent?

'Guide' for PDP practitioners / HE teachers

There were two objectives for the deeper level of data extraction. The first was to produce a scholarly paper that would add to the cumulative knowledge for the practice of teaching and learning. The second was to embody these deeper understandings and principles for enabling learning through reflection, action planning and evidence building, in practical guidance so that HE teachers might judge how to use this knowledge in their own teaching and learning contexts. The latter could not be achieved without the scholarly analysis for the former.

Decisions about how to manage the data led to decisions about the form of the 'Guide' for teachers. The guide now under construction[9] consists of three main aspects.

- Ø *A Summary* of the salient features of each study, to a common template, which includes:
  Key words and EPPI quality ratings
  Purpose of intervention
  Research context
  Research Methodology: sample and research design
  Underpinning research, models of learning/ philosophy/ definitions
  Changes in approach to teaching/learning (intervention)

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[9] Part of the process of construction is to consult with the potential users of such a Guide as to how best present the information in ways that will be both acceptable and useable.

Intended learning outcomes
Observed outcomes
Stated Issues
References

Each summary provides a mini-case study (for an example, see Appendix 2) which may be of interest in its own right for those wishing to know more about the 25 'in-depth' studies. It also provided the means by which some parity of information could be introduced, and from which an overview provided in a set of summary charts was gained. Much of this information is provided in the exact words of each paper's author(s), so as not to incorporate misinterpretation or misunderstanding of sometimes complex information or concepts.

Ø *A set of summary charts*: (example given in Appendix 3) in single or double page, view at a glance, enables easy summary or comparison between paper: for example, details of the setting, context and population sample for the 25 studies; the rationale for change presented for each study, and so on.

Ø *A Review* provides much of the same information but organized into a different format, divided into sections to cover:
   a) The cases presented for change or the rationale for each study;
   b) Underpinning or associated models of learning;
   c) Principles of learning and strategies to improve learning, including practical activities and tasks.

The review attempts to show how all the papers build, add to and extend a complex picture (for an excerpt from this section which illustrates this point, see Appendix 4). They draw together what might be learned in a more thematic way. Although there is a coherence that runs through the whole review, each section stands on its own and may prove of interest to different readers according to whether they are more interested in why teachers and educationists want to change their practice; in exploring or coming to better understanding of theoretical models of learning; in the principles that underpin strategies to improve learning; or in practical examples of activities and tasks that relate to these discussions.

Detail of the Review

The cases presented for change or the rationale for each study: Although the precise rationale for change, or for monitoring change, is different in each of the 25 papers, there is certainly a significant similarity in interests. This is noteworthy in particular since the contexts for change, the subject areas, the age-range, and so on, are so highly disparate. In some of the papers, the rationale for change is clearly presented as the motivation for the study. In other papers, the study itself is used to present a case for change or to demonstrate that changes undertaken have been worthwhile. Examples are given of how the case for change (or for monitoring change) is presented, taking account of the similarities and differences in underpinning rationale.

Underpinning or associated models of learning: As with the rationale for change, the models and definitions that underpin each of the studies are different, but again there are many similarities in the kinds of thinking that are evidenced. Key features include self-regulation of learning, metacognition, cognitive processes and strategies and many other similar concepts. The examples from selected studies demonstrate how coherent theory might begin to emerge as elements support and extend each other. What is important in the building of this theory is that it has stemmed from researchers and practitioners who have been largely successful in bringing about positive change in the context in which they work, whether in terms of learning and attainment, or in terms of perceptions of the learning environment. Hence it is theory that is closely bound with the potential of practice, both for those developing professional understanding linked to the workplace and for those studying subject content in the classroom.

Principles of learning and strategies to improve learning: This is the most practically oriented section of the guide. It gives an outline of a range of activities, all of which have been demonstrated to be successful within a particular environment. None-the-less, the more practical focus can be seen to link to theoretical statements in the previous section. Some of the described activities, tasks or tools are likely to lend themselves well to use or adaptation in the context of PDP in UK higher education

As well as providing a wealth of detailed information about effective processes for teaching and learning, the approaches of the 25 papers support the beginnings of theoretical underpinning to UK-style PDP that has been absent to date. However, the picture is not straightforward. None of these papers is about PDP *per se*, and the potential relationship of PDP to the multi-faceted complexities of approaches to learning and teaching reported would have, at this stage, to be dependent on informed assumption. Further, all but one of the studies in this group was concerned with prescribed approaches to implementation and there was a consistent focus on knowledge attainment rather than broader aspects of PDP.

Data extraction from the larger sample (158 studies)

The studies (outlined above) from the in-depth review did not differ in obvious ways from the rest of the mapping key worded studies. This applies equally to the context of PDP; reasons for learners using PDP; focus on course-specific or broader self-development aims; population focus; sex of learners; age of learners; and educational setting. Studies in the in-depth review were also more likely to have been undertaken in the USA (few evaluations of researcher-manipulated interventions have been undertaken in the UK). As with the smaller group, they tend to be characterized by being descriptions of innovations in existing teaching programmes. However, the studies in the larger sample were more likely to be concerned with independent learning, cooperative learning, logs and journals, and self-assessment as well as self-identity and attitudes to learning outcomes. These features are more readily linked to PDP practices in the UK. In addition, the broader sample had a relatively low use of psychometric tests and examination measures and a more widespread use of participant's views (which is not surprising in that studies with participant views as the only measure were excluded from the group of 25). The problem with this, of course, is that even the most positive of comments about PDP-type activities from any particular student cannot be linked with any specific, measured change.
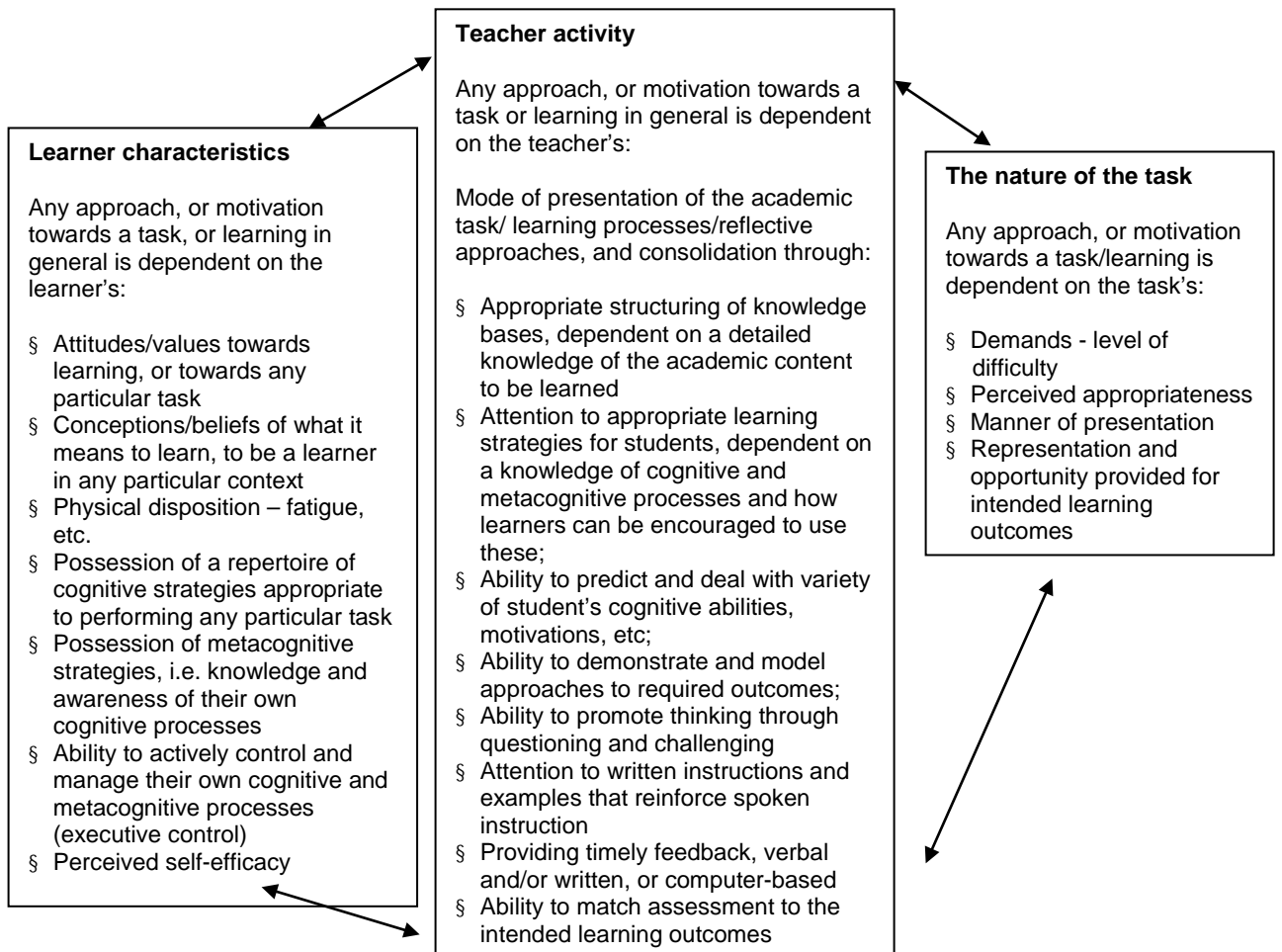
The ongoing analysis of this larger group of papers has presented the same methodological problems as the smaller sample – how is it possible to deal with a set of such disparate conceptions and practices? The Guide to the larger group of papers will summarise the breadth of study and the range of explanatory constructs, discuss specific contributions to developing practice in PDP and identify which kinds of study are best suited to informing pedagogical practice. At present, it appears that the potential tends to be limited to teaching 'tips' by the research design (absence of control groups) and their data base (the popular use of participants' self-reporting). Where control groups are used and hard data reported there are often seemingly impressive results. However, severe limitations remain when important attributes are treated un-problematically. For instance, descriptive reference in literature reviews to, for example, 'reflection', 'metacognition', 'deep and surface learning' and 'self-regulation' tend to promote these attributes as the explanatory factor. There is actually no evidence that learner outcomes have any connection to, say, metacognition, or to what reflection actually means or entails in practice. Explanations for improvement might simply relate to the fact that students recognize what it is they are meant to be doing, that the task is given clarity and the learning objectives or outcomes are made explicit.

Emergent principles of effective teaching and learning

The comment above relates equally to the 25 'in-depth' studies. What is also persistent in this smaller sample is the *central role of the teacher* in many studies. This is not surprising given that all but one of these was teacher-directed and prescriptive. If students are made aware of useful strategies, there is some likelihood of their being used. If students are directly taught an effective strategy for learning, and are expected to rehearse this strategy, then they will do so, and will do

so to good effect (though this effect may not be transferred to new contexts unless it is specifically and explicitly worked at). In many ways, this is a central finding of all these studies – that teaching really matters and that the strategies and materials used by the teacher can have important impacts. This message may not be considered to relate specifically to PDP as it is usually perceived in UK practice, with an emphasis on taking responsibility for personal growth and independent learning. It does, however, suggest that the consideration of strategies for enabling students to work in such ways needs particular attention, developing the means by which students can be supported through direct teaching, as well as through appropriate resources, feedback and forms of assessment.

Figure 1. Tentative model outlining the complex interactions between the teacher, the learner and the task

Teacher activity

Any approach, or motivation towards a task or learning in general is dependent on the teacher's:

Mode of presentation of the academic task/ learning processes/reflective approaches, and consolidation through:

§ Appropriate structuring of knowledge bases, dependent on a detailed knowledge of the academic content to be learned
§ Attention to appropriate learning strategies for students, dependent on a knowledge of cognitive and metacognitive processes and how learners can be encouraged to use these;
§ Ability to predict and deal with variety of student's cognitive abilities, motivations, etc;
§ Ability to demonstrate and model approaches to required outcomes;
§ Ability to promote thinking through questioning and challenging
§ Attention to written instructions and examples that reinforce spoken instruction
§ Providing timely feedback, verbal and/or written, or computer-based
§ Ability to match assessment to the intended learning outcomes

Learner characteristics

Any approach, or motivation towards a task, or learning in general is dependent on the learner's:

§ Attitudes/values towards learning, or towards any particular task
§ Conceptions/beliefs of what it means to learn, to be a learner in any particular context
§ Physical disposition – fatigue, etc.
§ Possession of a repertoire of cognitive strategies appropriate to performing any particular task
§ Possession of metacognitive strategies, i.e. knowledge and awareness of their own cognitive processes
§ Ability to actively control and manage their own cognitive and metacognitive processes (executive control)
§ Perceived self-efficacy

The nature of the task

Any approach, or motivation towards a task/learning is dependent on the task's:

§ Demands - level of difficulty
§ Perceived appropriateness
§ Manner of presentation
§ Representation and opportunity provided for intended learning outcomes

The findings from the 25 papers lend themselves to the provision of a tentative model (Figure 1) that outlines the complex interactions between the teacher, the learner and the task that has been set. This model is in the early stages of development and it will undergo revision as the review of papers continues. What this model suggests is that every learning and teaching situation, whether connected in PDP or any other context, is underpinned by a complex set of conditions relating to the inter-relationship between student, teacher and task. It also suggests that any teacher, to gain maximum impact, must be deliberately aware of these relationships and the ways in which they are likely to impact on any kind of provision and any learner response. This could be of particular interest in the context of setting-up PDP activities, and innovation in general, where - for example - students may not be motivated to try out new ways of working, where they may not have adapted appropriate cognitive and metacognitive strategies, and may find this

difficult without support, and may hence lose perceptions of efficacy – again impacting on motivation.

Stage 3 – Building a database of UK HE PDP evaluation studies

Underlying the third stage in the experiment is the belief that we need to develop evidence bases to inform practice that relate closely to the real worlds of practitioners. Scientific research about teaching and learning that is developed outside the everyday working contexts of HE teachers may not be as influential as studies that are made in contexts that they can readily relate to.

The third stage in database development is to create a more detailed evidence base of UK HE studies on PDP. These are a subset (n=30) of the previous much larger PDP review plus 17 new institutional evaluation studies identified through a comprehensive search conducted between January and April 2004, giving a total of 47 studies in the UK HE PDP data base.

PDP varies considerably in terms of both how it is conceptualized and how it is operationalized in different contexts. In order to provide greater detail about the nature of the PDP in the UK HE studies, these studies have all been put through a process of more detailed keywording than in the original systematic review (as in Step 1 from January 2001). The PDP specific keywords used (Appendix 1) were developed through a discursive process involving PDP practitioners. These studies include reports of study results which need to be treated with caution as the findings have not been qualified by any quality assessment of the studies. This might limit the applicability of the findings.

To improve public access to the data, a more sophisticated search engine has been developed for the EPPI-Centre's Research Evidence in Education Library (REEL) to allow users to search on any aspect of the categorical and free text data on each study. Searching for information on studies is undertaken using a two-stage process:

Stage 1. What studies do you want to select?: A 'wizard-based' interface enables users to select sub-sets of studies with the option of refining their search terms in order to narrow down the result-set to the studies of most interest. The enquirer may, for example, be interested in studies by particular authors, studies undertaken in particular places, or studies that have conceptualized or operationalized PDP in different ways. The enquirer can search for studies by either: (i) selecting studies based on categorical answers, or (ii) searching using free-text terms.

Stage 2: Viewing data on these studies: After identifying the studies the enquirer can choose to view all the information in the data base contained about each study (one at a time), or by looking across studies to examine specific information about them. For example, an enquirer might wish to identify all the studies that had conceptualized PDP in a certain way, but is only interested in particular aspects of these studies. For example, the contexts in which such forms of PDP had been applied in the studies or the evaluation methods that had been used.

The variables on which all the UK HE studies have been coded categorically and with free text are listed in Appendix 1.

All EPPI-Centre systematic reviews include basic keywording of studies in a systematic map and more detailed coding of studies in a systematic synthesis of results. These details are available on the EPPI-Centre web pages but users have to 'drill down' in the data to find these details. The detailed coding of UK HE studies is an important step forward in providing extra detailed keywording but also in the developing a user led search engine to enable access to this level of detail on each study. This allows users not just to have an overview of the research evidence but to combine it with easy access to detailed information on the nature of PDP and the context of its application in each UK study.

Discussion

This experiment was driven by the belief that certain infrastructures and capacities need to be developed in order to engage HE teaching communities in ways that will enable us to learn how best to work with and support an evidence based approach. The field of personal development planning was chosen because it is a potentially powerful teaching and learning intervention driven by top-down policy affecting the whole higher education system. We have still to engage PDP practitioners in the use of the database and the results of data extraction from the data base. This will be the next step of the process.

Essential capacities

We have learnt that developing an infrastructure to support an evidence based approach is a significant and sustained process requiring a range of interdependent capacities like the:

- Ø Capacity to engage practitioners in ways that will help them shape key research questions, thinking about the way the data base might be coded to facilitate data extraction and eventually the testing, evaluation and validation of the data base (still to be achieved).
- Ø Capacity to conduct systematic research, to map the field and collate the evidence, to review and extract the evidence in ways that are meaningful to potential users.
- Ø Capacity to convert the products of systematic research synthesis into useful and meaningful Guides for HE teachers and institutional policy makers.
- Ø Capacity to find relevant evaluation studies that are close to the contexts in which UK HE practitioners work. This is particularly important in finding evaluation studies that are deeply buried within institutions.
- Ø Capacity to create a data base that can respond to the enquiries that users want to make (yet to be demonstrated).

The project has yet to examine the cultures, capacities and conditions necessary for users to actively utilize the data base and the information that can be extracted from it. This is the priority in the next stage of the work.

Constructing an evidence base

Constructing an evidence base requires expertise and capacity to conduct an appropriate systematic review and research synthesis. Necessarily this has to be a collaborative and interactive process between those with a real interest and stake in the results (practitioners drawn from the field of practice) and the expert reviewers. Conversation and dialogue involving challenging assumptions, and the making explicit of thinking so that others can understand why decisions are made, is an important part of the process. It is an emergent process with a strong sense of direction but the detail of how to get there only becoming apparent along the way.

Constructing an evidence base takes time. Given what we now know, and assuming that resources are available, we estimate that a database of comparable size and complexity to the one we have constructed which incorporates both published research and institutional studies might be created within 12 to 18 months. Using the techniques and human resources that we have employed, it would cost around £80,000.

Once created, a well coded data base provides the infrastructure for accumulating knowledge in the field, but this requires maintaining. There is therefore an ongoing or periodic investment to update the data base and refine the synthesized products.

A well coded data base can facilitate the identification of gaps in the evidence base. For example, in the case of the stage 1 data base, there is very little evidence relating to the employability outcome claims for PDP-related learning activities.

Overall, the database shows that:

- Ø There is a lack of balance in UK between studies on how PDP works and whether it works.
- Ø There is a lack of clarity about the conceptualization of PDP. The range of approaches that have been developed and studied has been important in the process of innovation but there is need for more conceptual work on the similarities and differences in these approaches. A conceptual review of approaches in the literature could be a part of such a process.
- Ø There is evidence that PDP is effective but a lack of clarity about what aspects of PDP in different contexts has what effects. This could be addressed by more conceptual work and more comparative studies of the effects of different approaches to PDP.

The detailed database of UK HE studies is an innovation compared to previous systematic reviews as although it acknowledges the risks of putting due weight on individual research studies, it recognises that users of research do need access to the particular initiatives and contexts evaluated in individual studies. The detailed coding and new methods of searching the database provide a powerful way of combining the benefits evidence summaries with access to the important contextual details of individual studies. A review of research may, for example, indicate what is known about a topic and what further research in general is required, but the detail of the individual studies is necessary to develop more specific research plans.

Digging deeper into the data

But identifying best available evidence (against explicit criteria) is only the first step in a long journey to understand what this means for teaching and learning. Liz Dunne has revealed something of the intellectual struggle that is necessary to master the data in an intelligent and meaningful way and to produce Guidance that contains within it the fundamental principles of effective teaching and learning in the implementation contexts that were defined by the research question – *reflection – action – recording of evidence*. We believe that it is only at this level of interrogation of the data that these fundamental patterns, principles and insights can be surfaced and understood.

Having reached this point of enlightenment, many more questions are then raised about the transferability of these principles into the UK HE PDP context. For example: Are there general principles of learning and teaching that apply to these studies as well as to those that focus specifically on a broader conceptualization of PDP? What is the difference between learning in the context of personal development and learning in the narrower context of subject-based study? What is the role of metacognition – or self-regulation – in the development of students who can take responsibility for their own learning in a specific context, or in transferring knowledge and skills to a different context? Is self-regulation the same thing in the broad context of PDP in the UK as it is in the narrow context of learning a small amount of factual information in a controlled classroom situation in the USA? Do studies, such as these 25, that focus specifically on academic learning and cognitive development have any relationship to broader conceptualizations of PDP in terms of personal development, career planning and lifelong learning? Should there be differences in the role of a teacher in the context of subject-oriented learning and PDP?

Hopefully the review will encourage the addressing of such basic yet fundamental questions, as well as a more informed approach to the conceptualization of PDP and to practice, evaluation and research premised on reasoned discussion of theoretical perspectives and effective outcomes. It may enable practitioners to set their work within principled argument on theoretical principles and how these relate to personal practices. It may help to provide a more detailed rationale for PDP, and shared understandings. However, it can only provide a starting point. There is a need for continued work, both in relation to knowledge about effective practices in the context of PDP *per se*, but also in relation to exploring and expanding theoretical foundations and understanding more about effective models of learning and teaching and their inter-relationship in supporting student development.

Searching for relevant information

An evidence based approach involves searching for information to answer questions that are of particular interest to practice. While retrieval of information from electronic bibliographic data bases is relatively straight forward, searching for institutional evaluation studies is not. The project employed a range of search strategies including: invitations to contribute extended through practitioner meetings; several email networks; targeted emails, telephone or face to face conversations with practitioners known to have been involved in evaluation exercises; searching of personal and organizational archives for past reports and searches of likely websites for relevant reports and projects.

Given the scale of activity over the sector and the strength of the recording achievement/PDP movement, it was anticipated that more than 17 studies would be found. There are a number of possible reasons for the low discovery rate.

- Ø There are more studies to find but our search mechanisms are ineffective.
- Ø There are more evaluation studies but people are not willing to part with them.
- Ø Evaluation has been done in the past but the information has been lost because it has not been properly stored and managed.
- Ø There is evaluation information but it is not in a form that can be used.
- Ø Little evaluation has actually been done.

We can address the first two reasons by modifying our strategies and trying harder to persuade people to pool their studies, and creating conditions of anonymity.

The other reasons present more serious obstacles to the concept of building a large database of institutional evaluation studies and potentially pose a significant challenge to the successful system-wide introduction of PDP or any other system-wide teaching and learning intervention.

Evaluation has been done in the past, but the information has been lost because it has not been properly stored and managed.

Over the years, there has been a wealth of development work associated with recording achievement (the precursor to PDP) funded through a string of initiatives like the DfES/DfEE Enterprise in HE, HEFCE Fund for the Development of Learning and Teaching, DfE/DfEE Innovations Fund. It is fair to say that the emphasis in these projects was development rather than evaluation but there was an expectation that the impact of the work would be evaluated. Unfortunately, evaluation was treated a) as a second order issue and b) was looked at from the perspective of accountability rather than knowledge to inform practice. While projects developed knowledge about the effects, there was no central repository for the storage of such knowledge and until recently, no agency interested in the active management of such knowledge on behalf of the HE system. It is therefore not surprising that relevant information has been lost given the absence of an effective infrastructure and capacity for archiving and actively using the information. This is one of the reasons for this project. By creating the infrastructure and capacity to use the evaluation evidence we will begin to change the conditions that was one of the main causes for the loss of information in the past.

There is evaluation information but it is not volunteered because it is not in a form that can be used.

Within the institutional environment, evaluation (other than monitoring progress) has not been a strong feature of our policy-driven change culture. It isn't routinely built into planning and budgeting outside project work and it should therefore not be surprising that so little evaluation is being reported. There may well be information about PDP implementation buried in annual programme review reports or other QA documents but it is not of a type and structure that can be used. We have also generated much case study information and developed the capacity to *disseminate good practice*. But this is geared more to spreading ideas about practice than to providing information based on objective evaluations of practice. We speculate that the work we

are doing is merely exposing the absence of a culture of creating and using research and evaluation evidence to inform policy and practice in UK HE teaching.

Little evaluation has actually been done.

There are two possible explanations for this. The first might reflect ambivalence to the idea of evaluation within the practitioner community – the motivation and interest within the community is in the development of practice and there is less interest in evaluating the effects of practice. We might hypothesize that for the teacher, the intrinsic interest and motivation is in taking or growing an idea and implementing the idea. The teacher is content to rely on perceptions of how the new practice works based on their experience of implementation and the reflective deliberations within the experience. The teacher is less interested in investing time and energy in an investigation that tries to measure impacts (see the earlier quote from Catherine O'Connell's research).

An alternative explanation for the paucity of evaluation evidence might be that although the teacher is interested and motivated in evaluating the impact of his or her practice, the capacity of individuals (such as time, resources, knowledge and capability, competing demands, necessity to implement/change other areas of practice) to do so, may be limited.

The studies that we have identified that contain evaluation information are generally externally (more rarely, institutionally funded) with expectations that they will be evaluated and are in settings? where accountability mechanisms ensure that this is done. Furthermore, in these better resourced experimental environments, it is more likely that research and evaluation will be undertaken by people with specialist expertise who are independent of the development, thus providing both objectivity and a source of expertise and capacity that is beyond the practitioners who have developed the practice.

Although our work is at an early stage we are beginning to think that the initial difficulties we have encountered have important implications for PDP implementation. It is suggesting to us that resources (such as time to develop and adapt/experiment, costs of materials and support infrastructures) not only have to be found to implement policy, but also resources (time, expertise, capacity) have to be found to evaluate the resulting practice. Reflective accounts and action – research based models which may not be adequate generators of objective evaluation data for the types of systemic change associated with the introduction of a policy like PDP.

Further work is being undertaken to examine which factors are important.

Conclusion

Our initial beliefs have been confirmed : in order to understand how we answer a question like *what does an evidence based approach to implementing PDP (or any other teaching and learning intervention) mean?* requires the physical construction of an appropriate evidence base and commitment to developing the knowledge of how to extract data in meaningful ways from this evidence base. It is only by experimenting that we can appreciate both the potential and the limitations of the approach. The study has raised some important and challenging questions in respect of the building of such data bases, the extraction of data and the level of evaluation activity in UK HEIs related to the implementation of the UKs first ever system-wide policy for teaching and learning.

Acknowledgements

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