USING PERSONAL DEVELOPMENT PLANNING FOR CAREER DEVELOPMENT WITH RESEARCH SCIENTISTS IN SUB-SAHARAN AFRICA

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By

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I dedicate this to my mother Daisy Hodnett, who was a remarkable woman and an inspiration to me. Thank you Mum for all your spiritual guidance.

ABSTRACT

Using Personal Development Planning (PDP) for Career Development with Research Scientists based in Sub-Saharan Africa

Hazel McCullough

This research study evaluated the use of Personal Development Planning (PDP) as a strategy to help a group of ten doctoral and fourteen postdoctoral research scientists, based in eight developing countries in Africa, enhance and progress their career development. To achieve this, a PDP system, with built-in tools and support systems was developed specifically for this purpose. Using an Action Research approach, within a framework adapted from Kirkpatrick's "Four Levels of Evaluation" the research study evaluated the PDP system, tools and processes; and from lessons learned developed a transferable system and tools for future use with research scientists based in these and other developing countries in Africa. The study explored the following questions: (1) How do these research scientists feel about using PDP, the system and tools? (2) What is being done differently as a result of engaging with PDP – are there any learning gains, and are they applied in practice? (3) To what extent has PDP helped these research scientists feel confident about planning and managing their career development? (4) How far is it feasible to implement PDP more widely with other research scientists in Africa? Using both quantitative and qualitative data from the Group's PDP documentation,

questionnaires, nominal group technique, an online focus group discussion, and semi-structured interviews, the main study findings showed that overall the majority of the group felt that PDP made a positive contribution to helping them enhance and progress their career development; and was successful in helping them to feel confident about planning and managing their career development and progression.

The study does not evaluate, given the focus and limited time, the broader impact that engagement with PDP might have on career progression. A follow-up and longitudinal study would be needed to evaluate this aspect of PDP in relation to career development in Africa.

The data showed that PDP is a concept that can be transferred successfully to developing country settings in Africa. It also indicated that, with the essential support elements of personal support, financial support, time and institutional support built into a PDP programme, it would be feasible to implement PDP with a similar group of research scientists in Africa. Further studies are needed to evaluate feasibility of implementing this strategy more widely in countries in Sub-Saharan Africa.

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DEFINITIONS AND ABBREVIATIONS

FGD	Focus Group Discussion
GMP	The Gates Malaria Partnership – a nine-partner consortium with the aim of building research capacity in malaria in Sub-Saharan Africa
GMP PDP Group	The participant group for which the PDP system was designed and implemented
HEI	Higher Education Institution
JSS	Joint Skills Statement
NGT	Nominal Group Technique
PDAP	Personal Development Action Plan
PDP	Personal Development Planning
PGR	Postgraduate Research (students)
QAA	Quality Assurance Agency (for Higher Education in the UK)
SSA	Sub-Saharan Africa

CHAPTER 1

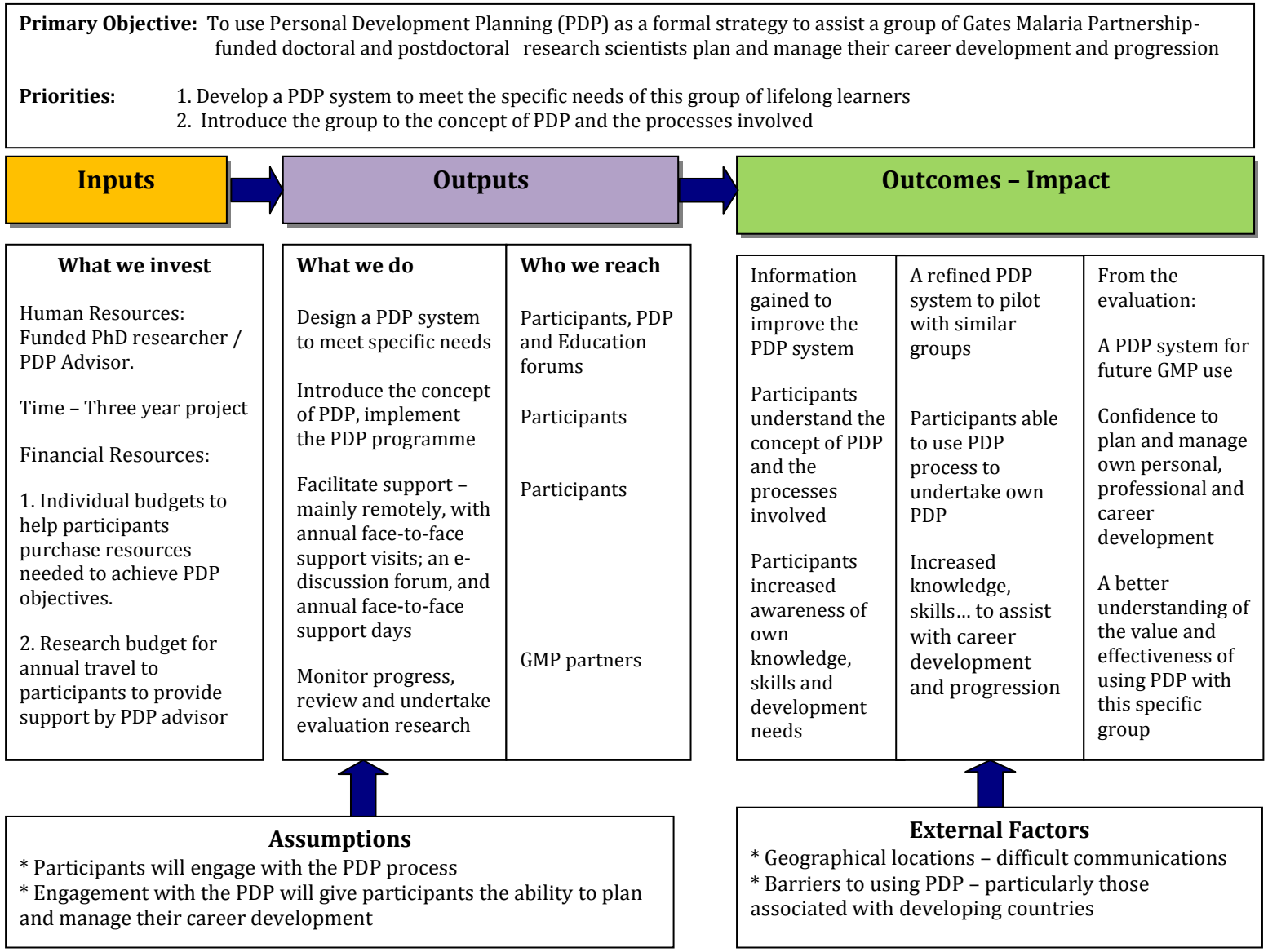
OVERVIEW OF THE STUDY

INTRODUCTION

This research study began its life as a brainstorming session in Yaoundé, Cameroon in 2005. The event was an annual support workshop for a cohort of African scientists who were awarded grants, by the Gates Malaria Partnership (GMP) to undertake research studies in an aspect of malaria control. The workshop brought together this group of ten doctoral and fourteen postdoctoral scientists from eight Sub-Saharan African (SSA) countries –who, in collaborative partnership with European and African institutions, were registered with an institution in the United Kingdom or Denmark and undertook their field work in their home countries. During the workshop the group (hereinafter called the GMP PDP Group) collectively expressed a need for assistance with developing the skills and knowledge they did not acquire or develop as part of their PhD studies; but needed to help them progress with their career development in their home countries. The brainstorming session produced a brief needs analysis, which was formulated into the innovative idea of using the structured and supported process of Personal Development Planning (PDP) as a vehicle to provide this group with the opportunity to meet their individually-identified development needs.

This led to a PDP programme being written into a wider project, initiated by the Gates Malaria Partnership (GMP) project; and with a PDP advisor / researcher recruited to plan, develop, implement, work with and support the group through the PDP process – and to monitor, review and evaluate the programme. Figure 1, gives an overview of the PDP project – which includes inputs from the GMP and shows projected outputs and short, medium and long-term outcomes.

Figure 1. An overview of the PDP project (adapted from the Logic Model by Taylor-Powell, 2005)



BACKGROUND TO THE STUDY:

Building research capacity in Africa

The concept of capacity building has featured in the discourse of development for many years. Within the context of research it is seen as enhancing the abilities of individuals, organisations and systems to undertake and disseminate high quality research efficiently and effectively (DFID, 2009; Gwin, 2005). At an individual level it is about building up a critical mass of researchers competent in a particular thematic, disciplinary or methodological area (Jones et al, 2007). The need for building research capacity in Africa is documented within the literature (Costello and zumla, 2000; Nchinda, 2002; Ntoumi et al., 2004; Lansang and Dennis, 2004; Nuyens, 2005; Whitworth et.al. 2008).

Building a critical mass of competent researchers in Africa is seen as essential, not only to enable researchers to undertake studies in their own national settings, but also to ensure that the problems can be analysed and addressed in their epidemiological context; and ensure that the research findings are translated into policy and practice (Nchinda, 2002; Ntoumi et al, 2003; Dison, 2007). Ways of developing this critical mass of researchers in Africa is something that has been on-going and evolving over the years; with strategies including research collaboration and partnerships (Costello and Zumla, 2000) and donor-funded PhD scholarship programmes (Harle, 2009). The PhD Scholarship programmes are increasingly shifting – from the individual being registered and undertaking postgraduate research study entirely in the donor-funded

country; to joint programmes, (like the GMP programme) where the individual is registered with the donor-funded institution and undertakes field work in their home country; to being registered with their home institutions and undertaking the majority of their study in their home countries but benefitting from access to joint supervision, support and facilities of the donor-funded institution for a period of the time.

The aim for the GMP was not just to help build a critical mass of researchers in malaria in Africa but also to help build some sustainability in malaria research in Africa. In order to help this cohort of African scientists continue to work in the field of malaria and to use their newly-acquired skills and knowledge to best serve the needs of their populations, the GMP sought to explore the use of PDP as a strategy to help with the career development of these research scientists. This can be seen in the GMP PDP project agreement document written in 2006, where the introduction of PDP is seen as a vehicle to, *"...equip PhD students with individual prioritised professional skills and knowledge that will enhance their professional development and improve their 'career marketability' in public health research and control in their home country"* (GMP PDP Project Agreement, 2006).

Challenges for early-career researchers in Africa

Managing a career in the 21st century is a challenge in itself. The shift from an organisation-based (and owned) career to one that is individually-owned and experienced beyond the boundary of any one

organisation is becoming progressively more widespread (Kidd and Green, 2004; Amundson, 2006; Donner and Wheeler, 2001). Lips-Wiersma and McMorland (2006) show how the focus is now increasingly on self organisation to develop the portfolio of skills, flexible know-how and adaptability needed to increase the marketability and employability required to manage the "boundaryless" career (Arthur, 1994).

For the research scientist, whose career development and progression often involves taking on increasingly challenging assignments – for example, attracting and managing bigger grants and research projects, to develop a reputation amongst peers, colleagues and the wider research community – there is indeed a recognised need for the requirement of a portfolio of skills, to help manage these challenges.

Career development and progression is dependent upon many social, political, cultural and economic variables; both locally and globally. This is nowhere more highlighted than in developing countries in Africa, where forces external to the individual can be seen to have a greater influence than in developed countries. Changes to the political landscape as a result of events such as attaining political independence, civil wars and conflicts within the region, coupled with the economic crises, including the impact of a global economic recession (since many African economies are dependent on funding from international donors) all add to the challenges that African research scientists are having to take into consideration when managing their careers in their home countries.

The literature highlights some of the specific challenges that early-career research scientists in Africa face. These include the lack of good research facilities, poor access to literature and inadequately funded support services and resources (Nchinda, 2002). For African research scientists forging a career in the public sector or academia, these challenges also include low salaries, difficulties with establishing a publication record and significant academic workloads (Harle, 2009; Beoku-Betts, 2005; Campion and Shrum, 2004).

While it should be recognised that there is no single and homogenous African culture, it is important to be aware that there social and cultural constructs that are particular to Africa. These include the importance of status and hierarchy in professional and social life, nepotism and the lack of meritocratic societies. It is essential to be aware of these challenges faced by the research scientist in Africa, since they can have a significant influence in the individual's career progression.

Many Africans (and not exclusively research scientists) who struggle to manage their careers amid these challenges, end up leaving for higher paying private sector or international donor-funded employment, or take on part-time positions to supplement their low salaries or as a last resort, take higher paying university or research positions abroad. For the early-career research scientist this often includes remaining in the donor-funded country to take up postdoctoral research positions. Commonly referred to as "brain drain" some authors see this move abroad, or decision to move abroad or remain in the donor-funded countries, in itself as one of the

career challenges faced by research scientists in Africa (Docquier et al., 2007; Hall, 2005; Seguin et al., 2006; Tansel and Demet Gungor, 2003). To put the issue of "brain drain" from Africa into perspective, the United Nations Economic Commission for Africa and the International Organization for Migration (IOM) estimate that since 1990, at least 20,000 professionals leave the continent each year; and out of the 300,000+ professionals in the Diaspora, 30,000 of these have PhDs (Mutume, 2003; Tebeje, 2005).

The Gates Malaria Partnership

In 2000, with funding support from the Bill and Melinda Gates Foundation, a collaboration called the Gates Malaria Partnership (GMP) was formed between five African and four European academic and research institutions. The broad aim of this partnership was to help address the burden of malaria in Sub-Saharan Africa (SSA); and more specifically, aimed to build knowledge, promote applied research and develop capacity in malaria in SSA. In addition to other capacity-building initiatives implemented by the GMP, such as developing infrastructure through building laboratories and training centres, the GMP also invested in developing individuals through funding training and research. This was by way of implementing a PhD programme and awarding postdoctoral research grants to African scientists from malaria-endemic countries in SSA (GMP report, 2001 – 2006).

The GMP recruitment process to the PhD programme was highly competitive and selective; and with the final cohort of grantees (selected from hundreds of applicants) seen as the potential leaders in malaria research in their home countries. With this investment made in these individuals, the GMP sought to help this cohort return to their home countries, to become embedded in their home institutions and continue with careers in malaria research; where they could help address the burden of disease in their home countries. To help achieve this, the GMP project supported two main career development initiatives. The first was a re-entry grant programme, which gave the PhD students the opportunity to apply (competitively) for funds to continue postdoctoral research in malaria in their home countries. The second was a supportive PDP programme, which gave the individuals the opportunity to engage in a process that would help them identify and develop the skills and knowledge needed to enhance and progress their career development in their home countries.

PURPOSE OF THE STUDY

As part of the GMP career development initiatives, this research study sets out to formalise the PDP process and rigorously develop and evaluate PDP to see whether it is workable in an African context; to look at what makes it workable and whether it could be transferable to other African settings. To do this, the study aims to capture the experiences of the participants as they explore and use the PDP system, developed

specifically for this context. It endeavours to develop what Elliot (1993, pg 53, cited in Somekh, 1995) calls "situational understanding" – that is, gain evidence and knowledge of how PDP (used widely in developed countries to assist with personal and professional development) might work with individuals in the complex environment of an African developing country setting.

To that end, the purpose of the study is threefold:

1. To develop a PDP system and tools to use as a means to help this group of research scientists enhance and progress their career development
2. To gain evidence, knowledge and an understanding of how using PDP might help these individuals with their career development
3. As a result of the evaluation of using PDP with this group, to develop a transferable tool for future use with other research scientists based in these and other developing countries in Africa

To achieve this, the study aims to explore the following questions:

1. How do these research scientists feel about using PDP, the system, tools and processes?
2. What, if anything, are they doing differently as a result of engaging with PDP?
   (a) Are there any learning gains as a result of engaging with PDP?
   (b) Is any new learning applied in practice?

3. To what extent has PDP helped these research scientists feel confident about planning and managing their career development and progression?
4. How far is it feasible to implement PDP more widely with other research scientists in Africa?

Why use Personal Development Planning (PDP)

PDP, defined as *"a structured and supported process to help students become independent, effective and confident lifelong learners* (Quality Assurance Agency for Higher Education [QAA] 2000), is a broad concept with a wide range of potential outcomes. It is used in a variety of contexts and for a variety of purposes, which are outlined in Table 1.

Table 1. The variety of PDP purposes

Author	PDP Purposes
Higson and Wilson (1995)	Manage staff and organisational performance
Floodgate and Nixon (1994); Tucker and Moravec (1992)	Manage employee career development within organisations
Tamkin (1996)	To develop a more autonomous workforce in organisations
Quality Assurance Agency for Higher Education [QAA] (2000)	In education as *"a structured and supported process to help students become independent, effective and confident lifelong learners"*
Donner and Wheeler (2001); Little and Hayes (2003)	Supporting Continuing Professional Development (CPD
Newby (2003); Wojtczak (2002); Cornford (2001)	Assist in the appraisal and revalidation process within the medical profession in the UK
Watts (2006)	Manage effective "career development learning" in order to enhance employability

The broad approach to PDP, and the fact that it cuts across the contexts of career development, personal development and learning, makes it a good strategy to explore with this group of individuals starting out on their careers as researchers in Africa. However, it is not just the versatility and adaptability of purpose that makes PDP a good transferrable strategy to use in a developing country context, but it is also the fundamental principle of focus on self, that is: self organisation, self management, self improvement and self direction, that makes PDP an attractive strategy to

use with this group of researchers; in order to help them develop the confidence to plan and manage their career development.

In addition, the individually-centred approach to career planning that PDP promotes, would assist these individuals to develop goals, manage activities and processes, organise their learning and review their outcomes – all to meet their own personal development needs, suit their individual contexts, and enable personal elements such as learning styles and time management to be taken into consideration.

For this group of individuals who had no exposure to PDP, and in some cases, no access to career development in their home countries, it was not just about helping them to develop the skills that they needed to progress their careers in Africa, but also to give them the opportunity to have something that they could have ownership of, as well as develop habits of mind that might support them through their career development beyond the lifespan of the GMP project.

PDP in a Sub-Saharan African context

While there is a growing body of literature to support the use of PDP in higher and related education, and in the PDP processes that set out to help improve student learning (see the systematic review carried out by Gough et al., in 2003), there is no literature to demonstrate how PDP might work in a developing country setting in Africa. The benefits of introducing PDP for career development are noted in the section above; however, introducing a largely western construct into a developing country setting

comes with its own set of challenges, namely acceptance of a concept and ways of working that might not fit with the culture of the setting, in addition to the practicalities of implementation. Context therefore plays a significant role in this study, as the strategy of PDP (to help these researchers enhance their career development) is transported and situated within a challenging environment, in which the development and progression of a career is subject to the complexities of the many social, political, cultural and economic variables particular to developing countries in Africa.

DESIGN OF THE STUDY

The research study aimed to capture the experiences of the GMP PDP Group as they implement the PDP system, and use the tools to work through the PDP processes. While the exploratory and inductive nature of the study lends itself to an interpretive, naturalistic approach, and is indeed conducted within a predominantly qualitative paradigm, it also draws on perspectives and methodologies from the quantitative paradigm. Walji (2009) sees the choice of paradigm or research framework as being informed by contextual realities; and that it is the research quest which informs paradigmatic choice, and in turn determines research methodologies. While it could be argued that in certain research inquiry the use of quantitative or qualitative methods on their own might be sufficient to explain the results of the phenomenon being investigated, the benefits of drawing insights from both traditions is seen by many (Shah

and Corley, 2006; Ivankova et al., 2006; Denscombe, 2007; Black, 2002; Patton, 1990).

Several reasons and benefits are cited for the use of a methodological mix in research studies. Patton (1990) sees it as a means of triangulation, in order to strengthen the research design, while Ivankova et al., (2006, pg.3) see *"neither quantitative nor qualitative methods as being sufficient, by themselves, to capture the trends and details of the situation"* and Black (2002, pg.3) proposes that *"it often takes both to answer a good question comprehensively".*

However, the rationale for using a mixed-method approach in this study is to use the combined strengths from both approaches to gain a more rounded and deeper understanding of the value of using PDP for this specific group, and within their specific context.

The study is organised around the project management cycle of planning, developing, implementing, monitoring and evaluating; and to frame its methodologies, draws on key features from the approaches of Action Research. Some of the features borrowed include: actively engaging participants in the research process; using the cyclical process to continuously make improvements as the study moves through the evaluation phases; and integrating practice with the construction of research knowledge – that is, using the constructed knowledge to feed back into practice, in the form of decision making and improvements to the system and processes (Somekh, 2005; Whitehead, 2005, McNiff et al., 1996).

An adapted version of an evaluation framework devised by Kirkpatrick (2005) was used to undertake both formative evaluations, to inform the cycles of improvement, and summative evaluations, to inform the overall study. The "Four Levels of Evaluation" structure of the framework is worked through systematically to promote a holistic approach to the evaluation of using PDP, the system, tools and process.

The participants in this study are a self-selecting group from a cohort of thirty-three research scientists based in eight developing countries in Sub-Saharan Africa. Eligibility for inclusion to the study was that the individual had to be returning to work in a malaria-endemic country in Sub-Saharan Africa. Three members of the group were excluded from the study (and the PDP programme) on the grounds of not meeting this criterion. Of the thirty remaining group members, six chose not to participate in the PDP programme; thus reducing the sample size to twenty four.

Ethical approval was obtained from the researcher's institution and signed informed consent (Appendix 1) was obtained from each of the participants in the study.

A variety of data collection methods and instruments were used to collect data during this research study; and these were collected from both primary and secondary sources. These included: questionnaires (Appendix 2 and Appendix 3); an interview schedule (Appendix 4); PDP monitoring schedules; Nominal Group Technique (NGT); an online Focus Group Discussion (FGD); and documentary evidence – which

included all the documentary evidence from the completed PDP documentation, communication (email, telephone and text messaging) and field notes, which were recorded during the annual monitoring and support visits to the participants' home countries.

With no previous research conducted with such a specific group, and in such a specific context, there were no "off-the-shelf" validated data collection tools available for use – so all the data collection tools for this research study were adapted specifically from validated evaluation tools. During the study, the evaluation tools underwent a process of piloting, testing and refining, in order to improve their validity and reliability and ensure their fitness-for-purpose. The research study generated a substantial amount of data, which was managed using both qualitative management software (NVIVO) and quantitative management software Statistical Packages for the Social Sciences (SPSS).

One of the approaches to analysis, that this research study used is what Sarantakos (2005, pg. 346) identifies as *"iterative qualitative analysis"* – which includes grounded theory and analytical induction. The process of grounded theory, as introduced by Glaser and Strauss (1967) is particularly looked at as an approach to analysis, in order to help build theory through a "research-then-theory" approach to analysis. Shah and Corley (2006) suggest that it is the "soft" qualitative data that is needed for theory building, and in this study, it is this "soft" qualitative data with its rich description that is used to help explain and help build theory.

Context played a major role in the analysis of the data – particularly of the qualitative data in relation to perspectives from both the researcher, in terms of reflexivity, and the participants in terms of their differing social and cultural settings.

SIGNIFICANCE OF THE STUDY

While there is a growing body of literature on PDP for employability and career development within higher education in the UK (for example, the "PDP and Employability" Series One and Two (ESECT/ Higher Education Academy, 2004; 2005), much of it relates to graduate students within the higher education system and focuses on the development of skills required by graduate employers.

That said, PDP for employability or for career management is not unique to the UK. Other literature such as introducing PDP for engineers in Oman (Goodliffe, 2004), a Canadian government initiative to invest in developing frameworks for career management skills at all levels in the educational curriculum[1] (Jarvis, 2003); the Inter/National Cohort Project involving ten universities from mainland Europe, the UK and the United States' cohort study into the use of Electronic Portfolio in PDP[2]; and the Australian ePortfolio Project (AeP) undertaken by four Australian universities[3], all demonstrate use of PDP outside of the UK.

[1] http://www.guidance-research.org/collaborate/guidance/entries/2464277445/6041765151/attach/Blueprint%20Phil%20Jarvis.pdf

[2] http://www.recordingachievement.org/international/projects.html

[3] http://www.eportfoliopractice.qut.edu.au/information/

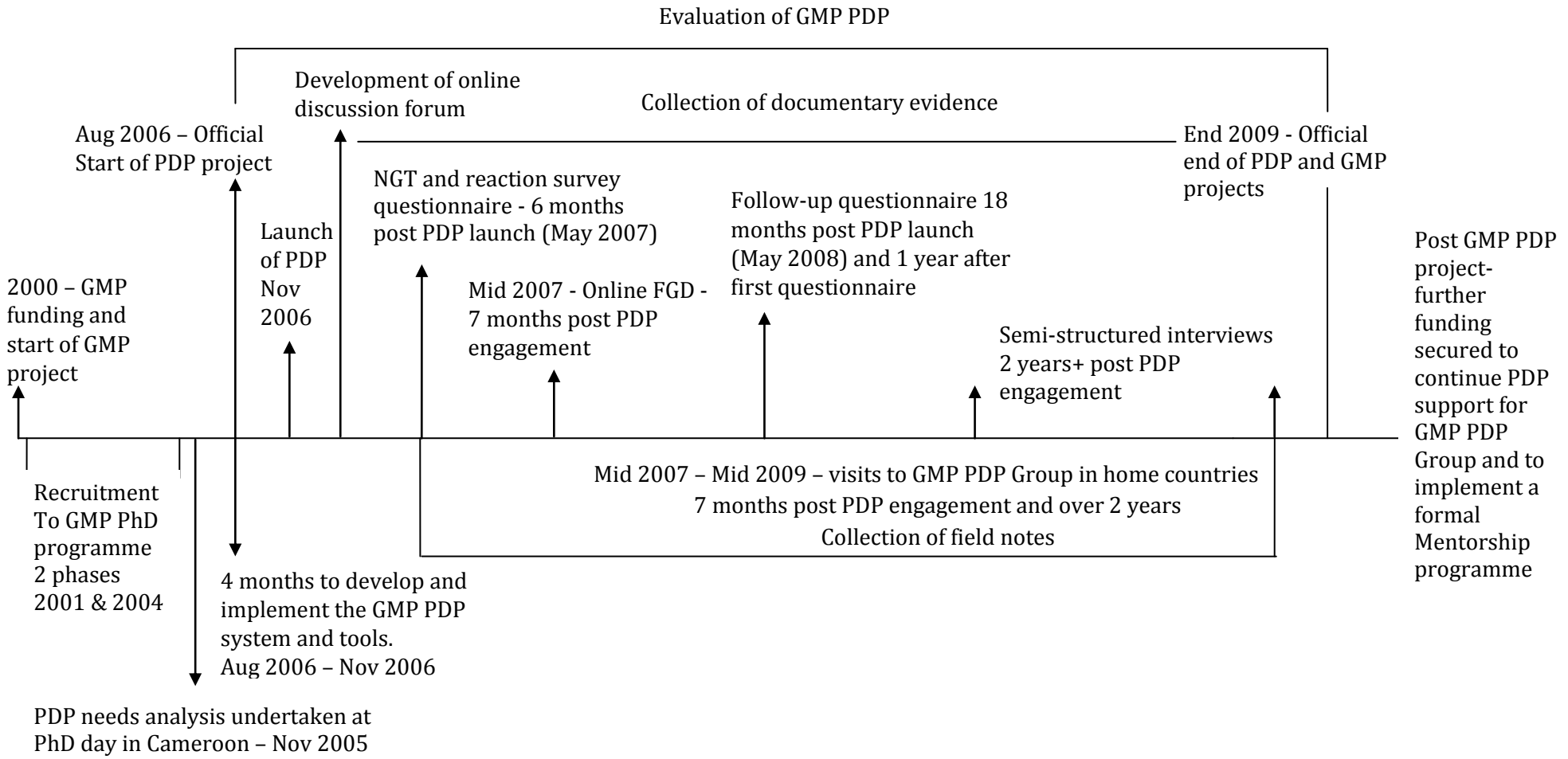
However, with the exception of the study from Oman, what these studies show is that much of the research undertaken in this area is from the perspective of a developed country. There is no published literature to show that research is being undertaken into the use of PDP as a strategy for career development with doctoral and postdoctoral researchers within developing countries in Sub-Saharan Africa. To this end, this research study aims to contribute to the body of knowledge and the evidence base of PDP for doctoral and postdoctoral research scientists in Sub-Saharan Africa.

In addition to providing an insight into the use of PDP to support career development for research scientists in a Sub-Saharan African context, the study also seeks to provide useful information to contribute to the body of practical knowledge required by the GMP, and to inform any future capacity-development projects.

TIMELINE OF THE STUDY

Figure 2, gives an overview of the key events in the PDP project, which incorporates the key events in the research study and the wider GMP project, relating to PDP.

Figure 2. Timeline of key events in the PDP project



SUMMARY OF CHAPTERS

Chapter one gives an overview of the study. It provides the background, and purpose; and includes the design and significance of the study. Chapter two reviews the literature. It explores the literature of career development and management, and relates this specifically to early-career research scientists, and to Africa. It also examines the current PDP literature, and from a UK higher education perspective, looks at definition, how it came to be framed as policy, and the debates around the emerging and developing evidence base. From the perspective of the research scientist, it looks at PDP and the support underpinning PDP for researchers. Chapter three discusses and justifies the methodology chosen to carry out the study, and in exploring the evaluation and theoretical literature, provides a rationale for the choice of frameworks used for the study evaluation. It focuses on the research design, the choice of sample and participants, and the procedures, including data collection and analysis. It also discusses the role of the researcher. Chapter four focuses on the development of the PDP system, tools and supportive infrastructure; and discusses the implementation of the system and PDP processes, and the development of individual personal development action plans. Chapter five provides an evaluation of PDP, the system, tools and processes, as seen by the participants; and uses the lessons learned to make improvements to these for future use. Chapter six evaluates the learning that has taken place by the participants as a

result of engaging with PDP, and the application to practice of any new learning. Chapter seven evaluates the extent to which PDP has helped this group of research scientists enhance and progress their career development. It also looks at how far it is feasible to implement PDP more widely with other research scientists in Africa. Chapter eight provides a summary of the study and main findings in relation to the research questions; and suggests future research studies in this area. It considers the key lessons learned and makes some recommendations for improvements in order to enhance transferability of PDP as a new initiative for use in a wider context in developing countries in Africa.

CHAPTER 2

LITERATURE REVIEW

INTRODUCTION

In the previous chapter, the overview of the research study set out the background, purpose, design and significance of the study. In this chapter, the focus is on the review and examination of the literature that is used to inform and support the research.

The context of this research project is the need to support research scientists as they begin their careers in Africa; and to contribute to the retention of this valuable resource in Africa. It also seeks to maximise the value of these researchers by setting out to promote and enhance their career development and progression within this setting. The project therefore, is concerned with Personal Development Planning (PDP) and the tools and processes within PDP that might be used to promote successful career development

The literature review, as a result involves an exploration of the origins, various usages and potential of a personal development planning approach to career development. It also focuses on ways in which the concept of PDP as a tool for learning could be applied to postdoctoral career planning. With the focus on PDP being used as a potential strategy to help achieve career advancement, the literature review also needed to address certain questions such as, what is a career. What are the

characteristics of a research career and what skills, knowledge, and career management behaviours do individuals need to have in order to build a successful research career as a scientist in Sub-Saharan Africa (SSA)? Without such an understanding, it would be difficult to develop a tool to support career planning and development for this context. The review therefore drew from the literature found within the key areas of career development. Since the area of career development yielded an extensive body of literature, the focus of the review was kept, where possible, to the areas that related specifically to research scientists, Africa, and personal development planning.

In searching the PDP literature, it became apparent that much of the expanding literature base was focused at undergraduate level; and almost all in developed countries. That said, there was an emerging literature base of PDP for doctoral and postdoctoral researchers; which came mainly from the academic community within the UK. For this reason, the study draws mostly from the experiences and development of PDP from a UK perspective.

PERSONAL DEVELOPMENT PLANNING

Definitions

An official definition of PDP is provided by the Quality Assurance Agency for Higher Education in the UK (2001) as *"a structured and supported process undertaken by an individual to reflect upon their own*

learning, performance and / or achievement and to plan for their personal, educational and career development" (pg. 2). QAA saw the aim of PDP as helping individuals to become independent, confident self-directed learners – who could relate their learning to a wider context, as well as improve general skills for career management, articulate personal goals and evaluate progress towards achievement. Within the context of the UK higher education system, QAA (2001) saw PDP as a constituent part of the Higher Education Progress File – a broader strategy comprising of: an academic transcript (information owned by the institution); Personal Development Records (information owned by the student) and PDP (a reflective process to improve own learning).

In the context of PDP for career development with these research scientists in Africa, PDP might be seen as an opportunity to use a structured and supported process to help with reflecting upon their own achievements and development, in order to confidently plan and manage their personal, professional and career development.

Challenges faced with definition and purpose of PDP

For practitioners within the UK higher education system, implementing PDP (and the progress file) proved to be fraught with complexity – much of which emanated from a lack of clarity with definition and purpose. The broad definition and aim of PDP offered

by QAA led to the concept being interpreted and conceptualised in multiple ways; which led to an emergence of a variety of models and approaches to PDP development and implementation. This was highlighted in a report on the implementation of progress files, where it reported a slow and uneven progress with the introduction of PDP; and considerable variation between and within institutions, modes of delivery, and levels of central support and encouragement for PDP (Brenan and Shah, 2003). They also concluded that much of this variation was down to the fact that there was "no common understanding about what PDP really is" (pg. 7).

Lack of a clear and common meaning of PDP was also highlighted in the systematic map and review undertaken to assess the effectiveness of PDP for improving student learning (Gough et al., 2003). The authors propose PDP to be seen more as a proxy for a number of constructs that attempts to connect and draw benefit from reflection, recording and action-planning; while Jackson (2002) similarly sees it as a generic term covering a range of different component processes undertaken in different contexts and for different aims. Clegg (2008) feels that conceptually PDP covers a range of pedagogies, intentions and practices, and therefore might be better thought of as an umbrella term for a variety of strategies to help students think about their own learning and plan for the future. Monks et al., (2006) suggest that when expressed as a set of actions and processes perhaps PDP is better understood as a generic term

rather than a specific approach; and Croot and Gedye (2006, pg. 173) – in disseminating information about PDP to their Geography students, describe it as a "whole set of processes that collectively are sometimes called Personal Development Planning (PDP)." They list all the elements and processes of the progress file (and more) as some definitions of PDP that the students might hear being used, and do a good job in helping the students to understand the differences in PDP terminology – namely, that reference to PDP is used to denote the process, but when qualified is used to denote the product – that is "a" or "the" PDP (personal development plan).

Understanding the differences in terminology and the associated challenges of PDP development and implementation was a good starting point for me, in that it helped me to focus on the process of PDP as well as the product and the development of the tools; and in addition gave me an awareness of the varying interpretations of the concept of PDP.

THEORETICAL UNDERPINNING OF PDP

PDP draws its theoretical base from education, and in particular from learning theories. The experiential learning theory developed by Kolb (1984) – which sees effective learning taking place within a four-stage cycle of: concrete experience, reflective observation, abstract conceptualisation and active experimentation – has been particularly influential in framing the development of the PDP cycle. In turn, the processes of the PDP cycle involve undertaking a self-evaluation to

identify needs for development, action planning for these needs through setting goals and targets, carrying out the action plan through undertaking PDP activities, recording the achievement, and identifying further needs for development. Central to the PDP cycle is the concept of reflection; not just the reflection-in-action and the reflection-on-action as espoused by Schön (1983) as the stages of the cycle are worked through, but also the deeper reflection that promotes meta-cognition, which results in self understanding and self knowledge.

In addition to the experiential learning theory underpinning PDP, Jackson, et. al. (2004) note that the self-regulation theory of learning, as developed by Zimmerman (2000) is increasingly consistent with the sets of activities and behaviours found within the PDP processes. Zimmerman (2000) sees self-regulation or self-regulated learning as the self-generation of thoughts, feelings and actions that are systematically designed to affect one's learning of knowledge and skills; and conceptualises it as consisting of three phases: forethought, performance control, and self-reflection. The self-directive process involved with self-regulated learning allows the individual to be proactive, rather than reactive about their PDP; an aspect that helps to achieve the aim of PDP to develop independent, confident and self-directed lifelong learners.

As an extension, PDP can also be seen to support the constructivist theory of identity formation – that is, using PDP as a means to help build the identities needed for employability. Constructivist theories of identity

formation have had a growing influence in the field of career development. The continuous reference in the PDP literature to the changing social, technological and economic changes that make for a more dynamic and complex work place (Edwards, 2005; Leitch, 2006; Holden and Hamblett, 2007; Evans, 2008) – and the emphasis in the career development literature on the need to develop the portfolio of skills, flexible know-how and adaptability, in order to increase the marketability and employability required to manage the "boundaryless" career (Arthur, 1994) – makes the need to be able to build different identities for employability even more pertinent.

It would be reasonable to suggest that PDP can be seen to support these theories, because when used to its optimum potential PDP has the capacity to change ways of thinking and habits of mind; and the role that it plays in helping individuals to develop new ways of thinking is crucial if they are to develop the means to enable fitting into the new world of career development and employability.

With learning being the major focus of PDP, and with one of its many purposes including PDP for employability and managing effective "career development learning" for employability (Watts, 2006, pg.9) - see thesis chapter 1, pg 18, for other purposes – the literature needed to review the key themes around learning and ways of learning, Some of the themes that were drawn on to inform the research included: Learning

from others in the workplace (Eraut, 2007); experiential learning (Kolb, 1984); learning styles to enhance experiential learning, (Kolb and Kolb, 2005), and reflective learning (Gibbs, 1988; Moon, 2001)

PDP EVIDENCE BASE

Debate on conceptual content of PDP

Whilst the policy guidelines were comprehensive and explicit in determining PDP definitions; outlining composition of the progress file; giving examples of transcripts; and providing a detailed framework for understanding and explaining different approaches to PDP (QAA, 2001: Appendix 2a), it was less explicit in providing a unified approach to the development and implementation of PDP. It was recognised that in offering these "different approaches" the intention was to allow HEIs the flexibility to use, and build on existing infrastructures, practices and policies within their institutions to develop and implement PDP. Jackson et al., (2004) note that policy was framed as such in order to "secure ownership and encourage implementation of PDP in diverse learning contexts" – and so that it could be "customized and implemented to suit any learning or institutional context" (pg. 3). The authors admit that such flexibility is "challenging" because it does require institutions to conceptualise and operationalise PDP in their own way. But it was the extent of this flexibility, together with a very broad definition of PDP that posed a challenge for the practitioners and implementers who had to

translate this policy into practice. It led to much interpretation and debate on practicalities such as: what was the exact purpose of PDP? Was its intention process or product? Should it be embedded into the curriculum or should it sit outside? Should the various elements be assessed – and if so, which ones? How right was it to assess the student's personal reflections? Who should provide the student with support – should this be the student's personal academic tutor or should the student have a dedicated PDP tutor— if so how was this to be resourced? These were just some of the issues debated at the time.

While some of the issues in this conceptual debate were not directly relevant to this research project (for example, embedding PDP into the curriculum or not) it was nevertheless important to have an understanding of the current debate, since I needed a simple, easy communicable approach – and the knowledge that different approaches were being used in PDP development at the time enabled me to be equally flexibility in my approach of customising and implementing a PDP programme to suit a diverse context.

Parallel research debate on implementation of PDP policy

Parallel to this debate on conceptual content was a rising academic research debate around the implementation of policy that was "constructed from practice" (Ward et al., 2005, pg. 6), "developed through a brokered, consultative process" (Jackson, 2003a, cited in

Jackson et al., 2004, pg. 2), "based on beliefs and values promoted by committed enthusiasts" (O'Connell, 2003, cited in Jackson et al., 2004, pg.18), and generally did not appear to have "a firm ontological, evidence base" (Buckley, 2008, pg.4).

Jackson et al., (2004) admit that resources, time or expertise to undertake a systematic review to search for evidence of the impact of PDP-type learning processes were not available to the policy-making agent (QAA); and further admit that from a policy maker's position, it was a "messy and inefficient approach" (pg.3). However, this was remedied in 2003 when the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) commissioned a systematic map and synthesis review of the effectiveness of PDP for improving student learning (Gough et al., 2003).

The systematic review was comprehensive, and aimed to answer two questions: what empirical research has been undertaken on the use of PDP in higher and related education? And what evidence is there that processes that connect reflection, recording, planning and action (PDP) improve student learning? This was a sizeable and much-needed piece of work, in which the researchers reported difficulties, expressed limitations but ultimately concluded that, overall it confirmed "the central policy claim that PDP supports the improvement of students' academic learning and achievement" (Gough et al., 2003, pg. 65).

Inevitably there was some criticism levelled against the review. Clegg (2005) saw the review as acting as a *"post hoc"* legitimisation of policy rather than genuinely informing it, since it was conducted post policy decision (pg. 418); and questioned whether the policy decision would have been reversed had the review produced negative results. She also had some difficulty with the research design, which was not levelled at the researchers themselves but rather at systematic review *per se* as a paradigm for gathering evidence within the social sciences. Argued also was that the researcher-manipulated PDP interventions were so diverse and culturally varied (as the studies were from a wide range of global literature) that it was not known whether the reported outcomes were produced by the same or different mechanisms, or whether interventions, for example such as reflection, were used with any consistency.

The researchers were very clear in stating that it was not possible to know how or why PDP was producing the effects reported, and acknowledged how the complexity arising from variables such as: diversity of practice, different policy-practice contexts, the stage of development of the PDP field and the heterogeneous research arising from these variables, limited the extent to which clear conclusions could be made about the usefulness of PDP in enabling learning. They also affirmed that these complexities could not be overcome with one systematic and in-depth review and synthesis, but could provide some clarity about the research evidence and its implications for policy, practice and future research. It was precisely

the use of such evidence to inform policy and practice, that Clegg (2005) found problematic; and believed that it was not the model of the relationship between evidence-base and policy that practitioners are invited to endorse.

At a more practical level, Buckley (2008) saw much of the empirical work concentrating mainly on direct approaches to PDP rather than self-directed ones, and that in restricting the synthesis to particular features such as the use of learning logs and journals, reflection, self-assessment and self-regulation, it left aspects like action planning, portfolios, self-awareness and self-motivation relatively under-researched.

The developing PDP evidence base

It is recognised that the PDP evidence base is a developing one, and is therefore necessary to welcome and value all studies that will expand the knowledge base. This is not to suggest that everything within the knowledge base will be read with the same degree of significance, or result in being used to inform policy or practice, but that the value of practitioner-led research is recognised, regardless of the shift from empirical research demonstrating causal relationships to the more "enthusiast led" descriptive studies of implementation – as observed by O'Connell (1999, cited in Jackson et al., 2004, pg. 2). At the heart of building an evidence base are the practitioners within that field; and in PDP this is actively encouraged and welcomed. In their "vision of

evidence based practice" Jackson et al., (2004, pg.3) assume that the PDP evidence base will have been developed and implemented over four or five years, and saw PDP practitioners, "whether they be teachers, staff and educational developer change agents, or policy makers" as being instrumental in this process; and that they will look to critically evaluate the evidence derived from the database of guidance in their own practice contexts, and where appropriate, integrate this knowledge into their own practice or policy.

PDP IN HIGHER EDUCATION IN THE UK

PDP is not a new concept, and has a history of being used in a variety of contexts before its shift into higher education within the UK. In the 1990s it was used in industry, business and management, to manage employee career development within organisations (Bennett, 2006; Floodgate and Nixon, 1994; Higson and Wilson, 1995; Tamkin, 1996; Tucker and Moravec, 1995).

In the UK education system, it has been in existence (in various guises) in colleges and higher education for many years. The 1990s saw initiatives such as the National Records of Achievement (NRA) in secondary schools, where school leavers reviewed, compiled and recorded their achievements and experiences to support their job search; whilst engaging in the processes served to promote lifelong learning (Assiter and Shaw, 1993; Bullock and Jamieson, 1995; Kodz

et al., 1997). At the same time the term "profiling" was being used in higher education to describe the same formative processes of "empowering students to be involved in the assessment, recording and reviewing of their own personal development and learning" (Assiter and Shaw, 1993, pg. 3). Also seen as central to this recording and reviewing is the stimulated dialogue between students and tutors – to encourage reflection (on their experience), giving and receiving feedback, diagnosing strengths and weaknesses and agreeing future learning targets and action plans.

With such similarities between recording achievement, profiling and PDP, it was not hard to see how the evolution of PDP and its processes came to be adopted as practice in higher education in the UK.

While PDP is now used extensively within the UK higher education system, it is not exclusive to the UK. The systematic map and synthesis review by Gough et al., (2003) highlighted the use of PDP, and PDP components (such as, portfolios, plans, reflective journals and logs) in a variety of educational contexts in the USA, Canada, Israel, Spain, Finland, Australia, South Africa and the Netherlands. Other PDP literature also shows the use of PDP (and PDP-type processes) being introduced in contexts outside of the UK (see thesis chapter 1, pg 18).

PDP policy in UK Higher Education

Whilst a version of PDP (in the form of profiling) was being used in higher education in the UK throughout the 1990s, it was not until recommendations made in the Dearing report in 1997, following a National Committee of Inquiry into Higher Education (NCIHE), that PDP emerged as formalised policy. The report made ninety-three recommendations, of which recommendation twenty advocated that all Higher Education Institutions (HEIs) introduce a higher education progress file – comprising of an academic transcript; personal development records; and personal development planning (PDP). Following a national consultation involving universities, students, professional bodies and employers, QAA, in conjunction with policy advisors and representative bodies in higher education, published a "Policy statement on a progress file for Higher Education"[4] in May 2001; and to help universities and colleges of higher education to develop and introduce progress files, published "Guidelines for HE progress Files"[5] later the same year. The policy guidelines also stipulated deadlines for introduction, which saw transcripts to be used by 2002/3 and students provided with the opportunity to engage in PDP by 2005/6.

[4] www.qaa.ac.uk/academicinfrastructure/progressFiles/archive/policystatement/default.asp

[5] www.qaa.ac.uk/academicinfrastructure/progressFiles/guidelines/progfile2001.asp

PDP FOR RESEARCH SCIENTISTS IN THE UK

In order to develop a PDP programme and system for a group of research scientists in Sub-Saharan Africa, I needed to have an understanding of how PDP for research scientists worked. In searching the literature it became evident that development of PDP for individuals at postgraduate and postdoctoral level was much further advanced in the UK than elsewhere, so for this reason much of the focus of the literature relating to the development and support for PDP is drawn from within the academic community in the UK.

The use of PDP for students in higher education in the UK was formalised as policy in 2001, when the QAA, following recommendations made in a National Committee of Inquiry into Higher Education (NCIHE; 1997) stipulated that all students within higher education in the UK be provided with the opportunity to engage in PDP by 2005/6.

For postgraduate research students this opportunity was additionally formalised following recommendations from two further influential reports. One was the 2002 report for the funding councils in the UK on *"Improving Standards for Research Degree Programmes"* (Metcalfe et al., 2002), and the other was a review into the supply of science, technology and mathematics by Sir Gareth Roberts (2002), and entitled "SET for Success." The recommendations made in the *"Improving Standards for Research Degree Programmes"* report saw

the development and embedding of threshold standards (built on existing good practice within the sector) into section 1 of the QAA Code of Practice for Research Degree Programmes. In the revised code of practice, precept 20 relates to PDP, and states that *"institutions will provide opportunities for research students to maintain a record of personal progress, which may include reference to the development of research and other skills"* (QAA, 2004, pg.21).

The "skills agenda" for postgraduate researchers

The Roberts' review went further, in that it was somewhat prescriptive in its recommendations that *"... major funders of PhD students make all funding conditional upon students' training meeting stringent minimum standards"* – and that these minimum standards *"...should include the provision of at least two weeks of dedicated training a year, principally in transferable skills..."* (Roberts, 2002, pg: 11).

Whilst there was an overall positive response to the challenge of introducing transferable skills training at postgraduate research level (through government funding, the setting up of support systems, new policy guidelines and the compilation of a skills set) – in academia and at the level of delivery, the response was more divided. Hinchcliffe (2007, pg. 9) proposes time pressure, a distrust of the generic skills vocabulary, and not the job of the university to train research graduates, as some of the main issues that make transferable

or generic skills training a contested area for some academics; and puts its antipathy by some academics as down to the current structural changes within higher education in the UK, which facilitates the rising of student numbers. In addition he also sees the fact that the skills training largely takes place outside of the student / supervisor relationship and therefore supervisors are required to adopt new practices that they have no experience of. Reeves (2007) picks up this point and offers the view that the skills training agenda not only challenges the substantive experience of doing a PhD but that it also presents an epistemic challenge that requires a conceptual shift in the way the process is viewed and supported. She argues that the PhD experience should result in a portfolio of skills for life, not simply a hard-bound manuscript that sits in a library.

For postdoctoral researchers, the "Set for Success review" (Roberts, 2002) recognised that this was a crucial phase in a researcher's career; a time in which they could make a name for themselves through ground-breaking, innovative research, and develop the skills to lead research projects. It believed that *"...enabling the individual to establish a clear career path and a development plan to take them along it are critical to improving the attractiveness of postdoctoral research"* (pg: 13).

Even though the review was in the context of postdoctoral contract researchers in UK institutions, the observations and recommendations

of ensuring that all postdoctoral researchers are given the opportunity to develop individual career paths reflecting the different research career destinations open to them, could be generalised to all researchers at this stage of their career. For the group of African postdoctoral researchers in this study, the point of *"improving the attractiveness of postdoctoral research"* is a particularly salient one, if they are to feel motivated about staying in their chosen field of research for the benefit of the population in their home countries; and for the benefit of themselves in terms of their career development, satisfaction and opportunity for success.

The Joint Skills Statement

The skills set that was used to guide the development of transferrable skills was devised by the UK Research Councils and the Arts and Humanities Research Board (AHRB), (RCUK, 2001). The "Joint Skills Statement" (Appendix 6) comprising of seven areas of skills and competencies was the skills set that the AHRB expected all research council funded postgraduate researchers to develop as part of their doctoral process. It is currently used as the gold standard for all postgraduate research students and the basis for all skills development training programmes; and in this PDP programme with researcher scientists based in SSA, as a means for guiding the development of their individual Personal Development Actions Plans (PDAPs).

The "Research Career Builder" for postdoctoral researchers

A career management system, focusing on longer-term career planning through the development of personal and professional skills, was developed to help support contract researchers and their managers. Funded by the Higher Education Funding Council (HEFC) and jointly led by three UK universities (Sheffield, Manchester, and Loughborough) and in partnership with 14 other UK universities, a "Research Career Builder" was developed specifically for contract researchers within UK institutions (CRS, Good Management Practice, 2000). Elements of this career management system were used in the development of the PDP system for the African career researchers in this research project.

Supporting PDP for researchers

While the UK QAA Code of Practice supported the use of PDP at doctoral level, postdoctoral career development was supported by an agreement between the funders and employers of researchers in the UK. "The Concordat to Support the Career Development of Researchers" – which incorporated the framework and practices from the European Charter for Researchers devised by the European Commission in 2005 – was launched in June 2008, and comprises of seven key principles, which set out the expectations and responsibilities of researchers, their managers, employers and funders. Two of these principles relate to PDP. Principle four outlines the importance of the researcher's personal and career development, and lifelong learning being recognised and promoted

at all stages of their career (pg. 11), and the focus of principle five is from the perspective of the individual, and emphasises the sharing of responsibility for, and need to be pro-actively engaged in own personal and career development and lifelong learning (pg. 12).

Despite the on-going and healthy debate around generic skills training for postgraduate researchers and the changing PhD process, PDP policy makers saw the recommendations within these reports as ensuring that researchers have access to training and development appropriate to their individual needs; and saw PDP as key to realising the ethos espoused within these reviews. While using PDP for this group of African doctoral and postdoctoral researchers did not have the same weight of policy or political drivers behind it, the principle of PDP providing access to development based on individual need for self improvement was a sufficient driving force to explore using it as a tool for career development with this group in Africa.

THE ROLE OF PDP IN CAREER DEVELOPMENT

Careers and career models

Careers within developing countries have seen a shift from a succession of related jobs arranged in a hierarchy of prestige that people work through in an ordered sequence (Wilensky, 1961, cited in Baruch, 2006), to the focus placed on the individual and their work-related experiences" over the span of their "work life" (Hall, 1987, pg.1; Arthur and Rousseau,

1996), to extending beyond a working life as it forms "a unique pattern over the individual's life span" (Sullivan and Baruch,2009, pg. 1543). As a result of these shifts, and changes such as increased globalisation, rapid technological advances and increased diversity within the workplace and the workforce (part-time, temporary employees and people working for themselves) attitudes and behaviours towards career and models of careers have changed (Sullivan and Baruch, 2009).

Dominant in the literature of career management and development is the "boundaryless" career model, as seen by Arthur (1994). The thinking within this model is a move away from the traditional linear career model that typically took place within a single organisation (Hall and Mirvis, 1995; McDonald et al., 2005; Sullivan and Baruch, 2009) to a model that sees the career transcending the boundary of a single path, occupation and employer. At the core of this "boundaryless" career model is career independence.

Also found within the literature, is the "protean" career model – which is proactively managed proactively by individuals, according to their own values (Sargent and Domberger, 2007), has the individual (rather than the organisation) taking responsibility for transforming their own career path (Hall and Mirvis, 1995); and the psychological focus rather than material success as being the main goal of a protean careerist (Hall, 2002, cited in Sullivan and Baruch, 2009).

While these two career models appear similar, the concepts are viewed in a variety of ways – as complementary (Inkson, 2006); distinct but overlapping (Briscoe and Hall, 2006) or as two distinct constructs.

Career models and research scientists

Baruch and Hall (2004) argue that the scientific research career is typical of the modern "boundaryless" career model, in that there are some distinct features that support this career model. For example, a professional basis, multi-directional career paths, a high degree of lateral movement across organisational boundaries, and a strong dependency on network. This observation is supported by the reality that the career development of a scientific researcher is reliant on at least some of these features – and particularly on the strong dependency on network – as seen later in the research where some of the researchers in the study identify networking with other researchers a skill that is needed to help them with their career development.

While the "boundaryless" career model can be seen to typify the career model of the career researcher, Sommerlund and Boutaiba (2007) found in their research study with scientists in a molecular biology laboratory in Denmark that, rather than the "boundaryless" career replacing the traditional career model, the career of these research scientists were supported by a mix of the "old" traditional career models (pre-"boundaryless" and "protean"), the "bordered" and the "boundaryless"

career models – thus supporting the assertion that (in some organisations at least) traditional career models do still exist (Guest and McKenzie-Davey, 1996; Reitman and Schneer, 2003), are still valued (King, 2006), can exist alongside each other, and be supported within the same organisation (McDonald, Brown and Bradley (2005).

This finding is also supported within this research study of the African research scientists based in SSA, where some of these research scientists manage what Sullivan and Baruch (2009) refer to as a "hybrid" career model – which contain aspects of both the traditional and "protean" or "boundaryless" career concepts. For example, the African researchers who have positions (and aspects of a traditional career) within a university, their National Health Services, or national research institutions, whilst still having some aspects of protean and boundaryless careers through proactively managing independent research with employers outside of their organisation.

Career management and early-career researchers

Despite the "boundaryless" career having a place within a career research pathway, and the model that most fits the economic necessity of the changing workplace, Zeitz et al., (2009) point out that, in order for an individual to have a successful boundaryless career, there are required needs for certain management behaviours, attitudes and support.

Baruch (2006) suggests that if people are to thrive in a "boundaryless" career world, they need to become "masters of their own destiny, and thus managers of their own careers" (pg. 127); and to achieve this they need to acquire career resilience – something that Kidd and Green (2004) see as linked to work-place autonomy. In addition to resilience and adaptability, proactivity is seen as a major element needed for career development within this model. Proactive traits in this context are cited as: personal initiative; need for achievement; internal locus of control; autonomy and extroversion (cited in Zeitz et al., 2009); and with self-esteem and self-efficacy also seen as important (Crant, 2000).

However, it should be noted that for an early-career researcher, while they might have some autonomy and independence in the way they work, they may not necessarily possess the proactive traits and behaviours that are needed to manage a successful "boundaryless" career.
Applying a "protean" career approach (proactively managing one's career according to own values) is put forward as a suggestion to help promote success within a "boundaryless" career model (Baruch, 2006). However, the self-directed behaviour of the protean career model (Baruch and Hall, 2004) and the associated characteristics of self-confidence, assertiveness, perseverance, and the tendency to self-rate and self-promote (McDonald et al., 2005) might also be seen as challenges for the early-career researcher. Not only might the early career researcher not necessarily

possess these skills and behaviours at this stage of their research careers, but they are also at the stage of their careers where there is still the need for significant dependence on others to help with their career progression – which could have an effect on the rate in which the much needed skills, such as self-confidence and self-promotion are developed.

In addition, Seibert, Kraimer and Crant, (2001) see a proactive person as one who has a disposition to take personal initiative and is relatively unconstrained by situational forces. This presents a problem for the early-career researcher (particularly but not exclusively) in Africa, whose situational forces are often beyond their control, and have a greater influence on their career.

CAREER DEVELOPMENT FOR EARLY-CAREER RESEARCHERS

Harle (2009) sees the early careers for researchers as being marked by two distinct phases: the PhD and the early postdoctoral career. Laudel and Glaser (2008) indeed see the transition to independent researcher as starting with a successful PhD topic which is expanded and supplemented by new topics; and Bazeley (2003) sees completing high-level research training as one of the key steps to becoming an independent researcher. However, in drawing from the career development literature for researchers, it would seem that there is no single route, or clearly defined career pathway to becoming a recognised and independent researcher; and the phase from PhD to the early postdoctoral career is the one that appears particularly challenging. Simmonds and Unger (1980) describe

an ideal society where researchers could anticipate progression through an established career; and in an atmosphere of security instead of being reliant of short-term grants, and wasting incalculable hours submitting grant application after grant application.

In the case of biomedical scientists in the UK, Kidd and Green (2004) see the employment route, and the three primary sectors (the academic, charity/research council, and pharmaceutical) as the principal means to support the early career researcher. For physician-researchers, Bakken et al., (2006) describe a dual career choice – that is, beginning their career as a clinician, then going on to develop an interest in a research career pathway. These are met through a variety of ways, including gaining an academic position and balancing this with clinical work and clinical research.

For early-career researchers based in academia, Bazeley (2003) offers no single path for an academic-researcher en route to becoming an established researcher; but she does see a sequence of steps, including: completing high-level research training and obtaining an academic appointment.

While the focus of the literature here is on the career development for early-career researchers in developing countries, the principles of career development for the early-career researcher in Africa (and elsewhere) are much the same. The transition from early-career researcher to independent researcher via no single route or clearly defined pathway is

universal for early-career researchers globally. The only difference for the career-researcher in Africa and other developing countries might be the lack of similar opportunity afforded to their counterparts in developed countries.

Challenges for early-career researchers

There are many challenges faced by the early-career researcher as they navigate their path from PhD to early postdoctoral career. One of the biggest is securing the funding to continue with their research career. Bazeley (2003) points out how the new investigators who, as yet unknown in their research community and without an established track record of attracting funding, are still having to compete for funding in an arena with established researchers. Yet, if they are to realise their full potential and achieve their goal of becoming recognised and independent researchers, they must compete and spend hours submitting grant applications. In addition, Kidd and Green (2004) point out how fragmented the funding structures have become in biomedical science in the UK – which also has an impact on the goals of career research scientists in this field, with many not committing to stay in research.
For early-career researchers, the chances of securing funding are often increased with being part of a research collaboration – and for the African early-career researcher, with the scientific research tradition that is well established in the industrialised countries in the north but still being developed in the developing countries in the south (Nchinda, 2002), the

research collaboration for funding often necessitates the inclusion of a research partner based in a developed country in the north.

Laudel and Glaser (2008) see the challenge of collaboration for funding as creating pressure for early-career researchers to adapt the research to the preferences of senior researchers, collaborating partners and funding agencies. However, while this is seen as a challenge for early-career researchers, it should be noted that directives in application for funding is a challenge that is faced by most researchers. Dillon (2003) notes how the rigid and hierarchical structures in most European academic organisations and funding agencies do little to foster intellectual independence amongst young researchers.

Finding employment to support a research career is another challenge faced by early-career researchers. Bazeley (2003, pg. 264) described how the researchers in her study, in search of academic appointments complained of having to "continually move from institution to institution on contracts lasting one year or less" – and how this impacted on their ability to apply for research grants. Kidd and Green (2004) also show how fixed-term contracts for UK-based biomedical early-career researchers (of three years duration or less) led to concerns of damaging scientists' careers, creating wastage of effort and skill, promoting personal insecurity and contributing to an exploitative employment system which undermines career development and commitment.

Marnie, Chantal and Davorin (2009, pg. 11) illustrate how in a study of career pathways of science, engineering and technology, research postgraduates in Australia found themselves caught up in the "postdoc treadmill", unable to find long-term employment, and with some of them finding themselves either out of work or working out of their field of expertise.

The challenges faced by the early-career researcher to attain academic or research-related employment is something that is particularly pertinent in Sub-Saharan Africa. Little movement within academia, and challenges in finding employment or an institution in which to situate research projects, is seen as one of the challenges facing the early-career researcher.

Support for early-career researchers

The need to support early-career researchers is something that is being recognised constantly. For European postdoctoral researchers, Dillon (2003) reports how the European Union Fixed-Term Contract Directive (EU, 1999) was implemented to prevent abuse of using fixed-term contracts – for example, using successive contracts to avoid permanency. He discusses the use of scientific career structures such as, a postdoctoral system that promotes mobility in the early part of the researcher's career followed by tenure-track appointments; and the creation of an additional grade of permanent researcher below the level of principal investigator to alleviate the bottleneck.

From a UK perspective of postdoctoral researchers based in academia, the "SET for Success" report (Roberts, 2002) recommended the move to longer-term "research staff" status from short-term "contract researcher" status. This report also recommended the introduction of skills training for PhD researchers – to help promote the high-level research training that Bazeley (2003) sees as one of the key steps to becoming an independent researcher; in addition to help build the skills, knowledge and confidence that the early-career researcher needs in order to progress their career.

Fellowship awards aimed at early researchers are another way of helping to support the early-career researcher. Bazeley (2003) describes a funding scheme initiated by the Australian Research Council (ARC) to support early-career researchers build a career in academic research, while awards from the United States include awards from the National Institutes of Health (NIH), and the Careers Award in the Biomedical Sciences (CABS) from the Burroughs Wellcome Fund – which provides career development support for the transition from postdoctoral training to a faculty position. In the UK, the Wellcome Trust offers awards and studentships for early-career researchers; and includes intermediate fellowships (for promising researchers wishing to develop research independence) and postdoctoral fellowships for African career researchers in biomedical sciences and tropical medicine, from low and middle income countries. TDR – the Special Programme for Research

and Training in Tropical Diseases, supported by the World Health Organization (WHO) also provides awards to help with the academic and career development for postdoctoral researchers in Africa. Other postdoctoral awards also include fellowship awards as part of donor-funded projects, such as the aforementioned Gates Malaria Partnership (GMP) re-entry grant programme – which is designed to support early-career researchers in Sub-Saharan Africa.

This provision of grants by funding bodies to support early-career researchers on career entry reflects recognition by these organisations that researchers (especially when returning to a developing country) need support if they are to develop successful careers. However, financial support alone may not be sufficient, or as effective in this complex arena, where certain skills may also be required, in order to help with networking, developing mastery of own destiny, and navigating a boundaryless or hybrid career – perhaps within traditional, hierarchical settings. Additional support may be required to help the early-career researcher learn some of these skills; and in this research study Personal Development Planning (PDP) is explored as one approach to provide a group of early-career researchers in Africa with the additional support needed to help progress their career development.

DEVELOPING PDP FOR A SUB-SAHARAN AFRICAN CONTEXT

Although the literature highlighted some use of PDP in South Africa (Gough et al., 2003), I was unable to find any published literature on the use of PDP in developing countries in Sub-Saharan Africa. This, together with the flexible approach to PDP – that allows development to be tailor-made to suit the needs of the intended group (Jackson, 2004; Clegg and Bradley, 2006) – worked to an advantage when looking at PDP for a Sub-Saharan African context. From a UK higher education perspective, PDP can be seen to sit firmly within the agenda for employability, and was introduced as sector-wide policy in response to a recommendation in a government report for the need to improve investment in education to *"develop our greatest resource, our people"* (Dearing, 1997: para. 1.2). The ideology behind this concept of developing people was to promote a way of learning that would, not only encourage individuals to engage in reflection, but also furnish them with the tools (the progress file and PDP) and means (education) to become committed lifelong learners – which in turn would promote personal enrichment, and at the same time fulfil the needs of an economic imperative. Jackson (2005) notes what an interesting development PDP is, in that it combines an ideology that values certain types of ways of learning for the purpose of enhancing the economy; with the educational belief that being able to learn from structured reflection and act on this personal knowledge, is a good thing for both individuals and society.

It could be argued that while, *"developing our greatest resource, our people"* is an ideology that fitted with the needs of the UK economic imperative at the time, it is also an ideology that could fit generally in developing countries in Sub-Saharan Africa, and certainly within the context of this research study that uses a strategy (PDP) to help with the capacity development of individuals.

Developing PDP for research scientists in Africa

The most essential element to developing a PDP programme and system for this group of research scientists in Africa was to ensure that the system was simple and easy to use, and that the programme met the needs of the group. To facilitate this, a wide range of literature from across several domains was reviewed to help inform the development of the PDP processes and tools. The review drew particularly on the growing literature and information found in the repositories of the Higher Education Academy, Vitae (formerly UKGrad) and the Centre for Recording Achievement (CRA) websites), PDP for General Practitioners (Rughani, 2000), and the "Research Career Builder" designed for research staff based in institutions in the UK, (CRS: Good Management Practice, 2000). For the more specific elements relating to the design of the tools and processes, lessons were learned and adopted from previous projects, both nationally and internationally – and in particular, the ideas from the work of Floodgate and Nixon (1994) in keeping the design

simple but ensuring that it is tailor made to the needs of the users. The information gained from the work of Stevenson (2006) and Strivens (2006) into the use of personal tutoring and the role of the personal tutor helped with the development of the role and responsibilities of the PDP advisor for supporting this group of African research scientists with their PDP.

Implementing PDP in a SSA context

Implementing PDP is not without its challenges – and with one of the main challenges associated with promoting and maintaining user engagement with the process. The work undertaken by Quinton and Smallbone (2008) into the issues of implementing PDP in English universities highlights the difficulties in motivating users; and the more practical issues of time constraints is discussed by Turner (2007) and Jelfs and Kelly (2007). These challenges associated with promoting and maintaining user engagement with PDP are not dissimilar to the challenges experienced when implementing PDP in a SSA context; and with the similar practical issues of time constraints faced by users in SSA, as discussed later in the evaluation chapters in the thesis.

The literature that was used to help explain PDP user engagement in this PDP research project, was the theory of Rogers' (1995) diffusion of innovations; and in particular the idea that the adoption of an innovation is dependent on certain characteristics and features intrinsic to both the

adopter and the innovation. These he sees as: simplicity (of the innovation), trialability, observability, relative advantage and compatibility. Rogers also proposes a typology that characterises the rate of adoption; which he names as: innovators, early adopters, early majority, late majority and laggards. The thesis uses the research data to help explain some of the patterns of PDP engagement with this participant group of PDP users in Africa.

While there is some similarity in the challenges associated with promoting and maintaining user engagement across settings, there are some challenges that are particular to this group of PDP users in SSA. These include the aforementioned in the thesis chapter 1 (pg. 14), and others such as geographical location and the challenges associated with providing remote support, as discussed further in the evaluation chapters of the thesis.

However, one of the challenges particular to PDP users in SSA and not faced in developed countries is the local availability of good learning resources in order to help them meet their PDP needs. The discussion in the thesis shows how these African PDP users innovatively use what is available within their setting (for example, using experts as consultants to work with them on a one-to-one basis) to meet their PDP needs.

Support is one of the major features of PDP, and the use of technology as well as the people aspect is seen as significant aspects of PDP (Quinton and Smallbone, 2007; Stevenson, 2008; Strivens, 2008). In this research project, technology in the form of electronic media (email) – particularly to help the group with developing their individual PD action plans – and an electronic discussion forum (used to help bridge the geographical spread of the users) was used as a key feature of support. The literature used to help inform the project in developing, implementing and managing an electronic forum was mainly from researchers in the domains of professional development, online learning and marketing (An et al., 2009; De Smet et al., 2009; Chen et al., 2009; Chen and Wang, 2009; Lee and Bertera, 2007; Lewinson, 2005; Pitta and Fowler, 2005; Wolff, 2009).

SUMMARY

This chapter reviewed the literature used to inform the research study. It explored the PDP literature, and looked specifically at PDP definitions and the development and implementation challenges associated with the lack of clarity in definition and purpose; and from a UK perspective, how it came to be framed, and where it sits in higher education policy today. It also looked at the theoretical underpinning of PDP and the emerging and developing evidence base for PDP, including the current debates

surrounding this. From the perspective of the research scientist, it looked at PDP and the provision of support for researchers.

The review also examined the careers literature, and discussed the career development for researchers and the support needed to help early-career researchers with their career entry and continuing development – and proposes PDP as a possible strategy to help with this for a specific group of African early-career researchers.

It also reviewed the literature that helped to inform the development, implementation and management of the PDP processes and support systems, in addition to the literature that helped to explain and manage some of the challenges faced with developing and implementing PDP in a sub-Saharan African setting.

In the next chapter, consideration will be given to the methodology chosen to conduct the research study; and provides a rationale for the choice of frameworks used for the study evaluation.

CHAPTER 3

METHODOLOGY

INTRODUCTION

The preceding chapter proposed the use of Personal Development Planning (PDP) as a strategy to help a cohort of African early-career researchers with their career entry and continuing development. To this end, a PDP system and associated tools were developed specifically for this purpose. The study used the experiences of these research scientists (known as the GMP PDP Group) to evaluate the system, tools and processes; and from lessons learned, to develop a transferable PDP system and tools that might be used in future with other research scientists based in these and other developing countries in Africa.

In this chapter, attention is turned to a consideration of the methodologies that lend themselves to a study that is both an intervention and a tool development project. It presents the theoretical approaches used to frame the study; and makes some justification for the choice of framework used to conduct the research evaluation. It provides an outline of the research design; and discusses the research procedures, including a description of the participants involved in the research, along with the instruments used to collect the research data, and the methods used to analyse the data. It also includes a discussion on the role of the researcher in the research process, and the limitations of the study.

THEORETICAL APPROACH

Action Research

The study used an Action Research approach, and drew on its key features to frame its methodologies. The term Action Research appears to have a broad range of definitions. McNiffe and Whitehead (2006) see it as a form of enquiry that enables practitioners to investigate and evaluate their work, while Somekh (2005) sees it as a methodology that is broadly defined and takes widely different forms, and Reason and Bradbury (2001) see it as a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes.

However defined in the literature, the common theme to emerge is that it is a collaborative and participatory process, which has a democratic ethos, and people at the heart of the process (McNiff and Whitehead, 2000, pg 198). In addition, Hammersley (2004) proposes that despite diverse types of Action Research which vary across several dimensions its core feature is an intimate relationship between research and some form of practical or political activity, from which inquiry arises out of and results feed back into.

This research study could not have been undertaken without actively engaging the participants in this "democratizing social inquiry" that Whitehead (2005, pg. 523) sees as essential, since it involves the use of a change-experiment with real people and their own problems and barriers unique to their own social, political and cultural situations. A

participative approach was also vital, not only to gain first-hand experience from the users, in order to refine and improve the PDP tools and processes for future use, but also for me (as the researcher) to gain a more in-depth understanding of the participants' experiences of engaging with PDP, and for the participants to gain a better understanding of the concept and value of PDP.

The study incorporated practices from what Cassell and Johnson (2006, pg 784) term "Inductive Action Research Practices" – which inductively accesses research participants in their natural contexts, and uses interpretive understanding *(verstehen)* rather than explaining causal relationships *(eklärken)* as the theoretical imperative. In line with this approach, predominantly qualitative methods of data collection were used to produce a form of grounded theory (Glaser and Strauss, 1967) which guided subsequent interventions. The focus of the evaluation was on deepening understanding of a complex research situation, so that actions might be better informed, rather than focusing on specific findings or outcomes. It helped to generate what Elliott calls "practical wisdom" and "situational understanding" (1991; 1993, cited in Somekh, 1995). Therefore the study used a theoretical approach of interpretive understanding, and incorporated features from Action Research, since it was considered a good fit for the research "problem" – and easily integrated the six underlying principles of Action Research (Bradbury and Reason, 2003).

1) Grounded in lived experience
2) Developed in partnership
3) Addressing significant problems
4) Working with, rather than simply studying, people
5) Developing new ways of seeing/theorizing the world
6) Leaving infrastructure in its wake

In this study, the research was grounded in lived experience (as it took place in real situations and contexts and with real people), and helped to address a significant problem (of helping African research scientists progress their career development), by working closely with them rather than studying them. It left infrastructure in its wake, in that not only did it aim to leave the participants with a better understanding of themselves and their situations, as a result of engaging with PDP, but it also developed a PDP system that could be replicated for use with similar individuals in similar settings. This infrastructure particularly was developed in partnership, since it was the experiences of the participants working closely with PDP that helped to refine and improve it for future use.

Criticism of Action Research

Action Research does not come without criticism, with the main one being that, like other dynamically objective approaches, it is harder to generalise than traditional quantitative work, and therefore requires more rigorous standards of validity, reliability, and trustworthiness (Bradbury

and Reason, 2003; Erlandson et al., 1993; Miles and Huberman, 1994). As in all interpretative research – and Gummesson (2003) argues that all research is interpretative – the validity, reliability and trustworthiness of the research is addressed within the research processes. In this research study, the issues of validity, reliability and trustworthiness were addressed by ensuring transparency and quality through including processes such as: triangulation of the data, iterative stages of piloting and refining the research tools and processes, in order to improve their rigor and reliability, and using external scrutiny, in the form of my supervisors, to promote objectivity.

Epistemological shifts in Action Research

Action Research has undergone many epistemological shifts and changes since its inception by Lewin in the 1940s, to help achieve democratic inquiry within the social sciences. This debate has also expanded greatly since its shift into educational research in the USA, and later in the UK in the 1970s, where teachers applied scientific method to solve classroom problems, and where the concept (devised by Stenhouse in the 1970s) of the teacher as researcher to improve educational practice, was promoted. This is outlined in some of the work of, Dickens and Watkins, 1990; Somekh, 1995; Cassell and Johnson, 2006. Often it is this shift that prompts criticism. Cassell and Johnson (2006) give a good outline of the diversity in characteristics and practices of Action Research over the

years; and indeed show how it is now used for numerous purposes, including as appreciative inquiry to build upon organisational success rather than ameliorate problems. As previously cited, Somekh (2005) sees it as a methodology that is broadly defined and takes widely different forms, and Reason and Bradbury (2001, pg. xxiv) talk of an Action Research *"family"*, which includes a wide range of methodologies, grounded in different traditions, and which in turn expresses competing philosophical assumptions. However, throughout this change and diversity, what has remained constant and distinctive about Action Research (regardless of the philosophical tradition it is grounded in) is that the approach uses iterative cycles of improvement to *"produce practical knowledge that is useful to people in the everyday conduct of their lives"* Reason and Bradbury (2001, pg.2).

RESEARCH PARADIGMS

In all research inquiry, it is the relationship between the purpose of the research and the nature of the evidence required that will determine the methods employed – or as Walji (2009) puts it, it is the contextual realities that inform paradigmatic choice, and in turn determine research methodologies. This main aim of the research study was to capture the experiences of the participants as they explored and used the PDP system and processes. It was this exploratory and inductive nature of the study that lent itself to an interpretive, naturalistic approach, and therefore

conducted within a predominantly qualitative paradigm. However, despite the exploratory nature of the inquiry lending itself heavily to a qualitative approach, the study also drew on perspectives and methodologies from the quantitative paradigm; in order to benefit from the combined strengths of both approaches and help gain a more rounded and deeper understanding of the value of using PDP for this specific group, and within their specific context. It also used this integrated approach, as Patton (1990) suggests, as a means of triangulation, in order to help strengthen the research design.

An integrated approach

While the independent value of both qualitative and quantitative perspectives is recognised, and it could be argued that in certain research inquiry the use of quantitative or qualitative methods on their own might be sufficient to explain the results of the phenomenon being investigated, the benefits of drawing insights from both traditions is becoming more established within the literature (Black, 2002; Shah and Corley, 2006; Denscombe, 2007; Ivankova et al., 2006; Creswell and Tashakkori, 2007). In using an integrated approach, Black, (2002, pg. 3) indeed suggests that the two paradigms complement each other rather than compete, and that *"it often takes both to answer a good question comprehensively"* – while Creswell and Plano Clark (2007) argue that it

facilitates a more comprehensive understanding of the research problem than either approach acting alone allows.

Mixed-methods research

Increasingly, mixed-methods research – using both qualitative and quantitative approaches to explain and explore social phenomena – is being referred to as a third methodology, alongside qualitative and quantitative approaches (Bryman, 2006; Greene, 2008; Tashakkori and Creswell, 2008). The debate about how the approaches should be utilised within a mixed-method study is identified as authors put forward proposals of cross-paradigm working. Seen as a distinct paradigm that differs in both function and form, Hall and Howard (2008) propose a typology or systematic approach to planning and carrying out mixed-method studies. The typology approach focuses on elements such as amount, timing and order in which both sets of data are mixed, while the systemic approach (based on systems theory) is an interactive relationship between both approaches across the dimensions of the research process. In contrast, Creswell et al., (2003) propose a "mixed-method sequential explanatory design" – in which the design, in two distinct phases, collects and analyses all the quantitative data in the first sequence and the qualitative data in the second. Their rationale for this approach is that the quantitative data analysis provides the general understanding of the research problem, while the qualitative analysis refines and explains the statistical results by exploring the participants' views in more depth.

While this research study took into consideration the mixed-methods debate, it did not see its design as fitting particularly into a third paradigm, but rather as a cross-paradigm approach that strove to utilise the strengths from both approaches to best fit the needs of the research. The data were collected and analysed concurrently, for the simple reason that the research aimed to optimise the benefit from both sets of data (quantitative and qualitative), in order to refine and improve the PDP systems and processes as the research progressed. In addition, the geographical location of the participants in this study (based in eight different countries in SSA) would have made returning to collect any further (face-to-face) data, as suggested in the model in Creswell, et al., (2003), a little problematic.

EVALUATION FRAMEWORK

To facilitate this investigation, the study used an adapted version of an evaluation framework devised originally in 1971 by Kirkpatrick (2005) to undertake both formative and summative evaluations. A search of the literature generated various models for evaluation, but the two that most closely met the needs for the research were, the four-stage evaluation model devised by Stufflebeam (1989) and the "Four Levels of Evaluation" devised by Kirkpatrick (2005). Both frameworks were devised to evaluate training programmes but while Stufflebeam's Context, Input, Process and Product (CIPP) model evaluates each level

individually, and takes into consideration a pre-programme context stage, Kirkpatrick's model, with each level evaluated progressively, allowed for a more flexible adaptation, and it made a better fit for the needs of this research study. The framework was further adapted to help gain the broader and more holistic information from the participants, which was needed in order to develop a more refined PDP system and tools; in addition to helping them get the optimum benefit from the PDP process. The research study was also informed by the work of Baume (2007) and Peters (2007) – who, as part of a UK-wide National Action Research Network project involving sixteen institutions researching and evaluating PDP perspectives – developed a "PDP Toolkit" incorporating guidelines and tools for evaluating PDP ventures. Although the work from these two authors was published after the evaluation framework was adapted, it still helped, in that they were the first pieces of published work that provided practical information and tools to PDP evaluation; and were helpful with re-evaluating and verifying whether the elements chosen within this PDP programme to evaluate were the right ones to include in the evaluation.

Table 2, shows how Kirkpatrick's "Four Levels of Evaluation" (2005) was adapted to meet the needs of this research study. The un-shaded areas are the level descriptors that Kirkpatrick's framework uses; and the shaded areas show how the level descriptors were adapted, in order to facilitate the study evaluation.

Table 2

Evaluation framework – adapted from "Four Levels of Evaluation" Kirkpatrick (2005)

Levels	Level descriptors
Level 1 Reaction	*How participants react to the training program or initiative*
	How do the group feel about using PDP, the system, tools and processes?
Level 2 Learning	*The extent to which participants change attitudes, improve knowledge and/or increase skills as a result of attending the training program*
	Have there been any learning gains as a result of engaging with PDP?
Level 3 Behaviour	*The extent to which change in behavior has occurred as a result of attending the training program*
	Have any learning gains (as a result of using PDP) been applied in practice?
Level 4 Results	*The final result(s) that has occurred as a result of the training*
	What is (are) the result(s) of implementing PDP for career development?

The adaptation used the "Four Levels of Evaluation" structure to undertake both formative and summative evaluations; and used the outcomes of both these modes of evaluation to make improvements to the PDP system, tools and processes. Each of the levels were worked through systematically to promote a holistic approach to the evaluation. Level one evaluated how the group felt about PDP, the systems,

supporting materials and processes such as, action planning implementation, and monitoring. This level aimed to answer questions such as: Did they like the idea of PDP? Did they find it relevant and useful for their needs? Were they satisfied with it? And did it serve a purpose? Level two evaluated whether there had been any learning gains, and / or improvement in knowledge, skills, attitudes, as a result of engaging with PDP. Level three evaluated any learning transfer as a result of using PDP. It aimed to answer the questions of: Had any new learning been applied in practice? And how was the new learning applied? Level four evaluated the overall results of implementing and using PDP as a strategy for career development.

RESEARCH DESIGN

The choice of study design was shaped by the needs of the research topic, and the needs and purpose of the wider Gates Malaria Partnership (GMP) project – in which this research study was situated. While the purpose of the study was essentially to implement input to evaluate output, the nature of the research (a broader outcomes focus than tangible outputs) and the complexity of the research situation (the relationships and interrelationships of the people involved) meant that a broader design, rather than a simple input-output model needed to be implemented.

The different relationships and interrelationships within the research study – that is, between the researcher and participants, researcher and stakeholders (GMP partners), participants and stakeholders – was a major

influence in the choice of design. The relationship that the participants had within the study was very much one of participant researcher, in that, not only were they generating data (as participants) but also, from their experiences, drove the nature of the improvements that were made to the system, tools and processes. In order to optimise the opportunity for the participants, and make sure that they were getting the best out of the opportunity, a method was used that would allow ongoing improvements (in small cycles) to be made to the system during the research. While these aspects also required ethical consideration (managing the relationships and the changes or improvements to the system without compromising the results of the research) they were also aspects that were influential in making a case for using an Action Research approach in the study design.

My roles as researcher as well as participant (in the capacity of PDP advisor and mentor) was also a subject within the study, therefore the keeping of a research journal (field notes) was both a means for me to maintain self-awareness and promote objectivity, as well as serve a purpose as a data generation tool.

While there might be some criticism of the research design, for example the various close and inter-relationships (as described above) that could introduce bias to the research, the design of the study had to take into account the broader aspects involved; in addition to being fit for purpose

– that is, fitting the needs of researching a very human and complex innovation.

RESEARCH PROCEDURES

Sampling

This predominantly qualitative study employed a non-probability sampling method, and a purposive or judgemental sampling technique. The choice of the target population came from a judgement made to include a specific group (of doctoral and postdoctoral Sub-Saharan African research scientists) in the study. This element of judgement in the sampling process was also extended to the sample group, through the participant's choice to join the study or not.

Miller and Salkind (2002) see the goal of sampling as a process of selecting a sample while incurring minimal error; and in that way the sample best represents the population of interest, and generalisability. This applies to both quantitative and qualitative research. However, unlike quantitative research where the inductive nature of the research compels the researcher to employ strict methods and techniques to sampling, in qualitative research, the methods and techniques for sampling are driven more by the deductive, investigative and exploratory nature of the qualitative framework. This does not mean to say that qualitative researchers employ no method or technique to sampling; it's just that the methods or techniques employed are more likely to be of a

non-probability nature and therefore less likely to ensure representativeness and generalisability.

Henn et al., (2006) see a small sample size and qualitative methods of sample selection as a limitation; an issue often voiced by critics of qualitative research. However, the small-scale, intensive studies reflect the nature of the interpretavist paradigm, which is associated with qualitative research. In this research study, it allowed me to explore the specific issue (of the Group using PDP for their career development) in depth and detail – and is the "trade-off" that Patton (1990, pg. 165) describes between the breadth associated with quantitative research and the depth associated with qualitative research.

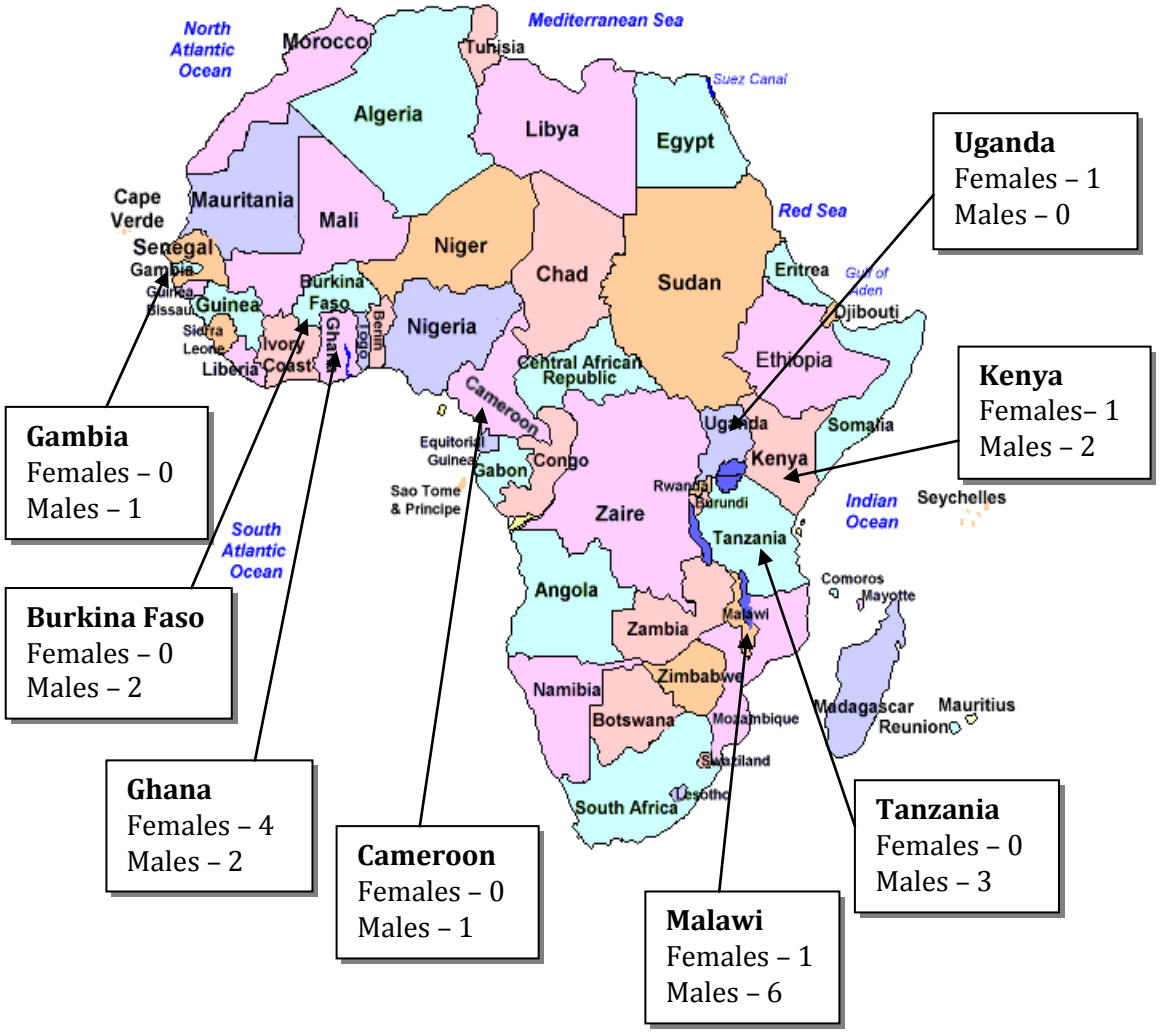
Description of participants:

The inclusion criterion for entry to the study (and the PDP programme) was that the GMP-sponsored doctoral and postdoctoral researchers had to be returning to work in a malaria-endemic country in Sub-Saharan Africa. The eligible researchers also had a choice of entry into the study, through their decision to opt in or out of the PDP programme. The study participants were therefore a self-selecting group from the cohort of thirty-three GMP-sponsored doctoral and postdoctoral research scientists. The sample size was reduced to twenty-four, as three members did not meet the entry criterion and six chose not to partake in the PDP programme. For three of these six, the choice not to participate was

because they felt that they were unable to devote the time to PDP – one had just got a position as Principle Investigator on a multi-country study, another was in the middle of his field work for his PhD studies, and the third was promoted on return to her home country and felt that the timing of the PDP was not right for her. There was no data to explain why the other three chose not to participate.

Figure 3, gives an outline of the twenty-four study participants and their home countries.

Figure 3. Description of the study participants



The group was a mix of social scientists, undertaking various community-based studies and natural scientists undertaking a variety of laboratory-based studies, including clinical trials. Of the twenty-four participants in the study, three were assigned to an affiliated African institution, which became their home institution (that is, that did not originate from that institution) and two out of these three had given up positions (that had them on career pathways) to take up the GMP-sponsorship opportunity.

Three of the twenty-four participants were registered with a UK institution that introduced PDP as a mandatory part of their doctoral programme. For these participants, this PDP included, completing a structured programme of accredited skills training and undertaking a set number of formalised meetings with their supervisors and advisory panel. Six of the participants were based within home institutions that had a structured form of staff development. These were in the form of annual staff appraisal systems; and in one of these cases, an annual performance management review system – which (like the staff appraisal systems) was linked to progression within the organisation. In the case of three participants (based within the same organisation) it was reported that, while the annual appraisal system was in situ and did take place, it did not achieve what it set out to do since blockages within the system mitigated any career movement.

Ethical considerations

Approval and informed consent

In accordance with good practice guidelines, as outlined in the Code of Research Practice (2000) in the researcher's institution, an ethics application was submitted to, and approval gained, from the Research Ethics Committee within the institution prior to commencement of the research project.

Informed consent was obtained from each of the participants in the study (Appendix 1). This outlined how their confidentiality would be

maintained, and how the data would be collected, used and stored, in accordance with the UK Data Protection Act (1998). The consent form also informed the participants of their rights to withdraw from the study at any stage.

The study does not refer to any of the participants by name, and in order to protect the anonymity of the participants, no countries or institutions are mentioned in individual narratives as it would be easy to identify the small number of participants and institutions within each of the various contexts discussed.

Ethical issues

Relationships play a significant role in this research study, and the close relationship between the researcher and the participants is one of the ethical issues for consideration. While the supportive element of the relationship was necessary, an important consideration arising from it, was the ethical use of any contextual data gained as part of my role as confidante. Confidentiality was assured at all times.

The other close relationship within the study was the relationship between the researcher and the stakeholders. The need for operational research and positive findings had to be balanced with scientific academic research and the reporting of objective, uncompromised results. The researcher has an ethical responsibility throughout the research process, and this means being honest throughout the entire process, from data collection to analysis and reporting. In this research study,

objective reporting was at the foremost of my ideals and the use of critical reviewing (in my supervisors) helped to promote objective reporting, thereby helping to maintain the integrity of the research.

To manage the close relationships, a research journal was used to help maintain self-awareness, and keep the different roles in the various relationships separate. While the further issue of researcher bias, for example in the language used in the research journal, every effort was made to keep impressions apart from fact – in order to help with sustaining objectivity throughout the research process.

Context is another aspect that plays a significant role in this research study, and having an awareness of the ethical challenges found within the different Sub-Saharan African countries was necessary. This required having a good knowledge of the cultural environments in which the research was conducted. An example of this can be seen in having an understanding of the important role that status and hierarchy in Africa plays in forming and maintaining working relationships. To manage this, it was important for me to use my existing knowledge of African culture and protocol, and my various roles within the research process to their advantage. For example, when meeting with some of the more senior individuals who might have played a role in the participant's PDP (directors of their institutions, line managers, research supervisors), I minimised my role as student and highlighted my role as researcher, in order to gain access and meeting time with the relevant individuals

concerned. Whilst my previous experience of working and living in Sub-Saharan Africa helped with this knowledge and understanding, further effort was made to gain increased awareness and knowledge of the particular cultural environments in which the research was conducted. For example, gaining an understanding of how each of the institutions worked and where each of the participants were situated within their institutions, and of the ethical challenges, if any (for example, the impact of nepotism) that each of them faced with their career advancement.

Data collection strategies and instruments

This study used a variety of data collection methods and instruments to gain the evidence and knowledge needed to understand how the use of PDP for career development might work with a group of African research scientists based in Sub-Saharan Africa. The sources from which the data were collected and methods used, were guided by the research questions, framed within the study evaluation framework.

Table 3 outlines the elements to be evaluated and the corresponding data methods and sources.

Table 3. Data methods and sources for elements to be evaluated

Elements to be evaluated		Data methods sources
Level 1 Reaction	How do the group feel about using PDP, the system, tools and processes? • Using PDP for career development • The PDP documentation and supporting materials • The PDP Implementation process • The PDP Monitoring and Support	• PDP documentation • Nominal Group Technique (NGT) • Reaction survey Questionnaire (1) • Semi-structured interviews - for further data and to triangulate the documentary evidence
Level 2 Learning	Have there been any learning gains as a result of engaging with PDP?	• Individual PDP Action Plans, Annual Reports, Monitoring Schedules • Follow-up questionnaire (2) • Semi-structured interviews – as above
Level 3 Behaviour	Have any learning gains (as a result of engaging with PDP) been applied in practice?	• Follow-up questionnaire (2) • PDP action plans, annual reports and progress monitoring reports • Semi-structured interviews – as above
Level 4 Results	What is (are) the result(s) of implementing and using PDP for career development? • To what extent has engaging with PDP helped, in terms of, career development and confidence to plan and manage career development • A PDP system for future GMP (and wider) use • The extent to which it is feasible to implement PDP more widely with similar groups in Africa	• Questionnaires (1) and (2) • PDP action plans and annual reports • Semi-structured interviews • NGT, online Focus Group Discussion, follow-up questionnaire and interviews • Semi-structured interviews

Bell (2005) proposes that in all research, the methods selected for gathering information depend on the nature of the information required. The information required for this study was the type of rich data that would assist in constructing, rather than testing theory, so data collection methods were used that best captured this. The study used naturally occurring data collected during all interaction with the participants, including email, telephone (including text messaging), the interaction during the monitoring and support visits undertaken by the researcher to the individuals' home countries. These were recorded as the researcher's field notes.

In addition to the naturally occurring data and the documentary evidence from the participants PDP documentation, the study used four main methods for gathering information. These were: questionnaires, semi-structured interviews, Nominal Group Technique and an online Focus Group Discussion.

Figure 2, on page 20 provides a timeline of the data collection points within the study.

Initial reaction survey and follow-up questionnaires

The study used two questionnaires – an initial reaction survey questionnaire (Appendix 2) administered at six months after the GMP PDP Group's initial engagement with PDP, and a follow-up questionnaire (Appendix 3) administered one year later. The questionnaires used a

mix of Likert Scaling and open questions to generate both quantitative and qualitative data. One of the main reasons for using questionnaires in this study was that it allowed the group members to respond anonymously, and therefore provided the opportunity to cross check this with the data generated from the interviews, where perhaps they might have felt that they could not be entirely open and honest with their feelings about the process.

The reliability and validity of data generated from questionnaires is dependent on the quality of construction (Anderson, 1995; Miller and Salkind, 2002; Sarantakos, 2005). The study questionnaires were pre-tested with a group of colleagues so that (through external scrutiny) the design could be refined and corrected before being piloted with a small group of fellow postgraduate students within my institution, and subsequently administered to the participants.

Semi-structured interviews

Semi-structured interviews were conducted to collect in-depth data to evaluate the PDP processes from the perspective of the participants. The data was also used to inform and triangulate the data from the individual Personal Development Action Plans (PDAPs), the progress monitoring forms, annual reports, email, telephone (including text messaging) and posts in the discussion forum. The interviews were conducted two years after the participants' initial engagement with PDP; and in addition to

collecting data for the research, it also gave the participants the opportunity to re-count their experiences and express their views on how they felt using PDP might have helped them personally progress their career development thus far.

The interview schedule contained 10 questions, with further prompt questions as needed, and aimed to collect data to cover all the themes that the research aimed to explore (Appendix 4). The themes covered in the interviews were developed following initial analysis of the questionnaire data – through a process coding and theming. They included: the role of PDP in their career development; institutional support; mentor support; funding; time constraints vs engagement with the PDP process; learning as a result of using PDP; application of learning to practice; future engagement in the PDP process, and expectation vs reality. This final theme was one that I wished to explore to help understand and explain the varying levels of engagement that the GMP PDP Group had with PDP.

Each interview took between one hour and one-and-a-half hours. Twenty two were conducted face-to-face, and two (due to gaining access to remote locations) were conducted via telephone. All the interviews were audio recorded, saved as audio files and transcribed onto NVIVO for analysis. Conducting the interviews face-to-face gave me the opportunity, as Sarantakos (2005) notes, to gather further in-depth and rich data through probing, clarifying any complexities and miscommunications, and observe and pick up on the participant's non-

verbal behaviour. However, while these techniques are seen as strengths and all help to contextualise the data, they also facilitate a new set of limitations. Critics of the qualitative approach to interviews see the closeness between the interviewer and the interviewee, particularly in the "informal conversation interview" noted by Patton (1990) as subjective and lacking in rigour. Couch and McKenzie (2006) indeed accept that because the accounts of the respondents' experiences take place in a (social) milieu where the researcher and the respondents share an epistemological position, from an empiricist perspective, interview bias can be seen as a limitation. On another note, Denscombe (2007) points out how personal identity can have a bearing on the amount of information that people are willing to divulge as well as the honesty about what they reveal; and note how people respond differently depending on how they perceive the person asking the questions. In this case because of the close relationship that I had with the participants (in being their PDP advisor, informal mentor and in some cases, confidante) – and taking into the consideration of the cultural mores of African society, where there is, as Birks et al., (2007) point out, the desire to please, I was aware of the challenges and limitations of using interviewing as a method of data collection with this group of individuals.

Chrishna (2006) states that construct validity is concerned with looking at patterns of convergence between data sources that together corroborate an overall interpretation; and that in qualitative research, triangulation is

used to establish construct validation through the use of multiple data sources and data collection methods (Long and Johnson, 2000). In this study, in order to increase the validity of the data and help limit interview bias, a concerted effort was made to obtain evidence from as diverse and independent a range of sources as possible – for example questionnaires, NGT, online FGD, and the PDP documentation.

Nominal Group Technique and Online Focus Group Discussion

In addition to using the other methods of collecting data, the research study also used Nominal Group Technique (NGT) and an online Focus Group Discussion (FGD) to collect data for its formative evaluation. This method gathered the GMP PDP Group's experiences of using PDP, and their views on how the PDP documentation, supporting materials, implementation, and other supportive processes might be improved.

NGT is an evaluative method designed to elicit the views about a particular issue or topic from a group in a structured activity. The activity involves the group member putting forward their views individually (for example, in this research study, on the positives and negative aspects of using PDP), then forming a small group to discuss and collate their views in order to present them for further discussion to the wider group. It is a method used (although not exclusively) to evaluate healthcare education programmes and health service delivery (Perry and Linsley, 2006) and in education (Horne et al., 2006). In this

research study it was used for its advantage of gaining a representation of views from a large group more equitably than a Focus Group Discussion (FGD), and because it was easier for one facilitator to manage a large group of twenty-four participants.

In sifting through and coding the data from the reaction survey questionnaire and the NGT, it was clear that I needed further and more specific data from the participants, in order to refine and make improvements to the PDP system and processes. With the difficulties of the participants' geographical location, and as the online discussion forum was up and running, it made sense to conduct the FGD online. Denscombe (2007, pg. 187) lists some of the limitations of using an online FGD as: problems with confidentiality, loss of visual cues and the time gap between the question and answer – which he says can "stultify" the flow of interactions and deprive the interview of its natural qualities. It is true that spontaneity can be lost with asynchronous interaction, and can therefore be less dynamic than a face-to-face FGD, but in this case, it was a case of needs must, and the best fit for the purpose at the time.

In contrast, an advantage for using the online FGD is that the time can allow for reflection on, and consideration of the question, which Dencombe (2007) suggests might possibly improve the quality of the answer. The issue of confidentiality was addressed by the forum being a closed forum for the use of the group only, and with the members

participating in the FGD aware and consenting to share their responses with the rest of the Group.

In summary, Chrishna (2006) sees one of the challenges with using participatory methods of data collection (as this research study does), is to ensure that the study is sound, reliable and valid, and that it is free from bias; thus making the final results trustworthy and of use to a larger population. In order to help strengthen the research design of this study and promote the rigor of the research, the study used a variety of strategies, namely collecting different types of data, which it used for triangulation; piloting, testing and refining the data collection tools, to improve their validity and reliability, and ensure their fitness-for-purpose; and with one individual involved in the data collecting processes, helped ensure a degree of consistency, to promote reliability.

MANAGING, SELECTING AND UTILISING DATA

The research study generated a substantial amount of data, so used computer software packages to assist with storing, handling and managing analysis. SPSS (Statistical Packages for the Social Sciences) was used to manage the smaller amounts of quantitative data, to carry out descriptive statistics; and NVIVO was used to manage the larger amounts of qualitative data.

Selecting and utilising the rich data – that is, what to include and what not to include in the reporting was an aspect that needed some consideration,

particularly in areas where individuals or their institutions might be identified despite anonymity. The use of my supervisors as external reviewers helped with elements of this aspect.

Further consideration was also needed in the interpretation of the qualitative data. Denscombe (2007) notes that interpretation is bound up with the 'self' of the researcher; and that the researcher's identity, values and beliefs cannot be entirely eliminated from the process of analysing qualitative data. He suggests approaching the data analysis with an open mind – and while remaining "self-aware" be without presupposition, and for the purposes of the production and analysis of the data, to suspend personal values and beliefs. To assist me with this, I looked to using the distancing strategies that Arber (2006) describes as 'bracketing' and 'suspending' – as well as looking to my supervisors as critics, in order to promote and guide the objectivity within the study.

"Bracketing" and "suspending" are the phenomenological strategies that Arber uses in her research study to help her from bringing in her own judgement and familiarity of the setting that she knows, whilst studying the phenomenon (of total pain) within a naturalistic setting. She "suspends" what is known about the person, the illness, treatment and setting, so that the phenomenon can be understood as experienced by the participants.

These strategies were adopted in this research study, where judgement about the person and the familiarity of the world (of education and PDP)

that I know were suspended so that the focus could be placed on the meaning of what was being said by the participants.

DATA ANALYSIS

Multiple data were collected and analysed as the research progressed. The study was concerned with finding meanings and patterns of behaviour from the data, in order to help understand how PDP might help this group of African research scientists progress their career development. It used analytical approaches that made use of the "thick description" described by Geertz (1973) to help understand and convey the complexity of the situation. To facilitate this, it used an approach identified by Sarantakos (2005) as an "iterative qualitative analysis" approach, which includes grounded theory and analytical induction – the inductive logic that moves from the data to theory, and from the general to the particular (Denscombe 2007).

To do this, using a constant comparative analysis method, all the qualitative data from the NGT, online FGD, questionnaires and transcribed interviews were coded and searched for general themes, then categorised, and sorted for relevance to theoretical constructs, as well as for context specificity to the main elements that the research aimed to evaluate – that is: the participants' experiences of using PDP, their learning experiences and any changes in behaviour that they can see as a result of engaging with PDP.

Denscombe (2007) highlights the possibility of meaning being de-contextualised during the process of coding and categorizing the field notes, texts or transcripts; and that there is a possibility that the data can be taken out of context. To mitigate this as far as I could, I used my field notes to help place the data in context. While I was aware of the complexities that this interpretation might bring to the analysis, it was important to do this since context played a major role in this research study. Lincoln and Guba (1985) note how social realities are wholes and cannot be understood in isolation of their contexts nor can they be fragmented for separate studies of their parts.

ROLE OF THE RESEARCHER

Managing dual or even multiple identities is a feature of every research study, but the position of the researcher and the researched is one of scrutiny in qualitative research (Coffey, 2002 cited in Gokah, 2005) – and while this research study used cross-paradigm methodologies, it was a predominantly qualitative study. In addition, the study used an Action Research approach, of which one of the features is the closeness that the researcher has with the participants. Bradbury and Reason (2003) note how the distinction between researchers and subjects can become quite blurred in the course of what is usually a lengthy, collaborative relationship, while Riordan (1995); Cooke and Wolfram-Cox (2005) see

Action Research as essentially characterised by its reflexive, collaborative and interventionist nature.

In this research study the closeness that I (as the researcher) had with the participants could have been seen as an issue that might have brought tensions, challenges and limitations. This close relationship that I had with the participants (during and beyond the project) was one that was deliberately forged, using techniques such as positioning (Arber, 2006) in order to reduce social distance and gain acceptance. This was done primarily to gain their trust and confidence, so that they would see me as someone they could approach at anytime, for help with their PDP.

Using a research journal is one way of maintaining reflexivity in the process, which Arber (2006) sees as establishing the researcher's integrity. For me as the researcher, it helped me to manage the boundary between closeness and distance, as the situation required.

Insider in the research process

The challenge with being an insider in the research process is that the relationship between the researcher and the researched develops in a way that the participants become part of what Pollner (1987, cited in Arber, 2006, pg. 148) refers to as "one's own tribe" – and with that, there is the element of coming to situations with a certain amount of pre-understanding – that is people's knowledge, insights and experience (including their lived experience).

While this was not an ethnographic study, there were features of this type of approach that were used – for example, to record my field notes during my monitoring and support visits to the individuals' home countries and institutions, I did not become a participant observer but I did take on the role of observer as I recorded my notes. With this approach I became both an insider and outsider in the research process. Gokah (2006) demonstrates how conceptually, an "insider" may become an "outsider" within the same country, province, region or even social grouping. In managing multiple roles (PDP advisor, PhD student and researcher) within this study, I found that my status shifted constantly – in the same way that the insider and outsider status shifts. Practising self-awareness and using a reflective journal helped me put these roles into perspective. It should be noted that, while not all of the above tensions and challenges could have been eliminated or even limited. As a researcher I was aware of them and made sure that I tried to remain constantly aware of my position and role as a researcher at all times.

LIMITATIONS OF THE STUDY

In general, small sample sizes are seen as a limitation in any research study, since they make generalisability of results to a wider population challenging. However, in this research study, the main purpose was to find out how this initiative worked with this specific group and how it is likely to work with similar groups. So while the restrictive nature of the

small sample size might be seen as a limitation for most research studies, for the purpose of this research study it is seen as an advantage, and necessary for adaptability of the initiative to similar contexts.

The close researcher-participant relationship, combined with the reciprocity of funding and support built into the study (through the wider project), and the African cultural more of the desire to please (Birks et al., 2007), could all be seen as potential limitations in the study – particularly when using methods such as interviewing and self reporting to collect data. This increases the opportunity for the validity of the data to be compromised through personal bias. However, raised awareness of these issues and implementation of strategies to overcome these were employed. These included using a variety of additional data collection methods to triangulate the data, positioning of the researcher to maintain distance, and using methods such as a research journal and external critical review (in my supervisors) to help maintain self-awareness and a level of objectivity in the research process.

SUMMARY

This chapter reviewed the theoretical literature, in respect of the approaches used to conduct the research study; and in particular the cross-paradigm approach used within the study. It provided a discussion on the rationale for using key features from Action Research to frame the

research methodologies; and included the main criticism and epistemological shifts found within Action Research.

The evaluation literature was examined and justification was made for the choice of framework adapted to meet the needs of the research study.

The research procedures were discussed, including the participant sample, and a description of the study participants.

Ethical considerations concerning relationship and cultural context were outlined, and a discussion on the role of the researcher within the research process was provided. Discussed also were the data collection methods, sources and instruments, as was the management and the analysis of the data; and concluded with the limitations of the study.

In the next chapter, the development and implementation of the PDP system and individual action plans will look to the theoretical approaches discussed in this chapter to inform the development and implementation processes.

CHAPTER 4

DEVELOPING AND IMPLEMENTING THE GMP PDP SYSTEM AND INDIVIDUAL ACTION PLANS

INTRODUCTION

In this chapter, the research study moves to the development and implementation of a PDP system needed to support a group of African scientists with their career development. This group of participants, based in eight developing countries in Sub-Saharan Africa (SSA), were doctoral and postdoctoral scientists sponsored to undertake malaria research, in order to help built research capacity in malaria in SSA.

PDP was proposed as a strategy to help this group of research scientists with enhancing and progressing their career development; hence the need to develop a system and associated tools to support this. With PDP development not done before in this context, and its early emerging evidence base at the time of development, there were no readily available models to fit the needs of this specific group and their varying contexts. With little insight into how a PDP system for this group might look, the challenge was to find systems that might be adapted to meet their specific needs. This chapter goes through the stages of development of the PDP system, from a needs analysis of the group to development and implementation – and shows how the literature reviewed and discussed in chapter two is used to inform and

support this development, and how the methodology discussed in chapter three is applied to the processes of developing the PDP system.

DEVELOPING AN EVIDENCE-BASED PDP SYSTEM FOR THE GMP PDP GROUP

Needs analysis

The first process involved in developing the PDP system for the GMP PDP Group was to determine the needs of the group and how they were intending to use it. Much of the groundwork for determining whether PDP was the right response to fulfil an identified need had already been undertaken and agreed with the group at one of their annual support days in Yaoundé in Cameroon the previous year (McArdle, 1998; McConnell, 2002; Reed and Vakola, 2006). See figure 2, pg 20 for a timeline of key events. It was now just a matter of using the results to move forward with development.

What the GMP PDP Group wanted

During a workshop held with the group at their annual support day, they collectively expressed a need for the development of skills (not acquired or developed as part of their research degrees) to support their career development in their home countries. Following a brainstorming

session, an array of skills emerged; some of which partly overlapped but were also specific to individual need. These skills included:

1. technical skills: gaining more knowledge in immunology, tissue culturing, malaria modelling, and molecular techniques
2. research skills: gaining principal investigator skills for conducting clinical trials, grant proposal writing, research methodologies and learning how to use new data management software
3. professional skills: project and financial management, teaching and lecturing skills, leadership skills, strategic planning and language skills.

This list was not exhaustive, and also included some of the "soft" skills, such as: networking, team working, and personal effectiveness skills such as time management, presentation and public speaking skills.

The group's intended purpose for PDP

I was not present when this needs analysis was undertaken, so these results (reported in the project agreement document) not only helped to give me a clearer understanding of the immediate priority of the group, but also helped to establish their intended purpose for PDP – that is, as an opportunity to develop identified skills in order to enhance their marketability and career progression as researchers in their home countries. Understanding the main purpose for PDP was essential to the development of the PDP system; since PDP in itself is

such a broad concept and is used in a variety of contexts and for a variety of purposes, as shown in Table 1, pg. 12.

CHALLENGES WITH DEVELOPING THE GMP PDP SYSTEM AND TOOLS

Designing a PDP system for a context in which PDP had never been used before presented many challenges. The biggest was, with no "off-the-shelf" PDP system for use in developing countries, it was difficult to imagine what a PDP system for this group might look like, let alone how it might work. Also, at this point of development, although I had the results from the needs analysis and knew that the GMP PDP Group comprised of doctoral and postdoctoral research scientists, I had little knowledge of them, in terms of demography, stages of their career development or personal experiences with PDP.

Given the specificity of the GMP PDP Group and their contexts, there were also some practical challenges. The first was how to find a similar group (that is, individuals from developing countries with no experience of using PDP) with which to pilot the PDP system and processes before implementation. The second included the challenges associated with the launch and implementation of a new concept and processes via remote means, due to the geographical spread of the group. These challenges also included the difficulties faced with unstable internet connectivity in parts of Sub-Saharan Africa.

A further challenge related to time. There was a considerable time lapse between the start of the project and the introduction of the PDP programme. This meant that, in order for the group to get the optimum benefit from using PDP (and for me to have a substantial period of time in which to evaluate this use) I had to speed up the development and implementation processes, and therefore had to have the system and tools, developed, piloted, refined and implemented within four months. The PDP project duration, in terms of funding, was three years. Figure 2, on page 20 provides a timeline of key events in the PDP project.

Finding an evidence-based system to adapt

At the time of development (2006) the PDP evidence base was in the early stages of growth. There was an emergent database of functioning PDP systems in the UK, of which many were being tried and tested but none had been formally evaluated with published results. An additional complication was that most of the established PDP systems were from developed country perspectives (UK, Europe and North America), with very little from the perspective of a developing country, and nothing from a Sub-Saharan African perspective. So with no "off-the-shelf" system available, I had to look for models that might closely fit the needs of this specific group and their contexts and adapt them accordingly to make it fit-for-purpose. Some of these specific needs included: (a) developing a

PDP system that would be user friendly, since the concept of PDP and using PDP was new to the majority of the group; (b) developing a system that could be supported remotely using distance learning strategies, and (c) developing a PDP system that would be suitable for individuals at varying stages of their career development and with varying availability of local resources to meet their PDP needs.

A review of the literature yielded various examples of PDP systems and tools. However, I found that most of these were systems developed within the UK higher education system and were focused at undergraduate level; and with a strong emphasis on relating student learning, recording achievement and maintaining Higher Education Progress Files linked to subject benchmark statements (QAA, 2001). While this literature was insightful in helping to gain a good understanding of the principles of PDP, and provided a good idea of what should be included in a PDP system (in terms of the main elements and relevant tools), the focus of these PDP systems was not suitable for the needs of the GMP PDP Group, whose PDP was not policy driven.

In focusing my search along the continuum, I found that at the other end where PDP was being used for staff development, the development of skills was often linked to human resource management and corporate strategy (Bennett, 2006; Floodgate and Nixon, 1994; Tucker and Moravec, 1995). Since PDP for this group was not driven by their institutions, these examples were not suitable either; but again the

information was insightful as it brought further ideas to the development of the GMP PDP system**.**

Other sources for PDP system reviews were from attendance at PDP conferences and meetings; and in particular, attendance at an International Seminar on Researching and Evaluating PDP and e-Portfolios in the UK, in 2006. This conference was hosted jointly by the Higher Education Academy, Joint Information Systems Committee (JISC), the Centre for Recording Achievement, SURF (Netherlands) and the National Coalition for Electronic Portfolio Research. The main aims of the event were to respond to an expressed need from the PDP and e-portfolio communities, for the importance of an effective evidence base; and to provide opportunities for collaboration on key research and evaluation questions at international level (Ward, 2006, pg. 7). Attendance at this event provided enormous insight, from a national and international PDP network, into the amount of unpublished activity centred on the development of PDP and systems (including electronic portfolios) for all sectors in education, the workplace and staff development. It was at this event that my awareness was raised of how varied PDP systems could be, in order to meet the specific needs of the target users. The discourse at the event centred on problems around how a lack of clarity in definition gave rise to a diversity of perceptions of PDP, which in turn led to a variety of approaches and models of development – and often within the same institution. This discourse

helped to explain why there was relatively little information available at the time on how successful any of these initiatives were. But the single most important aspect of attending this event was that it gave me the confidence, from examples showcased at the event, to develop a system that could work specifically for the group; and more importantly the confidence to be able to explain why it was developed in the way that it was.

The Research Career Builder

At the same time within my own institution – and in response to the "Roberts's Agenda" (Roberts, 2002) – there was a lot of activity around the development of electronic portfolios, PDP systems to support postgraduate research (PGR) students, and contract researchers – now referred to as research staff. Within this network, I was made aware of a career management system that was developed for contract researchers and their managers; and focused on longer-term career planning through the development of personal and professional skills.

The project, funded by the Higher Education Funding Council (HEFCE) and led by the University of Sheffield, in partnership with the Universities of Manchester, Loughborough and 14 other universities, developed a career management framework that incorporated career planning and support mechanisms designed to be used flexibly by institutions to embed into their own existing policies and practice. The framework was made up of four phases: the first three months, the core

research time, four to six months before contract end, and contract end – and comprised of downloadable tools and resources that could be adapted by individuals to suit specific needs. These tools and resources consisted of:

- "Research Career Builder" – a skills matrix that individuals (with assistance if necessary) could use to measure the levels of their existing skills, and plan for further development
- Two "Employment Skills Guidebooks" with examples of how acquired transferable skills could be built into projects and transferred to other work contexts
- Staff Review Scheme, to facilitate development and monitor progress.

The career management system also included training materials, case studies and checklists to facilitate career tracking (CRS: Good Management Practice, 2000).

This system was very useful for the needs of the GMP PDP Group, because of its focus on longer-term career planning and the development of personal and professional skills at postgraduate level and beyond – whilst still encompassing all the PDP elements of planning, doing, recording, reviewing and evaluating, as suggested by Gough et al., (2003). It was also useful because the resources within the framework

(particularly the skills guidebooks and skills matrix) could be adapted for independent use, as stand-alone materials.

Additional information to support development

Now that I had a good awareness of what resources and tools might be needed to support PDP for research scientists in general, I needed to find a suitable proforma or PDP model that would work for the entire GMP PDP Group – including the ten doctoral researchers who, at the crucial stage of completing their PhD studies, were more focused on immediate short-term planning post PhD rather than longer-term career planning. To help achieve this, as a postgraduate research (PGR) student who had to engage in PDP as a mandatory requirement for my own PhD programme, I could draw on my own personal experiences, and the experiences of my fellow PhD students. Although the PDP system that we were engaged in (within our institution) had not yet been formally evaluated, it was well developed, well supported and appeared to function well; and therefore gave me the opportunity to briefly evaluate at firsthand (as I worked through it) what might work or not work for a group of PGR students based in Sub-Saharan Africa. For example, the system was totally reliant on electronic media – from completing Personal Development Plans, to booking on training courses, communicating with your supervisor and keeping Personal Development Records. From my experiences of living and working in education in

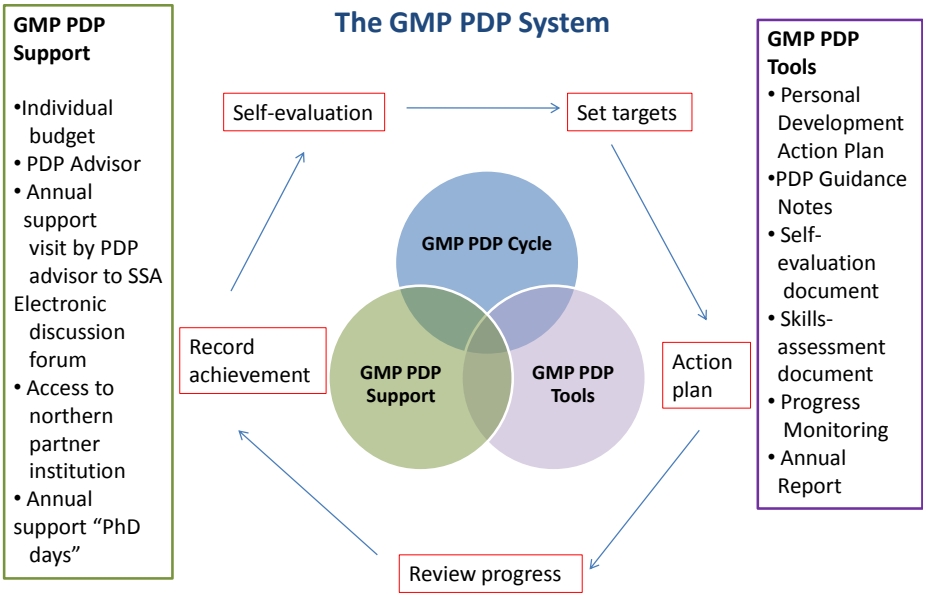
Africa I was able to appreciate how a system totally reliant on internet access might not be the best way forward in terms of development and delivery for this particularly group based in Sub-Saharan Africa – due to the challenges faced with regular electricity cuts and unstable internet connectivity.

The other supporting literature that I drew on, to gain information and practical ideas on how to develop a PDP system and tools, was from the work of Rughani (2000) on how to develop PDP for General Practitioners for Continuing Professional Development (CPD). Also influential in the development of the GMP PDP system was the information gained from, and the use of the repository of generic PDP tools hosted on the Vitae website – which is a site incorporating the previously UK government-hosted website for graduate students (UKGrad) and research staff UKHERD (Higher Education Research Development). The work of Jackson et al., (2004) for the Higher Education Academy on developing an infrastructure to support an evidence-informed approach to PDP was also drawn on; as was the wealth of literature developed, compiled and stored by the Centre for Recording Achievement – the UK national organisation, supported by the Higher Education Academy in the UK, and in charge of supporting the development of PDP.

THE GMP PDP SYSTEM AND TOOLS

With an amalgamation of the PDP systems and tools for undergraduates, postgraduate researchers, the "career builder" and the systems developed for staff development and for CPD – and with the underlying principle of keeping it as simple as possible – the PDP system developed for the GMP PDP group comprised of three main elements: a Personal Development Action Plan (in which PDP achievement was recorded), a Progress Monitoring document (which allowed individuals to reflect on their progress using a reflective cycle) and an Annual Report (which allowed for keeping track of their PDP). Figure 4, gives an outline of PDP designed specifically for the GMP PDP Group. The system used the PDP cycle (QAA (2009) – adopted from the experiential learning cycle devised by Kolb (1984) as its basis – and incorporated the GMP PDP cycle, specific tools to support the processes of the cycle, and a framework of support for the whole system.

Figure 4. PDP for the GMP PDP Group



GMP PDP cycle adapted from Kolb (1984) and QAA (2009)

The stages within Kolb's cycle (adopted by QAA, 2009, pg. 6) relate to the activities and processes underpinning PDP, and include: (1) gathering evidence of learning experiences and achievements; (2) reflecting on learning experiences and achievements; (3) identifying new learning needs and creating development plans, and (4) reviewing progress towards achievement of goals set. In order to construct a process model to meet the needs of the GMP PDP Group, and include the PDP elements of, planning, doing, recording, reviewing and evaluating (Jackson et al., 2004), I expanded the stages of the QAA cycle, and framed them around simple questions. This

was done to help make it easier for the GMP PDP Group to use; particularly the members of the group who were totally new to the experience. It was also done to facilitate electronic implementation via remote means. This gave the group a working framework to facilitate their PDP, in addition to providing them with the opportunity to connect their learning, as Jackson (2005) suggests, through reflection and through doing. Figure 5, shows the GMP PDP cycle as adapted from Kolb (1984) and the QAA (2009).

Figure 5. GMP PDP Cycle adapted from Kolb (1984) and QAA (2009)

The GMP PDP Cycle, adapted from Kolb (1984) and QAA (2009)

GMP PDP DOCUMENTATION AND SUPPORTING MATERIALS

Three main pieces of documentation were developed, to support the GMP PDP system. These were: a Personal Development Action Plan (PDAP), a Progress Monitoring Form and an Annual Report. Accompanying this documentation were the supporting materials, in the form of: a comprehensive set of interactive Guidance Notes, a Self-evaluation document and a Skills-assessment document – all of which were for optional use by the GMP PDP Group as needed.

An important consideration in designing the PDP documentation to support PDP for the GMP Group was to ensure that they were fit for purpose, as well as being simple and easy to use. To ensure this, and whilst still adhering to the principles of PDP, every effort was made to keep the documentation to support this GMP PDP system, to a minimum. Keeping the design of the document simple is something that Floodgate and Nixon (1994) advise in the development and implementation of PDPs (plans). In this case, this was done to try to mitigate some of the challenges faced with introducing a new concept, system, processes and a new way of working, via remote means; as well as taking into account the already significant workloads that these individuals had to cope with.

The GMP Personal Development Action Plan (PDAP)

The Personal Development Action Plan (PDAP) (as shown in Table 4.) was used by the individual to help guide their planning towards their desired career goal(s) over a five-year period.

Table 4. The GMP Personal Development Action Plan (not to scale)

My Five-Year Personal Development Plan					
Period of Plan: **From:** **to:** My long-term goal(s)					
My personal development goals	My personal development objectives	My schedule of activities and resources required	Time Frame	Evidence of achievement of objectives	Date achieved

The six-column step-by-step approach helped the individual to identify their development needs and formulate these into personal development goals; which are then broken down into Specific, Measurable, Achievable, Relevant and Time-bound (SMART) objectives. SMART objectives first appeared in the 1980s as a mnemonic to help with writing clear and concise objectives for project management; with its origin attributed to Doran (1981) – and its mnemonic referred to as Specific, Measurable, Achievable, Realistic and Time-bound. For the purposes of helping the GMP PDP Group with their planning, and to focus their objectives on their specific needs and relate them to their goals, the "R" was changed from "Realistic" to "Relevant".

For planning and developing the PDAP, the individual outlined a schedule of activities with identified resources and costs needed to achieve each of these SMART objectives; which were then placed within a time frame. The evidence of achievement and the date of each achievement served as a record and a repository of information from which the individual could draw when updating or building their CV.

Developing the Personal Development Action Plan

The structure of the PDAP was adapted from PDP and other planning models used outside of the PDP arena. This included logical frameworks – a planning tool developed in the USA in the late 1960s and with adapted versions now used widely in the field of International Development (Dey et al., 2008). The principles of the logical framework are to plan, implement and evaluate improvement projects dynamically in order to achieve operational excellence (Dey et al., 2008). It was not only the application of the planning, implementing and evaluating elements of the logical framework that seemed appropriate for structuring the PDAP, but also the standardised format of what is to be achieved, the activities that will be carried out to achieve the goals and objectives, what resources would be required and how this achievement would be measured and verified (Dey and Hariharan, 2006). However, not all of the elements of the logical framework approach could be suitably applied to the development of the PDAP. The attention to stakeholders, managing

complex relationships with organisations as well as partners (Dale, 2003) and its function as a management analytical tool to enable manager and stakeholder analysis, development of a hierarchy of objectives and selection of preferred implementation strategy with sustained outcomes did not apply (Dey et al., 2008). Whilst there was stakeholder involvement in this PDP programme in the form of funding, and while the individual would be able to demonstrate evidence of using their funds for PDP purposes, there was no direct stakeholder involvement in the individual's PDP. So in dispensing with the elements that were not appropriate to fulfil the function of a personal action plan, and picking up on the ones that could, the PDAP followed an adapted logical framework approach, in that it provided a step-by-step structure to developing and recording the individual's plans.

One of the elements from the logical framework that was omitted in the PDAP, and something that was picked up in the piloting of the PDAP and other documentation, was the column to take into account any obstacles that might prevent the individual from achieving their goals and objectives. Following discussion with the individuals piloting the documents and some reflection, it was decided that the column should be left out. The decision to do this was balanced by the conscious effort to keep the PDAP as simple as possible, as well as thinking about what the effect might be on the individual in considering barriers that they had no control over. This is not to say that the barriers should not be considered, just that effort might be better served in reflecting upon these barriers in their progress monitoring and looking at ways of how to work around them next time rather than facing the de-motivating aspect of having to consider and plan for them beforehand.

The Self-evaluation document

To help the individuals with starting their planning, and working through the processes of the GMP PDP cycle (as seen in figure 5, pg. 110), a self-evaluation document was developed, as shown in Table 5.

Table 5. The GMP Self-evaluation document (not to scale)

What are my interests? Think about both your personal and work-related interests.	**What are my values?** Think about what it is that motivates you

This simple document allowed the individuals to think about their interests and values; what it is that interests them both personally and professionally, and what it is that motivates them. This was to help them think about their future careers, by looking at, and answering the question of "where am I now?" Once the individual had begun the process of thinking about where they would like to see their careers (and themselves) in five years hence – that is, answering the question of "where do I want to be?" they could think about setting targets. These targets then became the basis of their personal development action planning, and were formulated and written into their personal development action plan as the personal development goals and objectives that they identified as needing to develop in order to help them achieve their career aim(s) – that is, their long-term goal.

The Skills-assessment document

A skills-assessment document was developed to help support the self-evaluation and setting targets stages of the GMP PDP cycle (see figure 5, pg. 110) is shown in Table 6.

Table 6. The GMP PDP Skills-assessment document (not to scale)

What skills am I good at?	What skills do I need to work on?

The skills-assessment document was designed to get the individual thinking about the skills that they are good at and focusing on the skills that they felt they needed to improve, in relation to their personal development action planning and career development. It aimed to help the individual to answer the question of "what do I need to do to help me get there?" Identifying skills for development and development needs is not always an easy thing to do, and may not necessarily be something that is known until the need arises.

In 2001, to support postgraduate research training in the UK, the Research Councils developed a Joint Skills Statement (Appendix 5), which set out seven areas of skills development which a research student is expected to

develop as part of their postgraduate research programme (RCUK, 2001). These 36 critical skills, ranging from research management to career development, also includes the "soft skills" such as, personal effectiveness, communication, networking and team working. Although this requirement for research skills training was initially applicable to Research Council funded postgraduate researchers, it has now been adopted as the gold standard and is used as the basis for research skills training programmes in most Higher Education Institutions (HEIs) in the UK. For the GMP PDP Group, a link to the Joint Skills Statement was included in the supporting materials (the Guidance Notes) as a means to help them with thinking about their skills development.

The Progress Monitoring and Annual Report forms

The PDP documentation also included a Progress Monitoring form (Appendix 6) and an Annual Report form (Appendix 7). These documents were included in the appendices since the accompanying explanatory text attached to each of the documents made them too big to include in the body of the thesis text. The Progress Monitoring form used questions adapted from the reflective cycle developed by Gibbs (1988) and was designed to help the individual to reflect on the progress of their PDP. The other purposes for this document, and the Annual Report form (which was a simple template to briefly outline PDP activity and future PDP plans) were to help the individual keep on track with their PDP, provide a basis for future PDP planning, and act as a motivational means to encourage the

individual to keep going with their PDP. The Annual Report form also provided the budgetary information required for the GMP annual reporting.

The Guidance Notes

The Guidance Notes (Appendix 8) were developed to help the group with completing their PDAPs. It was divided into ten sections and covered information ranging from an introduction to PDP, working through the PDP cycle, writing SMART objectives, identifying individual learning styles (to help with deciding on the type of learning activity to undertake to meet the objective), Frequently Asked Questions (FAQs) and troubleshooting. The document was developed with each section hyperlinked, so that the user could dip into it as needed. The intention was that it was for optional use as needed, and not a document to work through page by page.

Included in the Guidance Notes were links to career development websites, which aimed to help kick start the self-evaluation process, and help the individuals to reflect on where they are now in terms of their careers and where they might like to see themselves in five years time.

PILOTING AND REFINING THE GMP PDP TOOLS

The GMP PDP system was designed for a specific group of African research scientists, and drew from a variety of ideas from within the literature of PDP development. As PDP had never been used in this context before, it was

important to ensure that the tools to support the PDP system for the GMP PDP Group went through rigorous piloting and refining processes. The tools were piloted with a group of postgraduate research scientists based within my institution. This group comprised of ten international students (from developing countries), and who had no experience of using PDP. Included in this group were students on Masters Programmes, and PhD students who were registered with the institution prior to the introduction of mandatory use of PDP for postgraduate research students on PhD programmes. The group were chosen randomly via an email request for help with critically reviewing a set of documentation. Using individuals who had no connection to the research process or the PDP project was done to promote objectivity and rigor into the process. The documentation was sent to each of the consenting individuals to review; and feedback was given electronically as comments on the attachments. The feedback included some changes to the layout of the documentation to improve their user friendliness – for example adding some colour to the main pieces of documentation, adding some explanatory notes to facilitate use, and considering an additional column to the PDAP to help the individual think about the issues and barriers that might prevent them from achieving their PDP goals and objectives.

To try out the practical elements of the GMP PDP system before implementing it, I sent the GMP PDP documentation and supporting materials via email to contacts, which were mostly African students from within my institution, and to colleagues visiting the African countries that

the GMP PDP Group were based in, and asked them to review this process. The feedback was that all had received the documents and were able to open them. However, the length of time (due to internet connectivity) to download the attachments varied from country to country and from region to region.

IMPLEMENTING THE PDP SYSTEM AND TOOLS

Due to the geographical spread of the GMP PDP Group within SSA, and their aforementioned specific needs (pgs. 101 – 102 of the thesis), the PDP system had to be implemented using electronic media (email). Introducing a new concept and implementing an intervention and materials remotely was one of the challenges faced in this research study. Another challenge was that, in order for the group to get as much direct support from me with their PDP, there was a limited time frame between developing, testing, refining and implementing the PDP system. This meant that I was unable to investigate and try out alternative means of implementation – such as podcasting (Manning, 2005; Cebeci and Tekdal, 2006), the use of "You Tube" style video clips, the use of mobile phone devices to receive information, and other distance learning strategies, such as developing CD Roms and sending them out to the individuals.

There were a lot of elements that needed to be implemented – from introducing myself, to introducing the concept of PDP, to introducing how PDP worked and how to use the support materials (the self-evaluation and skills-assessment documents and the Guidance Notes) to working through

their needs to develop an action plan with SMART objectives.

One strategy employed was through providing the information in sizeable chunks, and ensuring that each piece of information was understood before moving onto the next step. Introduction of the concept of PDP was done by emailing a PDP brief (Appendix 9) defining PDP, describing how it works generally and how it would work for them, some benefits to them, and the support system built into the PDP programme. Before any further information was provided, the participants were given enough opportunity to ask any questions and understand how PDP would work for them. Subsequently the Group were emailed with the Guidance Notes, the PDP documentation (tools) and a power-point presentation (Appendix 10), to help some of the documentation make sense. The power-point presentation included some technical advice on how to access the hyperlinks, and how to trouble shoot any problems with the links (slide, 3).

MONITORING AND REVIEWING THE GMP PDP SYSTEM

The PDP programme and the research project had three main monitoring systems; and these included: monitoring for the research project; monitoring by the PDP advisor; and PDP self-monitoring by the individual.

For the research project monitoring these included setting up systems to monitor and review the key project milestones, which also related to the

Action Research cycles. The monitoring system of the PDP advisor was set up specifically with the purpose of helping the group with keeping on track with their PDP. The self-monitoring system was for the group to monitor and evaluate their PDP – to help them keep on track and to reflect on their achievements and plan future learning activities.

DEVELOPING AN INFRASTRUCTURE TO SUPPORT THE GMP PDP SYSTEM

PDP is a continuous cycle of critical reflection (self evaluation), planning (setting goals), doing (undertaking a course of action), reviewing (monitoring progress) and recording (achievements). Based on the learning cycle developed by Kolb (1984), the fundamental purpose for engaging in this cycle is to derive some benefit for self improvement. However, ways in which this cycle is incorporated into the academic setting, the modes of delivery and the infrastructure designed to support it varied from institution to institution.

In developing an infrastructure to support PDP for the GMP PDP group, I started with looking at how the underpinning support worked in the UK PDP models, and then compared that to what resources we had (that were built into the GMP project), what we did not have, and what we could likely build in. For this, the work of Atlay (2006) into the modes of delivery and types of support within various PDP models was very informative. Atlay identifies five potential models of PDP delivery within the curriculum – the

discrete, linked, embedded, integrated and the extended; and within each of these models are related types and levels of provision for PDP support. Although the work of Atlay focused on integrating PDP into the curriculum of a Higher Education Institution (HEI) in the UK, and therefore was not directly relevant to the needs of the GMP PDP group, whose PDP programme sat outside of an HEI it nevertheless was still useful in that it not only provided me with an insight into how the PDP system might operate with the GMP PDP Group and what level and types of support might be needed, but also how the existing built-in support mechanisms in the GMP PDP project could be best utilised. In looking at which of Atlay's models might best serve the purpose of the group, it became apparent that none of the models fitted exactly, but all had good elements to them which could be used with some minor modifications.

For the GMP PDP Group, we did not have a curriculum or modules that we could link or embed our PDP programme into, so the most obvious choice of model for the group would be the first one that Atlay (2006) describes – the "Discrete Model" that sits outside of the curriculum. However, the level of support and commitment within this model did not fit with how PDP for the GMP PDP Group was envisaged – which was a structured and highly supported PDP that would help the group enhance and progress their career development. But with some modifications to these elements, it could serve a purpose. As part of the project, the programme had me as a PDP advisor / researcher who would be available

to provide individual support to the members of the group, so the group could be provided with more than just minimal support. In terms of commitment, this "discrete model" suggests that the PDP activities are optional and that students are encouraged to undertake them. With this group of individuals, the fact that they had asked for help with their career development (at the workshop on their support day in Yaoundé), suggested a strong personal commitment to PDP. Moreover the PDP activities that the GMP PDP Group would be undertaking would be their own identified, non-mandatory activities, so it would be hoped that the optional aspect of the model would be more a case of the group members opting in rather than opting out of undertaking any of their own individually planned PDP activities.

The "Linked Model" where PDP is parallel with the curriculum, has an explicit and supported relationship between the two; and that PDP activities are linked to the student's portfolio or progress file, was of interest to me. The GMP PDP system intended to get the individual to link their PDP activities and achievements to their CV development, rather than to use portfolios or progress files

One of the challenges that presented itself with this model was the requirement for support elements such as, induction programmes, compulsory personal tutor sessions and optional or compulsory skills weeks. Given the geographical location of the group and the aforementioned difficulties of unstable internet connectivity in Africa, it

would be difficult to support them with their PDP using a face-to-face induction programme or skills weeks.

The GMP built-in support mechanisms

The common theme that emerged from these models and their associated support systems was that HEIs should provide a structured and supportive infrastructure, with resources and training courses to support PDP. With the GMP PDP Group, all of them were registered jointly with institutions in the UK and Denmark and their home institutions – which ranged from universities, research institutions and development organisations, such as the United Nations (UN), African Medical and Research Foundation (AMREF). While the group had access to a supportive environment, either from their northern partner institutions and/or their home institutions, the amount and level of this support varied. But the built-in support system that was provided through the GMP project went some way to addressing this inequity.

Supervisory support

The project had a built-in support system to help the GMP PDP Group through their doctoral and postdoctoral research studies and projects. Each had the support of two supervisors, one from their northern partner institution and one from their affiliated home institution. Their northern partner supervisor was also someone who not only had a shared research interest but also (in some cases) links and collaborations with their home

institutions, and would visit the researcher and their research sites and projects in their home country.

PDP advisor

GMP also provided the expertise of a PDP advisor to help support the group with planning, developing, implementing, reviewing and evaluating their PDP. This was an important and much needed support (as the research later shows) as PDP was a concept new to the majority of the GMP PDP Group. Quinton and Smallbone (2008) make reference to the importance of the *"people aspect of PDP implementation"* which they see as *"far more significant*" than the technological aspects. The people they refer to are the champions and the enthusiasts, and also the personal tutors, who both Stevenson (2006) and Strivens (2006) highlight as playing an important role in the PDP process. The work of the latter authors also helped with shaping the role and responsibilities of the GMP PDP advisor.

Included in the role of the PDP advisor was an annual PDP monitoring and support visit to each of the researchers in their home institutions. These visits also provided me (the PDP advisor) with an opportunity to meet with the directors and colleagues at their home institution, and to visit their research project sites. It also gave me the opportunity (in my role as researcher) to collect data – in the form of field notes and from the semi-structured interviews.

Financial support

Each PDP group member was also provided with a small budget to help purchase the resources needed to achieve their PDP objectives. The idea was that the budget, as far as possible, would be used to purchase resources locally, nationally or regionally, as opposed to internationally. The rationale for this was that it would help the researcher to build up African networks (for example through meeting experts and peers on training courses); and also finding resources closer to home would cut down on travel and accommodation costs, and therefore help their budget go further.

Annual "PhD days"

Annual support days (called "PhD days") were two or three additional days attached to an international conference. The rationale for these days was to bring the group together in a forum to exchange experiences, practices, lessons learned, and to discuss and get some advice on their research from senior researchers, supervisors and peers within the GMP network.

The days also served a PDP purpose, in that they not only provided an opportunity for a face-to-face PDP support but also helped with promoting endorsement from the senior staff; which Quinton and Smallbone (2008) see as helping to facilitate successful engagement with PDP. The days were planned prior to the conference and composed of a series of presentations from the doctoral, postdoctoral and senior researchers; and also provided the opportunity to take into account any other business, such as officially launching the PDP programme. The timing of these days

(prior to the conference) and the content, which gave the researchers the opportunity to spend the time more closely engaged with their research, appeared to help the early career researchers go on to the conference with increased confidence.

SETTING UP AN ELECTRONIC DISCUSSION FORUM FOR PEER SUPPORT

From discussions within the network, I became aware of the benefits of the annual PhD days, particularly the discussions around the collegial environment that they fostered, and had awareness raised of how disparate the group were, located in eight countries across Sub-Saharan Africa. In an effort to retain a sense of cohesiveness, provide a forum in which peer support could take place, and keep the research discussions going, I consulted with the group about the possibility of setting up an electronic discussion forum.

With no experience of setting up or managing a discussion forum, I looked to the literature on online discussion forums, from setting one up to using, managing and evaluating one. I also had discussions with colleagues, peers and counterparts – both nationally and internationally, and from both inside and outside of the PDP network.

Looking for discussion forum models

There is a growing body of expertise within the PDP network of using electronic portfolios for recording and storing personal development records,

and some developing work on the use of "Wikis" and "Blogs" for students to use within education for peer support and communication (Grassley and Bartoletti, 2009; Erardi and Hartmann, 2008; Clarke, 2008). This was informative and helpful, but the difficulty that we had in replicating these models for our use, was that all the new technologies were being developed as "add-ons" to already established and well-functioning institutional systems; and as we did not have such in our situation, we could not replicate the models without the in-house expertise and follow-up technical support needed to develop or sustain its use.

This led me to explore different ways in which we could develop the forum. One way was to see whether my own institution (at which some of the group members were registered) would be willing to have the forum sitting within their system. But the key problem with this was that not all the group members would be able to access it, and giving guest access to a large group was not a viable option. Further discussions with colleagues and the Information Technology (IT) experts within my own and one of the project partner institutions resulted in looking at setting up an independent forum that could sit outside of an institution. Suggestions were made of using a widely accessible and free internet application such as Google, but as that meant getting the entire group to open accounts with Google, we found that a better option would be to buy an internet domain address for three years and set up the forum that way.

The GMP PDP Group designing the forum

Online discussion forums are used for a variety of reasons, including: professional development (Chen et al., 2009), online learning (An et al., 2009; Chen and Wang, 2009; Lee and Bertera, 2007; Lewinson, 2005), consumer marketing (Pitta and Fowler, 2005) and to support practice communities and user groups (Wolff, 2009) and students (De Smet et al., 2009). It would seem that with such a variety of purposes that a discussion forum could be used for, it was necessary to discuss as a group and come to a consensus about the exact purpose for their forum. For example, should it include a "chat room" type area for social networking – where there would be opportunity to engage in synchronous discussion or should it be purely for asynchronous peer support and professional development? The group felt that there was no need to have a "chat room" type element to it as personal email communication could be used for this purpose, but that it would be useful to have a shared space where information from meetings and conferences could be stored; as well as an area for announcements such as call for conference abstracts. As a group, they were also very decisive about who should be allowed to join the forum, and felt that it should be a closed forum for the group members only; that the membership should be exclusively for the immediate group and not for their supervisors or mentors. The rationale for this was cited from previous experiences by members within the group, where the decline in use of a discussion forum occurred when senior members began using it and shifted the discussion to a level that

other users found they did not benefit from, and because they could not get involved in the discussions stopped using it.

Developing the forum

Iivari (2009) examines user participation in the development of information systems, and points out the varying views. She notes that, while there appears to be consensus that user participation in the development process is important, there are divergent viewpoints in the type of participation involved. In, what she calls the "Human-Computer Interaction" (HCI) literature, the idea is that specialist users should be represented in the design process but not participate in it, whereas in the "Participatory Design" (PD) tradition – whose roots stem from workplace democracy – the idea is that, not only should there be total involvement in the process but that the users' skills and experience should be appreciated as a valuable input; and that joint working to create new technologies and work practices should be encouraged (pg. 134).

From experience of working with groups and partners to develop new systems or ways of working, total user participation and involvement is considered essential. It not only creates a sense of ownership and therefore has a better chance of the new development being successful, but also enables the development to be as a user-friendly as possible since they will understand the intricacies of its use.

Armed with all the ideas, needs and wishes from the group, I found an Information Technology (IT) specialist in one of the partner institutions who

helped to buy the domain address, set up the forum and the related systems; train me in using the system (to then cascade to the rest of the group) and to provide follow-on technical support.

Implementing the forum

The discussion forum was developed six months after the introduction of PDP. It was developed to coincide with the timing of the first of the "PhD days" in Amsterdam – where the Group would come together and I would get to meet them for the first time. The timing was so that I could have enough training and practice with the system, so that I felt sufficiently confident to cascade the training to the Group.

The launch was done face-to-face, and using a Power-point presentation (Appendix 11) with a follow up opportunity for the Group to have a "play" with the system and use the forum.

Managing the forum

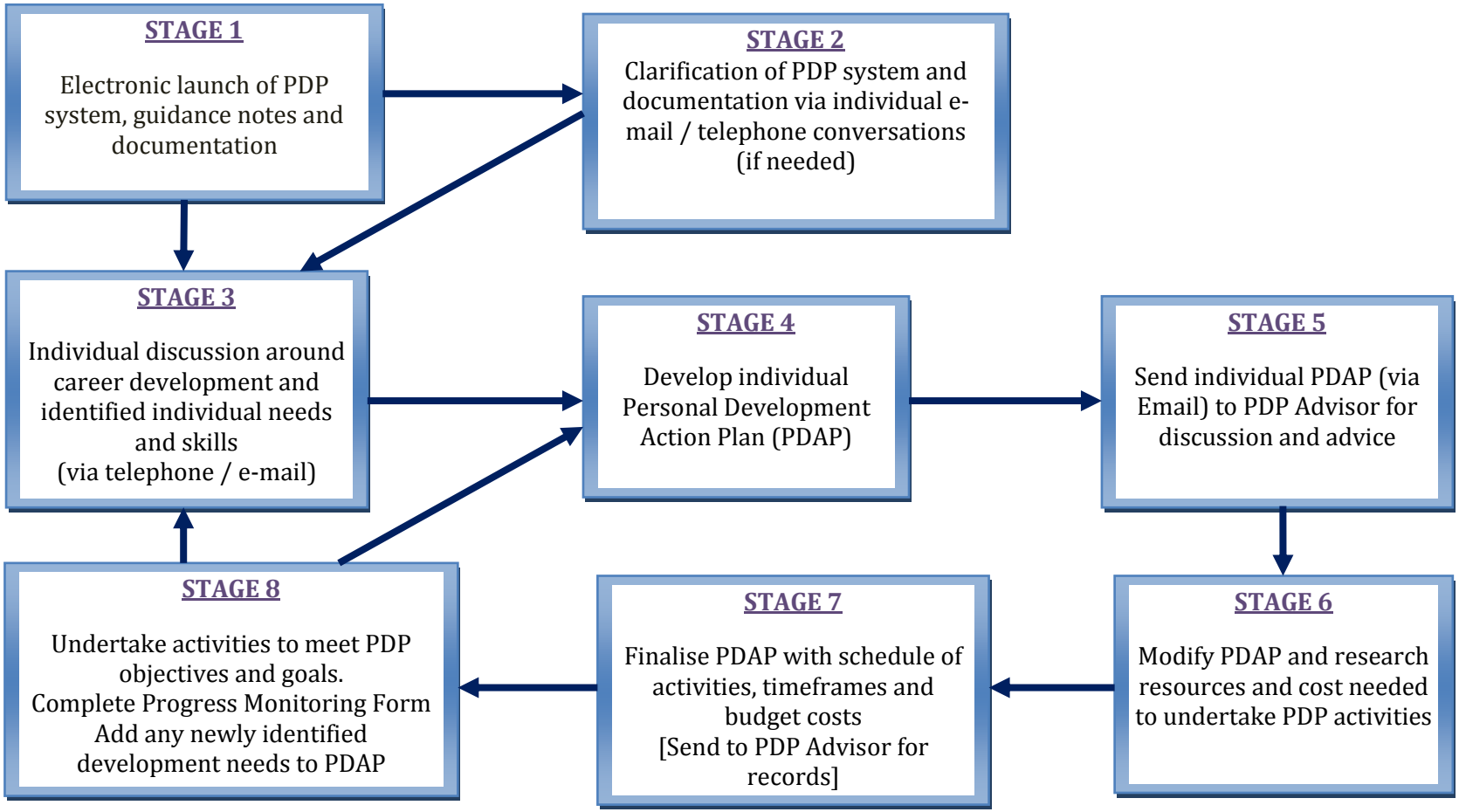
To promote further ownership of the forum (now that they had it as a closed forum exclusively for the Group members), I got commitment from each Group member to take rotational moderator responsibilities each month. These responsibilities included: posting a new discussion topic on the forum each month, keeping the topic on track, and managing any inappropriate discussion and language. The rationale for this was to ensure that the forum was being used for their own specific needs and purposes; in addition to increasing ownership of the forum.

DEVELOPING INDIVIDUAL PERSONAL DEVELOPMENT ACTION PLANS

Floodgate and Nixon (1994, pg 44) note that in implementing PDPs (plans) in their organisation, a lot was learnt about how difficult it can be to get started with developing a PDP (plan) until it becomes more habitual; and suggest "unequivocally that you cannot really help and support others with PDPs unless you have one yourself". In my capacity as a research student for which the completion of PDP was a mandatory component of my programme, I was engaging with PDP at the same time as the GMP PDP Group, so was able to use my experience, and the experience of my PhD peers, to help with aspects such as getting started with developing a PDAP.

The flowchart in Figure 6 outlines the stages that helped the GMP PDP Group develop their individual PDAPs.

Figure 6. Developing individual Personal Development Action Plans



Stage 1 saw the successful electronic launch of the PDP system, documentation and Guidance Notes to all 24 members of the group. Eight out of the 24 group members used Stage 2, and with the remaining 16, who did not need further clarification of the PDP system and documentation, they moved directly to Stage 3. When the group members reached Stage 5, we arranged a telephone meeting individually so that we could discuss their Personal Development Action Plans (PDAPs) and I could offer them further advice such as: writing their objectives in a more specific or measurable way, or putting realistic timeframes on their activities so that they did not get overloaded, or looking at ways of how they might incorporate their PDP activities into their daily work schedules, so that it was not seen as an add-on activity but as something that was integral. The telephone meeting at Stage 5 was also an opportunity to brainstorm resources, and talk through who they might approach (for example, their supervisors, mentors, colleagues) to help them with any aspects of their PDP, and finding local resources. At Stage 8, if the individual felt confident about writing newly-identified objectives into their action plan, they moved on to Stage 4. If they felt that they needed some further help from me, they moved to Stage 3.

While these stages are framed in a cycle, the iterative nature of PDP is such that the individual could move back and forth to any stages as the need arose; and this included as many email or telephone conversations with me that they felt they needed.

SUMMARY

This chapter discussed how a PDP system, tools and support mechanisms were developed and implemented with a group of doctoral and postdoctoral research scientists based in Sub-Saharan Africa. A needs analysis undertaken before development showed that the intended use for PDP was primarily for skills development to enhance their career development as researchers in Africa. Outlined were the challenges faced with developing a PDP system and tools from scratch, and for a group within such a specific context. The development involved searching for evidenced-based PDP systems and tools for research scientists, from which this system might be adapted – and showed how some of the ideas from the literature were used to adapt and develop a PDP system and set of tools and supporting materials for this group.

The chapter also described how it added to the already built-in support mechanisms to develop an infrastructure to support the PDP system; and in particular, the development of a discussion forum for peer support. It also briefly described the monitoring and reviewing involved within the PDP processes and research study.

Discussion arising from this chapter around the development and implementation of the PDP system for this group will be taken forward in the next chapter, where the experiences of the group using PDP and the PDP system, tools and processes are used in the evaluation.

CHAPTER 5

EVALUATION: REACTION TO PDP, THE GMP PDP SYSTEM, TOOLS AND PROCESSES

INTRODUCTION

The discussion from the previous chapter on the development and implementation of the PDP system and individual Personal Development Action plans (PDAPs) is used to inform this chapter, as the experiences from the GMP PDP Group are used to evaluate PDP, the system, tools and processes. The study evaluation uses an adapted version of the "Four Levels of Evaluation" framework by Kirkpatrick (2005), and is divided into four sections: reaction, learning behaviour and results (See Table 2, pg. 71). This chapter deals with the first of these levels – and evaluates the reaction of this group of researchers, as it aims to answer the research question of: "how do these researchers feel about using PDP, the system, tools and processes?" To help achieve this, data is derived from an initial reaction survey questionnaire, the PDP documentation completed by the individual, Nominal Group Technique (NGT), an online Focus Group Discussion (FGD) and semi-structured interviews.

EVALUATION LEVEL 1 - REACTION TO USING PDP

Level one in the framework focuses on the group's reaction to using PDP. To evaluate this, data were collected from two main sources: an initial reaction survey questionnaire and Nominal Group Technique (NGT). The

initial reaction survey questionnaire was used to gather demographic data and to gain some insight into the group's experiences of using PDP. In addition, the NGT was used to (a) supplement the data generated from the questionnaire, and (b) elicit views on the positive aspects and difficulties or issues faced with using PDP – and to provide the group with the opportunity (through group discussion) to offer some possible solutions to these difficulties or issues.

The geographical location of the group (based in eight countries in Sub-Saharan Africa) presented the research process with some challenges; and collecting data from methods that lend themselves to face-to-face interaction was one of them. The opportunity of a face-to-face meeting with the group (at one of their PhD days, six months after the electronic introduction of PDP) was used to collect data from the NGT and the initial reaction survey questionnaire. Figure 2, pg. 20 gives an outline of these and other key events.

Table 7 uses the data from the questionnaire to give a representation of the group; and outlines their demographic information and previous experiences with using PDP.

Table 7

Demographic information of 23 group members and their experiences with PDP

	n	%
Gender		
Male	17	74
Female	6	26
Experience with using PDP before the GMP PDP programme		
No previous experience	19	82.6
Staff appraisal at work	2	8.7
As part of a UK university PhD programme	2	8.7

Data were gathered from 23 of the 24 group members, as one questionnaire was not returned. The results from the table showed that the majority of the group had no previous experience with using PDP. The group members with experience of using PDP within a UK university setting, were registered with a university in which PDP was a mandatory component of their PhD programme. So for these individuals, they were involved with two PDP programmes.

The NGT was used as an activity to gain data from the entire group in a face-to-face forum. The group were asked to think individually about the positive aspects and the difficulties or issues they faced with using PDP. These were then discussed in small groups before being discussed within the wider group. The resulting data was used to supplement and support the responses from the initial reaction questionnaire questions of: what

were the best and worst things about using PDP, and what were the main obstacles to using PDP. Since the data yielded from each of these methods were similar in nature, it made sense to combine them and present the results and analysis in a synthesised form in parts of this section of the study.

The overall results showed a positive response to PDP. The positive aspects and best things that the participants cited were themed into three main areas. These related to: their careers (focus, future direction, defining and evaluating career achievements); reflection (analysis and self evaluation); and planning and opportunity to develop skills. There was also an area of unrelated comments, which I have named "other."

THE POSITIVES ASPECTS OF USING PDP

Career

In the results relating to careers, comments from the group members centred on: focus, future direction, defining their career and evaluating career achievements. Several group members made reference to PDP helping them to think more positively about their future and *"in more detail"* about where they might be *"in five years"* or *"ten years time."* One said that *"this was vague before"* while another felt that it gave the sense of *"being master of my own career destiny."* This last comment resonates with the suggestion that Baruch (2006) makes in people needing to become masters of their own destinies if they are to strive in the boundaryless career model; the career model that Baruch and Hall (2004) see as typical of the scientific research career. Collectively, from the NGT

group feedback, one of the small discussion groups felt that using PDP *"made us more enthusiastic / optimistic about our future."*

Reflection:

From the results that were themed into the area of reflection, the comments from the group suggested using reflection for analysis and for self evaluation. One of the group members particularly felt that using PDP *"helped me to analyse my strengths and weaknesses more objectively"* and *"helped me realise that I had more strengths than I thought."*

Although Aukes et al., (2008) propose that the application of reflection does not automatically lead to insights and deeper learning, especially when its purpose remains unclear and reflection is unsupported, Moon (2001) still sees PDP as involving different forms of reflection and reflective learning; and cites Dewey's (1933) description of reflection as *"a kind of thinking that consists in turning a subject over in the mind and giving it serious thought"* (cited in Moon, 2001, pg.2). This is something that some of the group clearly did when they said that PDP *"helped me to think thoroughly about myself and strengthened my conviction in my career planning and development"* and that *"it made me reflect on what I actually wanted to do with my professional life."*

Opportunity to plan and develop skills

In the third main area of the positive aspects and best things about using PDP, many of the group members felt that PDP provided them with the opportunity to develop the skills they needed to assist with their career progression. One in particular felt that it not only helped to focus on areas that needed further development but also, *"allowed me to explore areas I may not have ventured into if it weren't for writing out my PDP"* – while another was *"amazed to realise how many skills I have but possibly just need improvement."*

Other

In the area named "other" some of the unrelated comments helped to give an all-round picture of how the group felt about PDP. These included comments, such as: *"It made me realise that I enjoy my work", "I was happy that I was getting support to do what I had always postponed to do."* One group member felt a positive aspect about using PDP was *"learning about the PDP concept for the first time"*- and one felt that *"it was challenging"* – but this was seen as a positive rather than a difficulty or an issue.

While the overall response from the group was positive in nature, there were some group members who felt differently about PDP. One particularly felt that PDP was not very relevant for his needs, as he was well established in his career and had a contract with his institution for the next five years; while another admitted that his workload left him little

time to focus on his PDP. Another group member felt that PDP was relevant to a certain extent, but that it was the *"availability of job opportunities"* that would determine which way his career might develop after his PhD studies.

DIFFICULTIES AND ISSUES WITH USING PDP

The data used to evaluate this section were derived from the NGT of "what were the difficulties or issues faced with using PDP?" and from the responses in the initial reaction survey questionnaire of, "what was the worst thing about using PDP?" and "what would you say are the main obstacles to you using PDP?" A synthesis of the data showed that the overall responses related to five main areas: time, self, planning, resources and budgeting. As before there was a sixth area of unrelated comments, which I have named "other."

Time

Time, was cited as one of the main issues with using PDP. Of the 23 group members who completed the initial reaction survey questionnaire, 11 (48%) cited time as being the main obstacle. *"Time not always available for my PDP"* or finding the time to *"formulate, write or implement my PDP"* was stated as big obstacles; and with one group member admitting that, *"I was too busy to give the process the required attention."* Making the time available for PDP does not appear to be an uncommon characteristic of PDP users. In a survey on attitudes to PDP and usability

of an undergraduate PDP system at the University of Ulster, Turner (2007) found that the respondents felt that the worst thing about the PDP system was that "it is hard to get time to use the system" (pg. 30) and the worst thing about PDP was that it was "time consuming to complete all the relevant sections, due to other commitments on time e.g. assignments" and that it "can be time consuming" (pg. 32). Similarly, in an evaluation on PDP electronic resources at the Open University, Jelfs and Kelly (2007) make reference to the "worries about eLearning imposing extra workload burdens on 'time poor' adults struggling to fit study into busy and demanding lives" (pg. 524).

Self

In the difficulties relating to self, there were some expressions of self doubt – for example, *"The prospect of facing up to the challenges i.e. cannot lie to myself", "realised that I am not getting any younger"* and *"deciding whether I need a PDP."* With anonymity of the responses, I was unable to explore further, and establish the meaning behind some of these comments. On the one hand it was good to get such honest feedback from the group but on the other, it did help me to think a little more about how I might improve the individual support provided to each of the group members – in order to help allay some of these concerns.

Planning difficulties

In terms of planning and budgeting difficulties, the responses within this area provided some useful insight into some of the issues with the action planning process, with some of the participants admitting that they found planning:

> *"hard to start"*
> *"difficult to actually start thinking about the PDP"*
> *"Projection into the future"*
> *"Determining what was involved in setting my goals"*
> *"Setting realistic objectives"*
> *"translating into the words the vague ideas I had about my carreer (sic)*
> *"Prioritising my activities"*
> *"Limited in terms of how much to put down (I have a bigger to do list maybe) vs budget"*

Some of these planning difficulties faced by the participants were similar to the difficulties faced by myself as a research student engaging in PDP (as a mandatory element of my PhD programme) at the time. In using my experience of planning my own PDP, as Floodgate and Nixon (1994) suggest – as reported in chapter 4 (pg. 130) of the thesis – I was able to facilitate and support the participants with their own individual PDP development.

Resource and budget difficulties

In relation to resources, the responses from both the NGT and the initial reaction survey questionnaire ranged from, difficulties with, *"where to get the skills, how, what institution?"* to "*choosing the best activities for funding"* to *"lack of facilities / expertise."* One group member found that, *"I realise it requires more resources than was being allocated, so could not plan as needed."*

At a practical level, some of the group members found that they lacked the budgeting skills needed to *"cost and spread money to cover more ground", "estimate realistic costs for some activities", "allocate funds to activities"* and *"budget for all that I wish to achieve."*

Other

Comments which came into the area of "other" such as, *"Conflict of interest with other stakeholders"* and *"lack of guarantees that the career path would proceed as planned within the environment"* – gave me some insight into some of the less than supportive situations in which these individuals had to manage. It also helped me to understand some of the realities of trying to plan a career in Africa.

EVALUATION LEVEL 1 – REACTION TO THE GMP PDP SYSTEM

The GMP PDP system – developed specifically for the GMP African researchers - comprised of tools (documentation) and support

mechanisms designed to help the group navigate their way around the GMP PDP cycle. The cycle is integral to the GMP PDP system, and incorporates the essential PDP processes planning, setting targets, developing action plans, reviewing progress, recording achievement and evaluating progress (See Figure 5, pg 110).

GMP PDP TOOLS AND SUPORTING MATERIALS

To support the group working through each of the stages of the PDP cycle and develop their Personal Development Action plans, a set of documentation and supporting materials were developed. The documentation consists of three main pieces: a Personal Development Action Plan (PDAP), a Progress Monitoring form, and an Annual Report. The supporting materials consisted of: comprehensive and interactive Guidance Notes, a Self-Evaluation form and a Skills Assessment document.

Keeping the design of the document simple is something that Floodgate and Nixon (1994) advise in the development and implementation of PDPs (plans). In this research study, this was done to try to mitigate some of the challenges faced with introducing a new concept, system, and processes via remote means; as well as taking into account the already significant workloads that these individuals had to cope with.

An initial reaction survey questionnaire and an online Focus Group Discussion (FGD) were used to gather data on what the group members thought about all the elements of the PDP system, documentation,

implementation and support. Data were gathered particularly to evaluate (a) the documentation to support the processes of the PDP cycle: the Personal Development Action Plan (PDAP), the Progress Monitoring Form and the Annual Report, and (b) the supporting materials accompanying the documentation – the Guidance Notes, Self-evaluation and Skills-assessment documents.

Table 8 gives a broad view of the results from the initial reaction survey questionnaire, where the participants were asked to respond to statements using a five-point Likert-scale system ranging from “strongly disagree” to “strongly agree.”

Table 8
Reaction of 23 group members to the PDP system, documents, implementation and support

	Strongly Agree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	No response
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1. I found the introduction to the PDP, via the electronic media clear and easy to follow			3(13)	14 (61)	6 (26)	
2. I found the format of the PDP Action Plan easy to complete			1 (4)	17 (74)	5 (22)	
3. I found the Guidance Notes useful in helping me to complete my PDP Action Plan			3 (13)	9 (39)	11 (48)	
4. I found the Self-assessment document useful to help me with deciding my long-term career goal		2 (9)	4 (17)	11 (48)	6 (26)	
5. I found the Skills-assessment document a useful tool to help with developing my personal development goals and objectives			4 (17)	13 (57)	6 (26)	
6. I found the websites and links in the Guidance Notes useful tools for my career development planning		2 (9)	4 (17)	11 (48)	5 (22)	1 (4)
7. I found having a named individual to support my PDP is essential		1 (4)	5 (22)	7 (30)	10 (44)	
8. I found peer support useful to help me with my PDP		2 (9)	7 (30)	10 (44)	3 (13)	1 (4)

Personal Development Action Plan (PDAP)

The multifunctional PDAP was the main piece of documentation. It incorporated the individual's long and short-term planning, and included their overall career goal(s), personal development goals, objectives, a schedule of activities fitted into a timeframe and the evidence and date of achievement of their goals and objectives. The PDAP was developed once the individual worked through the self-evaluation, setting targets and action planning stages of the GMP PDP cycle (see Figure 5, pg. 110). However, the PDP cycle like Kolb's learning cycle (1984) is an iterative process, so remains a dynamic document that is returned to for updating, modifying and changing, as needs alter.

Recorded and dated in the PDAP are the individual's achievements (PDP and general achievements), which served as a repository of information from which to draw when updating or building their CV.

I wanted to know whether the group found the PDAP document easy to complete, because while the format appeared simple enough, its multifunctional purpose did not seem immediately easy to comprehend.

Results from table 8 (pg. 150), showed that 22 (96%) agreed that they had found the format of the PDAP easy to complete, and the remaining 1 (4%) neither agreed nor disagreed. To get a broader view of their experiences of completing the PDAP, the group were asked to respond to an online FGD. Some of the discussion threads relating to views on the PDAP are presented below.

FGD Number 1

Joined: 06 Jun 2007 Posts: 10	Posted: Mon Feb 25, 2008 3:30 pm Post subject: quote Online FGD I have to admit that I did find the layout of the PDP Action Plan somehow confusing and cumbersome. It needed a bit of imagination to piece together the various components i.e. from goal to objective to activity because they had to be related. But for some reason I cannot find an easier way of linking them (of course in my case I used the numbering system as an identifier). I don't know adding rows to columns would make it easier or make the whole layout look meesy.
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FGD Number 2

Joined: 07 Jun 2007 Posts: 12	Posted: Wed Feb 27, 2008 10:00 am Post subject: Online FGD Action Plan: Tables work for me, and with some flexibility to meet personal needs is good. For example, like [redacted] I used numbering for mine and is ok, but in case I wanted to add more rows if it fitted with the number of activities, it should also not matter.

FGD Number 3

Joined: 16 Jun 2007 Posts: 7	Posted: Mon Mar 10, 2008 7:21 am Post subject: quote I like the way the action plan is set out especially with the long term goal at the top as it reminds you of where you are headed at a glance.

It was clear that despite the majority of the group finding the PDAP easy to complete, there remained some issues with the format of the document. The discussion thread from *FGD Number 1* (pg. 152) was from a group member who creatively overcame the issues experienced and went on to develop a focused PDAP, with clear SMART objectives, and very innovative ways of achieving them. The group member in the discussion thread *FGD Number 2* (pg 152) adapted the PDAP to meet personal needs; so it essentially became a bespoke document that she felt comfortable using. This worked for her, and the ideas that she put forward from her individualised format of the PDAP were used to improve the document for future use.

The Guidance Notes

The Guidance Notes (Appendix 8) were developed to help the group with completing their PDAPs. It was divided into ten sections and covered information ranging from an introduction to PDP to Frequently Asked Questions (FAQs) and troubleshooting. With each section hyperlinked, the intention was for optional use as required – and this was made clear to the group members in the PDP introduction. The results in table 8 (pg. 150) showed that, in statement 3, a high proportion 20 (87%) agreed that the Guidance Notes were useful in helping to complete their PDAP, while 3 (13%) neither agreed nor disagreed. With the majority of the group in agreement, it would suggest that they felt that this was a useful resource to help them with their PDAP development. To kick start the self-evaluation

process, and help the individuals to reflect on where they are now in terms of their careers and where they might like to see themselves in five years hence, links to career development websites were included in the Guidance Notes (Appendix 8). The results showed that 16 (70%) of the group agreed that they found the links to the websites useful in helping them to think about their career development, while 2 (9%) disagreed and the remainder of the group neither agreed nor disagreed.

Self-evaluation document

The Self-evaluation document was a simple document that the individuals could use in conjunction with the help notes and websites in the guidance notes or as a stand-alone document. It was developed to help the individual think about their interests and values - what it is that interests and motivates them, both personally and professionally – and was intended particularly to help those individuals who were still considering which way to go following their PhD studies. In evaluating this document, 17 (74%) found the document useful for planning their career development, while 2 (9%) disagreed and 4 (17%) neither agreed nor disagreed. It would seem from the results, that the group found these elements of the supporting materials useful resources to help them plan their career development.

Skills-assessment document

Another supporting piece of documentation was the Skills Assessment document; devised to help support the participants through the process of developing their personal development goals and objectives. The document was designed to get the individual thinking about the skills that they are good at and focusing on the skills that they felt needed improvement; and relating these to their personal development action planning and career development. In asking the group members to respond to the statement of "I found the Skills Assessment document a useful tool to help with developing my personal development goals and objectives" 19 (83%) of the group members agreed with the statement and 4 (17%) neither agreed nor disagreed. While there is no contextual data to explain why 4 (17%) of the group members were unequivocal about the usefulness of this document, some suggestions might be put forward to help explain it. This document, like all the GMP supporting materials were for optional use; so a possible explanation might be that the participants did not use the document – either through not needing it (due to an already good understanding of their skills) or (with 11 (48%) citing time as the biggest obstacle to using PDP) not having the time to invest in completing it. Or it might be that they did use it and could not decide whether it was useful for their needs or not. Further contextual data would be needed to evaluate these unequivocal responses fully.

The Progress Monitoring and Annual Report forms

The Progress Monitoring form (Appendix 7) used questions adapted from the reflective cycle developed by Gibbs (1988) and was designed to help the individual to reflect on the progress of their PDP. The other purposes for this document, and the Annual Report form (Appendix 8) – which was a simple template to briefly outline PDP activity and future PDP plans – were to help the individual keep on track with their PDP, provide a basis for future PDP planning, and act as a motivational means to encourage the individual to keep going with their PDP. The Annual Report form also provided the budgetary information (expenditure from their PDP budget) required for the GMP annual reporting.

The discussion threads below are from the online FGD, in which the participants were asked to comment on the PDP documentation.

FGD Number 4

Joined: 07 Jun 2007 Posts: 12	Posted: Wed Feb 27, 2008 10:00 am Post subject: Online FGD Annual report: Liked this the most coz brief. Monitoring process form - worked ok. My main issue is when I have several of them on each activity and I need to quickly refer to the lessons learnt or whatever. Being table crazy, I added a table to this form, similar to Action Plan, and I added a column for specific activity after goals. In the goals column, I can also put in brackets the balance of my allocated funds. This way I have one document for monitoring progress, which I also draw from when it comes to doing the annual report.

FGD Number 5

Joined: 16 Jun 2007 Posts: 7	Posted: Mon Mar 10, 2008 7:21 am Post subject: quote I agree with [redacted] I particularly liked the monitoring and progress forms. I found these forms useful, coz like [redacted] they are short so not time consuming and they help you to plan for the next time your take a course. It also provides us with an opportunity to critically think of the course attended and its benefit.

While these two discussion threads cannot be seen as representative of the entire group, it is still noted that brevity and the *"not time consuming"* nature was a positive feature of these documents. It was good to see in both discussion threads that the Progress Monitoring form was being used for its intended purposes; and with the opportunity for critical reflection being noted in *FGD Number 5.*

Overall, the feedback from the group was positive, and with some good suggestions to help make improvements to the PDP documentation and supporting materials. It was unfortunate that the Guidance Notes was not one of the pieces of documentation that the participants chose to review on the online FGD because with no data, I was unable to assess how much, or which sections in particular were used to assist the group with developing their planning; or indeed why some elements of it (for example, links to the website) were not useful for some members and not for others. On reflection, this is a lesson learned and next time, will ensure that the data

collection tools include questions to elicit this useful contextual information.

EVALUATION LEVEL 1 – REACTION TO THE PDP PROCESSES

Implementation of PDP and the GMP PDP system

Due to the geographical location of the group, the introduction and implementation of PDP and the PDP system had to be undertaken using the medium of electronic media (email). Introducing a new concept and implementing an intervention and materials remotely, and in countries with unstable internet connectivity, was one of the challenges faced in this research study. Another challenge was that, in order for the participants to get the optimum time from the project, in terms of support from me with their PDP, there was a limited time frame between developing, testing, refining and implementing the PDP system. This meant that I was unable to investigate and try out alternative means of implementation.

To avoid overwhelming the group with too much information in one go, all the information was sent out in small chunks – starting with me introducing myself, then a brief on PDP (Appendix 10) – which introduced the GMP PDP programme, the concept of PDP, an outline of what was expected of them in terms of commitment, and the support that they could expect GMP. This method of sending information out in stages was something that was commented on within the online FGD.

FGD Number 6

Joined: 16 Jun 2007	Posted: Mon Mar 10, 2008 7:21 am Post subject: Online FGD quote The information before hand was not at all overwhelming the presentation you sent us was a good idea because it gave the information in bite size and it was easily digestible.

Once I was assured that all this information was received and that all the email addresses were working, I sent the PDP Guidance Notes (Appendix 9) and an accompanying presentation on "Completing your Personal Development Planning Documentation" (Appendix 11) – which included some technical support to ensure that the hyperlinks were activated, so that the maximum benefit might be gained from the Guidance Notes. This was followed up by email and telephone support and advice, to help the group think about their PDP.

To evaluate this method of implementation, the same Likert-scale response system ranging from "strongly disagree" to "strongly agree" was used, in asking the group to respond to the statement of: "I found the introduction to the PDP, via electronic media easy to follow." Of the 23 group members who responded to this statement, 20 (87%) agreed while 3 (13%) neither agreed nor disagreed. This would indicate that, despite the anticipated internet difficulties, this electronic method of implementation worked for the majority of the group. From the online FGD, the only

comments with reference to the implementation process, related to the volume of information sent out. In the *FGD Number 6* (pg. 159) discussion thread, three people commented on the information being *"bite size"* and *"easily digestible"*, while two other members of the group said that the volume of information was *"sufficient"* and *"ok."*

Despite the introduction and implementation of PDP being something that was accepted by the group as a strategy to help them enhance and progress their career development, there was still a clear need to ensure that they felt ownership of the process, and was aware of the need to "listen carefully and respond to the voice of the user" – in order to "tailor the vehicle to their needs" (Floodgate and Nixon, 1994, pg 46) – which was seen as key in the implementation of PDP.

Action Planning – developing individual action plans

One of the essential elements in the PDP process is action planning (Jackson, 2004; Gough et al., 2004) – and to support this process in the GMP PDP system, the Personal Development Action Plan (PDAP) was the key piece of documentation. Together with the supporting documentation and me (as PDP advisor) to help with advice and support, the group were helped to develop individual PDAPs – which outlined the goals and objectives that they aimed to achieve in order to work towards their long-term career aim.

Jackson (2004) sees reflective, planning and doing skills as being essential to PDP. However, these are not skills that individuals necessarily possess

when starting out on their PDP. This was one of the lessons learned in this research study. Figure 6 (pg. 135) outlined the stages that were used in the development of individual PDAPs; and to help me to ensure that each group member would receive the level of support required for their needs, I set up a system to monitor and track how each were progressing with the development of their action plans. This monitoring system also served as a data collection tool. The results from this data (Table 9, pg 159) shows how the participants approached the development of their PDAPs, and the average time when the development of individual PDAPs were completed.

Table 9

Results from 24 group members on development of individual PDAPs

No of participants n (%)	Attempt made in developing Individual PDAP	When PDAP development was completed
8 (33)	With varying levels of support and advice from PDP advisor, attempt to develop PDAP was made immediately following introduction of PDP	On average, development of PDAP completed within three months of being introduced to PDP
11 (46)	With help and advice from PDP advisor, attempt made at developing individual PDAP but did not feel confident to complete until face-to-face meeting (six months after introduction of PDP) to talk through plans	On average, development of PDAP was completed within six months of being introduced to PDP
5 (20)	Despite constant offers of help and support from the PDP advisor, on how to get started with PDAP development, no attempt was made with development until the face-to-face meeting - six months after introduction of PDP	On average, development of PDAP was completed within nine months of being introduced to PDP

I wanted to find out why there was such a difference in responses to developing individual PDAPs, since this appeared to be a very motivated group of individuals, and who (albeit it indirectly) initiated PDP. The results presented in Table 8 (pg. 150), showed that the majority 22 (96%)

found the format of the PDAP easy to complete; which would suggest that understanding the action plan format itself was not a major difficulty. However, the results from the NGT data did show that some difficulties were encountered with planning. This did make me question whether there might be a deficit somewhere – either in the skills needed to complete the action plans, or an understanding of the concept and processes of PDP. It also made me consider other reasons such as, the lack of time to start developing their individual PDAPs, and the learning styles of these group members – particularly of those who needed the face-to-face interaction to help them either complete (or in the case of the 5 group members in Table 9) start the development of their PDAPs.

Motivating users to engage with PDP appears to be a universal challenge, and something that Clegg and Bradley (2006) see as difficult to achieve since the structured reflection of the PDP process is a higher order meta-cognitive skill that some users may lack. Quinton and Smallbone (2008) note how PDP implementers in English universities used motivational strategies such as linking PDP to confidence building, customising PDP to the needs and relevance of the user, and ensuring clarity of purpose, to promote engagement with PDP.

Since these were strategies used from the literature and incorporated into this PDP programme, I needed to understand the results in table 9 – and particularly why some participants engaged immediately with PDP and others did not.

To try to understand this further, I looked to the literature relating to the implementation of interventions; and while there are various models and theories that are used to explain why and how innovations become assimilated into practice, the one borrowed here is from the work of Rogers (1995) in adopting innovations (albeit to explain the adoption of technologies). Rogers lists: "simplicity, trialability, observability, relative advantage and compatibility" as five perceived features of the innovation that largely determines its acceptance. Wilson et al., (2000) add "support" as a sixth feature to this list. They see these features as important benchmarks when a person considers adoption or rejection of an innovation; and with adoption more likely with the increased numbers of features present.

Rogers (1995) also notes that individuals respond very differently to innovations; and with some tending to be more change-oriented than others. With this in mind, he devised a typology, which classifies people on a scale of their receptivity to innovation. Table 10 (pg. 165) outlines this typology.

Table 10.

Rogers (1995) typology of adopting innovations

Description	Receptivity to innovation
Innovators	A small minority of the population (2-3%) willing to invest the time to learn and adapt to the demands of the innovation
Early Adopters	Early Adopters (13-14% of the population) often respected, opinion leaders that provide credibility to successful adoption to the entire participants
Early Majority	(34% of the population) who are willing to adopt in due time but unwilling to risk exposure in the process
Late Majority	(34%) who are sceptical of change and guard their interests, but often prompted into action by peer pressure
Laggards	(~16%) of the population who consistently resist to change and only comply out of pressure or necessity

While some elements of this classification might be recognised in this study – for example, in the group members who developed their plans within three months (*early adopters*), those who started but waited until their one-to-one meeting with me to complete them (*early majority* and possibly *late majority*), and the ones who did not attempt any development until they had their one-to-one meetings with me (*laggards*) – this typology does not explain why this is the case. To help explain this, I used the data from both the NGT – where the group members were asked to list the difficulties and issues that they had with using PDP – and the data from the initial reaction survey questionnaire, in which the group were asked to say what the main obstacles were to them using PDP. While time was

cited as one of the major difficulties with starting the development of their PDAP, practical difficulties as well as difficulties (or perceived difficulties) with skills were also cited. Some of the practical difficulties included a lack of, or finding suitable resources, facilities, expertise, managing conflict of interest within the workplace, and finding it hard to start. The difficulties with skills were mainly around working out a budget, estimating costs, putting realistic timelines on activities, and setting realistic objectives.

Skills deficit

Setting realistic objectives was one of the skills deficits recognised when analysing the initial PDAPs. In developing supporting materials to help the group develop their PDAPs, I did not specifically develop materials to help with how to set goals and objectives, mainly because I assumed that for individuals who had experience of developing and managing postgraduate research projects, they would already have these skills from developing their research plans – and that these would have included planning and setting realistic and measurable objectives and milestones. This was an assumption that was proved incorrect, since some of the participants did find this difficult to do – as seen in the data from the NGT.

Finding it hard to start was explained in some ways by one of the group during the discussions on the online FGD. To set their PDP goals and objectives, they had to first identify these as development needs; and in

order to do this, they needed to undertake a self-evaluation. This was to help them to reflect on what they had now (in terms of skills and knowledge) and what they needed to develop in order to help them get where they want to be (in five years hence). Identifying development needs is not always an easy thing to do, as needs may not necessarily be something that is known until the need for it arises. This was indeed expressed by one of the group members in the online FGD, who saw the process as crucial.

FGD Number 7

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Joined: 06 Jun 2007 Posts: 10 **Back to top**	Posted: Mon Feb 25, 2008 3:30 pm Post subject: Online FGD quote 4. The most crucial process to me really was the skills identification process. These would be categorised into behavioural and technical skills. Behavioural skills that included issues like personable, good communicator and a whole list of them are very difficult to assess by self. I have still not found a better way of identifying these. On the otherhand, technical skills (e.g. project planning) are easy to identify. So I would suggest that a better and simpler way of identifying ones skills be provided or we should be trained in doing this.
	profile pm email

This group members is right in saying that the process of self-evaluation is crucial – particularly for PDP and career planning. Yet it is a difficult process for most people, as they either tend to be too hard on themselves or

lack the self awareness to undertake a true evaluation of themselves. *"...a better and simpler way of identifying ones skills be provided or we should be trained in doing this"* is one of the lessons learned as a result of this research study – in that, it is not just about providing the means (PDP and a PDAP) but also about making sure that the individuals are equipped with the skills to undertake the processes effectively.

MONITORING AND REVIEWING

Three main monitoring systems were set up within the GMP PDP programme and the PDP project. These included: the research project monitoring, the PDP advisor's monitoring, and the individual's PDP self-monitoring and reviewing.

1. **PDP project monitoring**

To keep track of what was working and what needed improving as part of the Action Research change process within the PDP project, a number of monitoring schedules needed to be put in place. These included monitoring and reviewing the key PDP processes and research milestones, such as, the stages involved with the development of the PDP system (planning, developing and piloting); the key PDP processes such as, the introduction and implementation of PDP and monitoring and reviewing the development of the individual PDAPs. Each of these schedules also generated the data needed to help with making the improvements needed for future use.

2. PDP advisor's monitoring system

For the PDP advisor, a system of monitoring and reviewing schedules (through setting reminders within my Microsoft Outlook calendar) was set up specifically to help the participants with their PDP. This included: the monitoring of individual PDAPs, to help keep the individual on track, facilitate any part of the PDP process, (such as help with finding resources), as well as ensuring that the formal annual reporting system was kept on track. It did not review the participants' personal progress monitoring, as this element of the GMP PDP system was for their personal reflection and thoughts; and I felt that reviewing these as part of the PDP system might influence the way in which the individual wrote them.

Overall this monitoring system worked well; but there were some elements that needed consideration for improvement and future development. The system worked well because, (a) the relatively small group of 24 made it an easily manageable size and (b) the PDP advisor was a additional resource to the PDP project, and therefore able to devote the time to doing this. However, such a resource is unsustainable and expensive, so in repeating this initiative, there would need to be some consideration given to a more sustainable method of reminders and prompts being built into the programme – and a way of doing this would be to have a prompt system set up through automated messaging within an electronic system. However, further consideration should also be given to the notion of how far tracking and reminding users to ensure that their PDP is on track,

should be built in as a sustainable element of a PDP programme. While it is accepted to have it built in as a necessary element of a PDP programme, to help individuals at the beginning of the process, if it needs to be a considered as a sustainable element of the programme to help users who are familiar with the concept and processes, then it becomes arguable as to the purpose of PDP, and for whom.

3. PDP self monitoring system

This was a built-in system for the participants to monitor and evaluate their PDP – to help them keep on track and reflect on their achievements and plan future learning activities. This was done through a self-reporting process of progress monitoring and annual reporting; and used the PDP documentation to help guide monitoring and review. With this monitoring system, while the documentation to support the system worked well, in that it was brief, served a particular purpose and was flexible for the individual to adapt (see comments from individuals in *FGD numbers 4* (pg. 156) and *5* (pg. 157) – as a process, the self reporting nature of it proved more challenging to maintain than anticipated. The annual reporting part of the monitoring system worked well; even though it could be argued that the reason for this was because of the PDP advisor's monitoring system of reminders and prompts to submit Annual Reports. However, the progress monitoring part of the system was harder to evaluate, since it relied on the individual reflecting on their own progress (which was encouraged after each PDP activity) – but because this was the individual's personal

reflection on their learning, it was not seen by anyone other than the individual, so there was no way of knowing whether this was being done or not. With reflection being an essential element of the PDP process (Jackson, 2004) in order to help individuals to plan for their personal, educational and career development, and become independent, effective and confident lifelong learners (QAA, 2001), there needs to be some input to ensure that this is being done; but without reviewing the individual's personal reflection and thoughts.

Another challenge lies with the nature of self reporting. It is such that, it relies on the individual to be honest and accurate with the information that they are reporting; and while there was no reason to suggest that the participants in this study were less than accurate with their reporting it still remains a point for consideration when replicating the PDP programme. A way of doing this would be to cross check the individual's PDP progress with their record of achievement and their updated CVs.

EVALUATION LEVEL 1 - REACTION TO THE GMP PDP SUPPORT SYSTEMS

SUPPORT AND RESOURCES

PDP is seen as a structured and supported process (QAA, 2001) that facilitates individuals to become independent, confident self-directed learners. The GMP PDP Group benefited from being part of a highly supportive programme. The main reason for this was to compensate for the fact that these individuals, had to manage a new process (with the concept of PDP being new to 19 (83% of them) in varying supportive environments in their home institutions in Sub-Saharan Africa; and for the group members who gave up their jobs to take up the GMP-sponsored PhD, unless they had research projects to situate in their affiliated institutions on their return, they would have no home institution to return to, and therefore fell between the supportive environments of an educational institution (a university or a research institution) and the workplace. The geographical location of this group also meant that much of their support was not likely to be via face-to-face interaction, so additional support mechanisms were put in place, to try to mitigate the difficulties faced with this. For these reasons, the GMP ensured that, in addition to the support provided by the group members' home institutions, they would also benefit from a good PDP support system – which included: financial support (an individual budget to help purchase resources needed to achieve PDP goals and objectives); human resource support, not only PDP support from a PDP

advisor, but also research, academic and technical support from their supervisors, mentors, line managers and colleagues; annual support visits to each of the group members in their home institutions; and forums to facilitate discussion, support and advice – in the form of an electronic discussion forum and annual face-to-face meetings (called "PhD days").

Data were used from the semi-structured interviews and the initial reaction survey questionnaire to evaluate some of the elements of the support provided for the GMP PDP programme. The group were asked specifically to comment on the support that they had from their institutions, not only because I wanted to evaluate the level of support provided by the institution, but also because I felt that for future use, I needed to understand how their institutions worked, and whether there might be opportunity to embed PDP within them in the future.

Institutional support

In the semi-structured interviews, the group were asked how they felt their home institution supported them over their PDP period. Most of the group members felt that they had good support. One said that, *I've had excellent support",* while another said that s/he had had *overwhelming support"* in terms of the opportunities to attend free workshops and courses to help him achieve his PDP goals and objectives.

Another felt that his/her home institution was supportive and helpful with practical things, such as allowing, *me to attend the courses, and supported*

me in terms of out of pocket allowances and transport arrangement" and "*receiving the PDP money"* and *"dispersing it to the consultants who are working with me on this programme."*

There were some group members who felt that their home institutions had *"not been supportive in connection to PDP"* and that apart from institutional sponsorship to attend another GMP workshop, *everything else has been more or less my own efforts."*

Some group members were uncertain as to whether their home institutions would have been supportive because they were either unaware of their PDP programme...

> *"They didn't get very much involved in the sense that, you know they didn't even know about it. But I don't think they would have supported it, but they were not involved"*

Or, that they did not really understand it...

> *"the management didn't really understand what the PDP programme was all about, and the objectives and how actually the home institute could actually facilitate themselves."*

One group member felt that s/he could not fault his/her institution because while they did not give him/her direct support, they did provide a non-restrictive environment, which allowed him/her the *"freedom to do a lot of things"* and that s/he was *"able to do whatever I want to do."*

While another wondered whether the support might have been more from his/her "home" institution had s/he understood the "rules" and asked for help. This was a group member who had no home institution in SSA, as s/he had given up a post to take up his/her PhD and as s/he was based in his/her northern partner institution for all of the time, considered this his/her home institution. S/he commented that...

> *"it's like some ... well ... I'll put it this way. It seems to me that it's part of the culture here that you don't get ... you only get what you ask for [laughs] ... so it's ... it's ... a little bit tricky when you're coming from outside and you don't know that, then you might ... you might not get what you want because you haven't asked for it ... if you haven't asked for it then it means you don't need it. I think it's ... it's... kind of ... I would put it ... it's some kind of cultural thing or something. Because you ... you ... you ... get to learn it ... you get to learn it by living in the society, but for somebody who is just fresh from outside and if you don't have ... advice from your colleagues or from people who have been here before you then you really don't get to know what support you want to."*

This comment gives some insight into the cultural differences that can be experienced by some African students studying in Europe; and with the difficulty compounded by the characteristic within some African cultures of finding it difficult to ask for, or even admitting to needing help. In the

case of this student, his "home" institution was very supportive and he went on to say that, he felt being part of the PDP programme probably contributed positively to the level of support that he received from his institution.

Some group members felt that the current personnel changes and restructuring taking place within their home institution had affected the type of support that they got, and made them feel very uncertain about their career planning within the institution. This was an exceptional case with the institutional changes having far-reaching effects for all the staff.

Improving institutional support

When the group were asked how the support from their institutions might have been improved, one felt that it would have been good if the organisation had people with the skills that s/he needed, so that s/he could get *"something like on the job training within the organisation."* And when asked whether they might have got the same support if they were not part of the PDP programme, one thought that,

> "*the support wouldn't have changed if I was, if I wanted support with my research career, but with anything else ... that's probably on my PDP plan that's not directly related to research, then yeah that would be a bit minimal, in terms of support ..",*

This comment showed how PDP was viewed by some institutions, which led to one group member to have two PDAPs – one s/he said for work, which s/he felt was for his/her career development within the organisation, and his GMP one, which s/he felt would be for his/her personal development.

Financial support

To support the group with their PDP, the GMP allocated each group member an individual budget of $5,000 (USD) to help purchase the resources needed to achieve their PDP goals and objectives. The budget was transferred into their home institution with a named individual (such as the finance officer or accountant) holding responsibility; and with the group using their local policies and procedures to access their budget as and when it was needed.

I wanted to know how this funding supported the individual with their PDP; and while it was not intended to evaluate the process of transfer and access, these difficulties were highlighted by some of the participants in their interviews. One said that...

> *"No, I didn't collect it because it needs to be passed through an organisation, an institution and like I said I wasn't part of an institution. The ... Health Service it's not an institution that you can pass money through. I think in that respect the place is not well organised, so I don't have anywhere to pass this*

money through. You need to account for the money [yes] so I thought maybe it cannot be possible for me?"

For another group member, the organisation that s/he worked for considered the sum of $5,000 too small to be handled through their books, and felt that it would cause too many problems with their annual audit. For this group member, and for the group members were based with their northern partner institutions completing their PhD research, their PDP money was held and managed centrally by the GMP and used to pay for resources as the individual needed it.

The GMP also helped out with two other group members who found that they needed a credit card to book online for the courses they wanted to attend. While these were practical solutions for these specific cases, the process was not straight forward, in that it required GMP using central funds to pay for the courses, then going through the process of getting reimbursement from the institution.

This was also not an ideal solution from a PDP perspective, where it not only removed some of the individual's autonomy and ownership of the PDP process, and the opportunity to manage their own funds, but in GMP having knowledge of the course the participants were attending, it also removed some of the confidentiality that this PDP programme endeavoured to promote.

Aside from the process difficulties faced by some individuals, all the group members found the funding important and useful. One saw it as a

"blessing" – and that it gave him/her an opportunity, as there was no way that his/her organisation would pay course fees of $2,000. Others saw it as having *"peace of mind"* just knowing that you have the money, and it coming *"in handy"* as *"yes you can identify the areas where maybe you need support but if the money is not available forget about it you can't do anything."*

There were lots of positive comments for having the financial support. One group member said that...

> *"I mean without the money I don't think I would actually be able to attend, you know they are not cheap courses, they are expensive. Some of the courses we attend they are like $750, so where would we get that money from? Honestly if you did it on your own? So it's been very helpful... erm.... I wish the money would have been increased though... (laughs heartily)."*

Another saw that having the funding *"helps you to plan and structure your career wisely and manage money"* because you cannot do everything and anything – but another viewed the funding as allowing you *"to explore what you want to explore, there's no limitation ... as long as it's all documented"* and that it *"allows you to do things that you wouldn't normally have probably done had you not, have been part of the PDP process"* – and having the funds helps you to do this.

Overall, the comments about the financial support were positive, but the group members were also asked to comment on anything they thought was negative about the having the funding. Comments included: difficulties in accessing their funds, (and in some cases not in time to access the courses that they wanted to); the funding should be increased, and budgeting problems, especially keeping track of funds when converting from dollars to local currency to pay for courses locally. Most of the group however, felt that there was *"nothing negative about getting money."*

A large proportion of the funding was spent on training courses, however, finding suitable and relevant courses, workshops, expertise and facilities locally proved to be more of a challenge for some of the group members; particularly for the ones from resource-poor countries. This was something that was not anticipated when embarking on the GMP PDP project and putting in support – and a lesson learned from this research study, as well as an area for consideration when improving the PDP programme for replication.

Another area for consideration would be to look at alternative ways for the PDP budget to be administered to the individuals, so that some of the transfer and access difficulties might be limited, and even eliminated.

PDP Advisor

The PDP project also included me as a resource person, to provide one-to-one support and advice, both remotely and through annual monitoring and

support visits to each of the participants in their home country. From the results in table 8 (pg. 150), 17(74%) of the 23 group members responding felt that it was essential to have a named individual to support their PDP. To limit interview bias, the group were not asked to comment on the type of support provided by me (the PDP advisor) but were asked, in terms of transferring this PDP programme to a wider context, whether (from their experiences) they felt having a PDP support person was an element needed in a PDP programme. The results from the data showed overall how the group came to see this support element as being *"essential"* and a *"necessary part of the PDP programme."*

SUMMARY AND RECOMMENDATIONS

This chapter used the first of the four levels of evaluation in the study framework, to evaluate the GMP PDP Group's reaction to using PDP and the GMP PDP system – including the documentation, supporting materials and processes. It used the data generated from an initial reaction survey questionnaire, NGT, an online FDG and semi-structured interviews, to explore the experiences of the group as they worked through their PDP; and to answer the first of the research questions of "how do these research scientists feel about using PDP, the system, tools and processes?" Overall, the majority of the group felt positive about using PDP, and cited difficulties with time, self, planning, resources and budget as the main challenges faced with using PDP. In evaluating the PDP documentation and supporting materials, there was some positive feedback from the group

and some good suggestions in helping to make improvements for future use.

There were some key lessons learned from the evaluation of the PDP processes. While the implementation of PDP via electronic media worked for the majority of the group, it was the face-to-face meeting six months after the PDP launch that seemed to galvanise and embed the PDP programme.

The group found some of the activities in the action planning process challenging. These included elements involved with developing their individual Personal Development Action Plans, such as undertaking a self-evaluation, writing Specific Measurable Achievable Relevant and Time-bound (SMART) objectives, budgeting, and finding resources locally to help them achieve their PDP goals and objectives. A crucial lesson learned was that it was not sufficient to have provided the group with a user-friendly system and documentation, but that it was also necessary to ensure that they were equipped with the skills required to undertake the PDP processes effectively. For replication there needs to be a face-to-face introduction and orientation to PDP and the documentation; and to include a PDP development workshop that would facilitate initial skills training, for example in: action planning, writing SMART objectives, writing reflectively for your PDP, evaluating your skills and budgeting. A significant lesson learned in this study was that the assumption made that resources could be found locally to help the group undertake their PDP activities was incorrect, and that some assistance would be needed to

ensure access to reliable resources in order to help individuals achieve their PDP objectives.

The evaluation also highlighted areas in the PDP support system that needed improvement. These include: (a) the need for a more robust system of monitoring the group's PDP – which needs to be less reliant on a single individual, so that an element of sustainability can be built into the system; (b) an improved method of transferring PDP funds to the group members – to one that gives ownership back to the individual, and (c) better communication with the other members involved with the individual's PDP – including their home institution and mentors.

In the next chapter, the second and third levels of the study evaluation framework are used to move the discussion forward – and evaluates the learning gains of the GMP PDP Group as a result of engaging with PDP; and pays attention to how these learning gains are applied in practice.

CHAPTER 6

EVALUATION: LEARNING AS A RESULT OF ENGAGING WITH PDP

INTRODUCTION

The focus of this research study is to evaluate how the use of PDP might help a group of African research scientist enhance and progress their career development. The evaluation framework used to structure the study is an adapted version of Kirkpatrick's "Four Levels of Evaluation" (2005) – which evaluates PDP in relation to: reaction, learning, behaviour and results. In the preceding chapter the first of these levels was used to evaluate the reaction of the group to PDP and the specifically-developed PDP system, tools and processes – thereby finding answers to the first of the research questions of "how do these research scientists feel about using PDP, the systems and tools?" In this chapter the evaluation uses the second level of the framework to evaluate the learning that might have occurred as a result of engaging with PDP, and the third level to evaluate the application of any of this new learning to practice. To achieve this, the study uses the data generated from the individually completed PDP documents (the Personal Development Action Plans (PDAPs) and Annual Reports), the follow-up questionnaire and semi-structured interviews.

EVALUATION LEVEL 2 – LEARNING AS A RESULT OF ENGAGING WITH PDP

This part of the study evaluation is divided into two sections. The first of the sections focuses on the learning that has occurred as a result of engaging with PDP. It discusses the learning theories associated with the PDP processes and learning activities, and focuses on the knowledge and skills gains, and how these were attained, since not all were through taking courses. The second of the sections focuses on the learning involved with the knowledge and skills gains, and gives examples of application to practice.

Learning plays a central role in PDP. Its definition places the learner at the heart of the process to reflect and plan their own learning; while the focus of its aim is to help individuals take responsibility for their own learning, understand what and how they learn, and be able to relate this to a wider context in order to become effective, independent and confident self-directed and lifelong learners (Dearing, 1997; QAA, 2002; 2009).

Relating this to practice, Gough et al., (2003, pg.1) see PDP expressed as a set of actions and processes, which consist of:

- Planning (how to achieve objectives or general change)
- Doing (learning through the experience of doing with greater awareness)
- Recording (thoughts, ideas, experiences, evidence of learning through writing, audio, video, visual or other means)
- Reviewing (reflections on what has happened, making sense of it all)

- Evaluating (making judgements about self and own work and determining what needs to be done to develop /improve / move on)

Underpinning each of these actions and processes are concepts that involve elements of learning in some way – and with the individual reflecting and drawing upon concrete learning experiences throughout the PDP process, it is not difficult to see how influential Kolb's experiential learning cycle (1984) has been in conceptualising the way in which PDP processes link together to formalise this learning. However, PDP is such a broad concept, and with such a range of potential outcomes according to use and emphasis, that the learning that occurs within its context, is in itself broad and wide. O'Connell (1999, as cited in Gough et al., 2003) sees Records of Achievement (one of the processes supported by PDP, within the context of higher education in the UK) as having its theoretical basis in several types of learning. These she sees as: experiential learning; self-directed learning; reflective learning and transferable skills and meta-cognition.

To look at the learning that had taken place as a result of the GMP PDP group members engaging with PDP, I looked at each of the Personal Development Action Plans (PDAPs) developed individually by the group members. For each of the PDP goals and objectives developed within the PDAP, the individual outlined a related schedule of activities and resources required to help them achieve these. The data from the annually updated

PDAPs (for 2 years), the Annual Reports, the follow-up questionnaire (a year post engagement with PDP),and the semi-structured interviews, gave me a good understanding of what skills and knowledge had been gained as a result of engaging with PDP. The information from the schedule of activities helped to explore the type of learning involved with each of the activities; for example, whether it was a course (online, face-to-face or blended learning) or through using study materials (books, training manuals and DVDs), working on a one-to-one basis or in a group with a specific trainer.

The 1990s saw a shift in emphasis in research degree programmes in the UK – from a more scholarly activity focusing totally on research, to include a more skills-focused activity that allows students to emerge as researchers equipped with the skills needed to function in a dynamic and complex work environment. This focus on skills development was formalised as policy for postgraduate students on research degree programmes (QAA, 2004) – following a recommendation in the influential SET for success report (Roberts, 2002). The report stipulated that each postgraduate research student receive at least two weeks training per year in transferable skills. Work on required skills training was guided by a "Joint Skills Statement" (Appendix 6) – devised by The Research Councils and the Arts and Humanities Research Board (AHRB) in the UK, (RCUK, 2001) – and set out seven areas of skills and competencies to assist the development of postgraduate researchers, as part of their doctoral process.

The Joint Skills Statement is used as a basis for the development of skills training programmes and career development tools for postdoctoral researchers. For the GMP PDP Group, the Joint Skills Statement was recommended as a resource to help them think more broadly about the skills that they might need to develop to help them progress their career development, as opposed to a mandatory set of skills that they had to work through.

Evans (2008) highlights the difficulties faced when categorising skills, and uses the terms identified by Bennett et al., (2000) of "core" skills (skills that are disciplinary specific) and "transferable" skills (non-disciplinary specific skills) to illustrate the inconsistency of categorisation – since, what could be seen as "core" skills in one discipline could be seen as transferable in another. With this in mind but also mindful of the need to facilitate analysis of the skills featuring in this research study, I used the Joint Skills Statement as a basis to help situate the skills that the GMP PDP Group identified in their PDAP. These are placed into three main categories:

1. research-related skills – these include skills involving specific research techniques
2. Generic skills – these include communication, team and networking
3. Professional Skills – all skills relating to their professional careers

While this is not exact, and there is considerable overlap between the skills within the categories (for example "grant-writing skills" could be seen as a research-related skill as well as a generic skill) – it was still useful to have fewer categories than the Joint Skills Statement to help focus the analysis; and to facilitate identifying any emergent "core" skills set that might be used in future as a basis to develop training programmes or provide training courses.

SKILLS IDENTIFIED

Research-related skills

Table 11 shows the research-related skills that were identified by the GMP PDP Group as the skills they felt they needed to develop, in order to help them progress their careers as research scientists in Africa.

Table 11
Results of research-related skills, as identified by 24 group members

List No:	Research-related Skills	n (%)
1	Improving Qualitative research skills	6 (25)
2	Improve statistical analysis using SPSS and STATA	4 (16)
3	Good Clinical Practice / Good Laboratory Practice	4 (16)
4	Quantitative data management, design, analysis and presentation for publication	3 (12.5)
5	Manage data collected in clinical trials	3 (12.5)
6	Advanced Statistical analysis skills	2 (8)
7	Principle Investigator skills for conducting clinical trials	2 (8)
8	Keep up-to-date with research ethics	2 (8)
9	Monitoring and supervising research projects	1 (4)
10	Specific research techniques	
	Using Geographic Information Systems	2 (8)
	Gain knowledge and theoretical background Immunology	2 (8)
	Gain skills in Molecular Epidemiology	2 (8)
	Learn techniques in tissue culturing	1 (4)
	Modelling infectious disease - focus on malaria	1 (4)
	Gain skills in Molecular Biology	1 (4)
	Improve skills in Bioinformatics for genome computing	1 (4)
	Improve laboratory management skills	1 (4)
	Improve skills in Biostatistics	1 (4)

Improving qualitative research skills features high in this list. With the strengths and benefits of integrating qualitative and quantitative

research highlighted by several authors (Shah and Corley, 2006; Cresswell et al., 2003; Greene, 2006 cited in Cresswell and Tashakkori, 2007), it was interesting to see that 6(25%) of the group were seeking to develop their qualitative research skills, and with three of the group members looking to develop their quantitative research skills. A possible explanation for this could be the individuals seeking to develop these skills in order to use, or contemplate using (in the future) an integrated approach to their research design; and therefore developing the skills needed to do this. However, one of these individuals identified the need to develop his qualitative research skills in order to be able to use a more in-depth approach to analysis of the qualitative component in his already integrated research study.
The results from the table showed the need for a broad mix of research–related skills – from the need for more general research skills, such as improving qualitative and quantitative skills, to the range of the more technical skills required to help advance their careers as research scientists. The skills that feature throughout the list in the table are improving statistical analysis skills – these included developing advanced techniques, learning how to use data management software packages, and improving skills in biostatistics.

The GMP PDP Group comprised of a mix of doctoral and postdoctoral research scientists – and with the majority of the recently completed doctorates embarking on their first postdoctoral positions. The research

studies undertaken were in an aspect of malaria control – from: vector control, health systems research, combination drug therapy, pathogenesis, and vaccine studies – and while many of the studies were field based, they did include a laboratory component (GMP Report 2001 – 2006). It was no surprise therefore to see laboratory-related skills featuring in the results; including developing Good Clinical Practice, Good Laboratory Practice skills, and to improve their laboratory management skills. These skills were in addition to the specific research techniques carried out within the laboratory – for example, learning how to do tissue culturing.

GENERIC SKILLS

The category of generic skills in this research study relate to the "soft" skills found within the joint skills statement, namely: personal effectiveness, communication, team working and networking – a particular skill that Baruch and Hall (2004) highlight as a typical of career development within the model of the "boundaryless" career. Table 12, outlines the skills identified by the group as the skills needed, in addition to the research-related skills, to help them develop their careers as research scientists.

Table 12

Results of generic skills identified by 24 group members

List No:	Generic Skills	n (%)
1	Grant writing and proposal development skills	12 (50)
2	Network with other researchers	6 (25)
3	Improve scientific writing skills - for reports and manuscripts	5 (21)
4	Improve presentation and delivery skills	4 (17)
5	IT skills - EDCL and for data management	4 (17)
6	Learning French as a second language	4 (17)
7	Skills in team working	1 (4)
8	Develop peer reviewing skills	1 (4)
9	Develop skills to increase publications	1 (4)
10	Improve oral communication skills	1 (4)

Although these skills are seen as "soft" skills they are essential skills needed for early career researchers in developing their careers as research scientists. They are needed to help them manage the dynamic workplace that a career researcher finds themselves in, and as Kidd and Green (2004) put it, manage the frequent changes in day-to-day work tasks – for example, from "hands on" laboratory work to managing a large research project; and seen as essential in the development of the early-career researcher in their transition from PhD to independent researcher (Bazeley, 2003; kidd and Green, 2004; Laudel and Glaser, 2008).. Results from Table 12, shows that the skills identified by the group as most needed, are grant writing and proposal development; and with this need particularly

voiced by one of the group members who said in his interview, *"I need to find a course on how to write winning proposals".* The need for this skill is not surprising since, not only does winning grant proposals ensure funding for future postdoctoral research, and therefore provide the early-career researcher with the means to progress their career, but it also helps – through collaborating with other researchers and experts in their field, and the resulting publications from the research – to build their reputation as a credible researcher. This is clearly recognised by these individuals who have identified the need to develop the necessary skills to help them progress their career development. One group member made particular note of this in his interview, where he explained that he had,

> *"several scientific publications in progress to increase my opportunity for being internationally known for my skills that can open more opportunities for future career development".*

In fact the entire list of skills identified in table 12 might be seen as necessary in some way to help the individual progress their career as a research scientist – from developing scientific writing skills to networking with other researchers.

The skill of interest within this list is learning French as a second language. Four group members identified this as a need to help progress their career development. The interview data revealed that this was largely from the

Anglophone West African group members who felt that their opportunities for regional collaboration and research interaction might be increased with being able to communicate in French. The interview data also showed that out of these four group members who wanted to learn French as a second language, one of them wanted to learn the language, not because of the potential for collaboration and research interaction, but because the organisation that he was employed in used French as one of the languages of communication, and although English was the main medium, sometimes documents were circulated in French, and he therefore felt the need to learn the language.

Professional and profession-related skills

Table 13 shows the final category in the list of skills that the group identified as helping them to progress with their career development. These were the profession-related skills – which loosely related to the career management section in the Joint Skills Statement.

Table 13

Results of profession-related skills as identified by 24 group members

List No:	Professional and profession-related skills	n (%)
1	Lecturing and teaching skills - including laboratory-based teaching and curriculum design	11 (46)
2	Improve Project Management skills	10 (42)
3	Financial planning, management and budgeting skills	5 (21)
4	Develop consultancy skills	4 (17)
5	Monitoring and Evaluation skills	4 (17)
6	Strategic planning, management and budgeting skills	2 (8)
7	Acquire leadership skills	2 (8)
8	Management skills	1 (4)
9	Improve clinical skills to re-validate medical registration	1 (4)
10	NGO Financial Management skills	1 (4)
11	Human resource Management skills	1 (4)

Developing lecturing and teaching skills

Almost half of the group 11 (46%) saw developing lecturing and teaching skills – including laboratory-based teaching as necessary skills to develop in order to progress their career development. From a UK perspective, a research career in academia is seen as one of the primary employment destinations for postdoctoral research graduates (Kidd and Green, 2004; Vitae, 2009).

A UK survey undertaken by Vitae (the national organization for the professional and career development of doctoral researchers and research

staff in Higher Education Institutions and research institutions) showed that over a four-year period (2003 – 2007) for the biological sciences (including microbiology, biochemistry, molecular biology), the education sector was consistently the largest employment area, and with an average of 36% of doctoral graduates working as research staff in higher education. For the biomedical sciences, although the health sector was the largest employment area, an average of 22% of doctoral graduates were working as research staff in higher education.

I was unable to find comparable data for doctoral graduates in Sub-Saharan Africa, but a report by the Association of African Universities (Mihyo, 2008) on staff retention and links with the Diaspora, makes recommendations on what improvements African universities might make (with the help from national authorities and regional and international development partners) in order to recruit and retain university staff. One of these recommendations includes diversifying financial resources, which requires researchers to develop research partnerships with the private sector and increase earning from research contracts – that is bringing research grants into the institution. This would indicate the need to recruit researchers (with the skills required to undertake this) into academia. However, for researchers based in a university setting there is still the need to develop the skills required to manage the academic load of teaching, assessing and supporting students.

For the group members, the reasons for developing their lecturing and teaching skills varied. Many found themselves having to train field staff, support other research students, and teach on modules within a programme, so wanted to develop the skills to enable them to do this effectively. For some they were actively seeking to enter academia as they saw this as a *"link"* between research practice within the university and outside agencies – both government (such as ministries) and commercial (such as industry and pharmaceutical companies). One group member said that, *"...for me I see working at the university as a platform from which to do my research".* For another already employed in a university, although his/her role involved using his/her research skills to meet some of the recommendations above, and to build research capacity within his/her department, s/he also had a significant academic load, which involved teaching, assessing and supporting research students at both masters and doctoral level – and for him/her s/he wanted to develop his/her teaching and curriculum development skills because, s/he said, *"I want to get it right".* For another group member based within a university – in addition to his/her research output of numbers of publications and grants brought into the institution, his/her promotion (from senior lecturer to reader) within his/her university system was dependent on being able to demonstrate competency (and be assessed) in all aspects of teaching; including lecturing large groups, teaching small groups and demonstrating practical laboratory sessions. For this individual, a large proportion of

his/her allotted PDP budget was spent on developing these skills to help him/her with his/her career progression.

Developing project management skills

Bakken et al., (2006, pg. 92) note that the career development of a "career" researcher requires significant institutional support, project management skills and skills to develop effective research teams. This is something that has been recognised by the group as 10 (42%) of them identify project management skills as important skills needed in order to progress their career development. As one group member put it,

> *"...you don't get all the skills in the traditional areas like project management, like teaching...these issues are normally not emphasised during a PhD programme but they are very crucial for one's success when actually they get out of the PhD programme"*

The group members came from varying backgrounds: some were from medical and public health backgrounds and worked for their national health service or for universities; some worked in national research institutions, some of which were linked to ministries of health; while others came from aid organisations. After completing their doctoral studies, most of them returned to their affiliated institutions. Some returned to posts, but there were a few who gave up their posts to take up the PhD sponsorship opportunity; and for these individuals, developing or reviving their

profession-related skills featured in their PDP. For example in number 9 (in Table 13, pg. 196) to improve clinical skills to re-validate medical registration. This person had given up a post in the medical profession to take up the PhD opportunity and was considering the move from clinical practice to research, but was also looking to revalidate her medical registration, as a way of keeping her career options open. The same can be said for the four group members who identified the need to develop consultancy skills, and the individual who wanted to develop management skills. Developing these skills was not just about keeping career options open, but also about developing a portfolio of skills, which the literature proposes is needed in order to manage the "boundaryless" career (Arthur, 1994) as it unfolds through individuals' choices in time (Wilensky, 1961, cited in Sommerlund and Boutaiba, 2007).

Developing skills for varying stages of career development

In addition to the group members coming from varying backgrounds, they were also at varying stages of their career development. Some were senior researchers and held senior positions within their institutions, whilst others were new to the world of career research, and were about to embark on their first post-doctoral experience. This is reflected in the variation of the skills identified for development – from the more fundamental skills like improving scientific-writing and research methodology to the more higher level skills like developing leadership skills and financial planning skills.

The choice of skills to include in their PDAP was dependent on an identified need at the time – for example, not all of the group members planned to undertake the more popular skills such as grant writing, teaching, lecturing and project management. This may have been either because they felt that they had already reached a level of competency in that skill or they may not have realised (yet) the need for the skill. An example of realising the need for a particular or more specific skill can be seen with the group member who felt that developing peer reviewing skills would be needed to help his/her development (table 12, pg. 193, number 8). With this individual, this PDP objective was not something that was originally written into his/her PDAP but added later when the need for the skill emerged; following being asked to join a group within his/her institution to peer review articles for publication. This is also a good example of PDP being used in the dynamic way for which it is intended.

One of the initiatives within the wider GMP project was the opportunity to apply for a postdoctoral re-entry grant. This was offered to all the participants on completion of their PhD, and involved a competitive process of application for funding to continue their doctoral research, either as an extension project or a new research project resulting from an aspect within their doctoral research. This opportunity not only gave the early career researchers the opportunity to secure funding for their first post-doctoral research study, but also the opportunity to practise, consolidate and further improve the skills (such as, writing a grant proposal and budget

planning) that they developed as a result of their PDP. However, it should be noted that while this opportunity was available, it was not taken up by everyone; and neither were all of the applications successful.

GAINING THE SKILLS

Each of the skills, as identified by the individual to help them develop as part of their career progression, was formulated and written into their Personal Development Action Plan (PDAP) as a specific, measurable, achievable, relevant and time-bound objective – and for each objective the individual outlined a schedule of activities of how they intended to achieve the objective. These schedules of activities were shaped by variables such as their learning styles and availability and cost of resources. Each of the group members were given an individual budget of $5,000 (US), to help towards purchasing the resources needed to help them achieve their PDP objectives; so to an extent affordability came into one of the variables that might influence choice and access to learning resources. There were also seven group members who were still completing their PhDs, and therefore still registered with their GMP northern partner institution, and with access to free courses within the institution.

Table 14 uses the data from the PDAPs and annual reports to outline the types of resources that the group members accessed to help them achieve their PDP objectives and attain the skills identified as needing to enhance and progress their career development.

Table 14
Total number of resources used to meet PDP objectives over a two-year period

List No:	Resources	Total number of items used / achieved
1	Courses:	
	Face-to-face attendance	31
	Online	7
	Blended learning	1
2	Books and Manuals	8
3	Online books (free downloads)	6
4	Conferences and meetings	6
5	Publications	6
6	Human resources	
	Working with others in a group / team	12
	Working with others on a one-to-one basis	4
	Learning on the job	3
7	Purchasing software	3
8	Purchasing equipment	2
9	Web resources	2
10	Membership fees	2

Courses

An important part of the PDP process for the GMP PDP Group involved finding resources to meet their needs. The results from Table 14 shows overall how resourceful this group were in doing so – despite some difficulties faced by some of the group members in finding *"the right"*

resource. Taking a course proved to be, by far the most popular resource used to help achieve their PDP objectives. A total of 39 courses – (31) face-to-face, (7) online and (1) blended learning – were taken over the two-year period. With 24 individuals, this would work out to an average of each person taking more or less 1.5 courses. However, this did not work out as such, as there were some people who did not take a course at all and others who had taken more than one course. The courses taken very much depended on whether it met the individual's needs of availability, cost, and learning style. For example, one group member gave his/her views on developing skills through taking courses. S/he expressed that,

> *"Sometimes people tend to develop a feeling that undertaking additional courses that can enable them to have additional academic certificates is the best way of justifying their skills, although skills can be demonstrated by one translating what they already know into practice. For example, participating in activities related to their areas of specialisation".*

This contrasted with another group member who met all his/her PDP objectives through taking four courses over a two-year period. Another felt that s/he would liked to have taken courses to meet his/her PDP objectives but the courses that s/he wanted to take were very expensive and unaffordable. However, one of the reasons for this was that the courses s/he wanted to take were in a

neighbouring country and the additional cost of travel and accommodation made the courses unaffordable. His/her reason for looking regionally rather than locally for resources to meet his/her PDP objectives was not because the resources could not be sourced locally, but because his/her PDP objectives were to further develop the skills that s/he needed in his/her newly-promoted role, and felt that his/her employer *"would not understand"* that s/he needed to develop these – and s/he did not want them to think that s/he did not have the skills to do the job.

Sourcing resources

For many of the group members taking courses, these were sourced locally and provided by African institutions such as the African Medical and Research Foundation (AMREF) and the Africa Malaria Network Trust (AMANET) – particularly for online courses in Research Ethics and Good Clinical Practice. The Open University proved to be another online (distance learning) provider, in addition to other UK, European and South African universities. Courses were also provided by local management institutes, the group members' own institutions, national and regional universities, and organisations such as, The British Council, who provided courses locally. Some of the courses were funded by outside agencies, such as the Special Programme for Research and Training in Tropical Diseases (TDR) / World Health

Organisation (WHO), the National Institutes of Health (NIH) and the Centre for Disease Control Prevention (CDC) – but run in Africa, so sourced and accessed locally.

The reasoning behind the group looking locally for resources to meet their PDP needs was: (a) to help their budget go further, and (b) to help them with building up a local network. However, this did not work for the participants from low-income countries where there were limited resources available. For these group members, a large proportion of their resources were found regionally or web-based and online – particularly the free web downloads, such as the support materials and manuals provided by TDR and NIH.

Getting around difficulties

There were also difficulties faced by some of the group who managed to find and enrol on courses at their local management institutions only to find that the courses were cancelled at the last minute due to insufficient numbers to run the course. This led to some innovative ways of using learning resources to meet their PDP needs – for example using *"consultants."* For one group member, s/he had enrolled on a teaching course but found the course cancelled, so used his/her PDP money to "employ" the tutor (who would have been running the course) to work with him/her as a *"consultant"* on a one-to-one basis to help him/her (until the course was available again) with some of the more

immediately-needed skills, such as lesson planning, developing teaching resources, and student assessment.

Using PDP money for purchases

Not all of the group members spent their PDP budget on attending courses, three used some of it to purchase software, and two used some of it to purchase equipment. For the two who used their PDP money to purchase software, they were just completing their PhD studies and felt that they needed the referencing software (Endnote and Reference Manager) to have with them in order to help them with writing up their PhD papers for publication, thereby helping them with their career development. The third used his/her money to buy anti-virus software. The PDP budget did not extend to purchasing large pieces of equipment, but three group members did use some of their budget for this purpose. One participant bought a Personal Digital Assistant (PDA) computer to record his/her data at his/her field sites, the second used his/her PDP budget to buy a laptop computer, loaded with specific software that s/he needed for his specialised work in malaria modelling, and the third spent his/her money on purchasing a mobile modem, to help him/her increase the speed of his/her internet access, in order to help him/her with online grant applications and downloading articles. Two individuals used some of their PDP budget to pay for subscription fees for membership to

the Royal Society of Tropical Medicine and Health – thus enabling them to keep up-to-date with the latest research and opportunities, as well as developing a network.

Resources used to achieve PDP objectives

For the six conference and meetings and the six publications that appear in the list in table 14 (pg. 203) these are the number of resources that different group members used as a means to help them achieve their PDP objectives. Six conferences and meetings were attended, in which presentations were given (by six different individuals) and six publications (from six different individuals) were accepted. For these individuals, although these are their achievements they felt that they were resources that they needed to achieve in order to help them develop in their careers as research scientists, so wrote them into their PDAPs. It should be noted that there were more than six publications from the entire group and over the duration of the PDP project, and that the six mentioned here are from the individuals who specifically wrote these into their PDP.

EVALUATION LEVEL 3 – LEARNING AND APPLICATION TO PRACTICE

The previous section of the chapter used the second of the study evaluation framework levels to discuss the learning gains that occurred as a result of

the GMP PDP Group engaging with PDP. In this section, the third level of the framework (behaviour) is used to take forward this discussion and look at the types of learning that were involved, in addition to evaluating how any new learning is applied in practice.

For this purpose, the data used were generated from the follow-up questionnaire and the Personal Development Action Plans (PDAP), and supplemented by the contextual data derived from the semi-structured interviews, field notes and the PDP-related communication via telephone and email. In analysing this data I wanted to see whether I could identify any of the types of learning identified in the PDP literature as associated with PDP (O'Connell, 1999; Jackson et al., 2004).

LEARNING

The simple presentation of skills (by type) and resources (by number) used in the previous section of the study is not meant to detract from the complex nature of learning, but purely to help portray the types of skills and resources that this group of research scientists (at varying levels of their career development) see as needing in order to help them enhance and progress their career development. It also helps with understanding the need for particular types of skills (a core skills set); and to get a sense of the ways in which these skills were attained, helps with future development and delivery of training, in addition to future PDP development for similar groups of individuals in Africa.

Opportunistic learning

While much of the learning that occurred with the GMP PDP Group as part of their PDP was of a self-directed nature, there were other types of learning occurring as well. Three of the group members found themselves in situations where their PDP objectives were met, not via their planned schedule of activities but through opportunities and that had come up. With two of the group members, they found themselves promoted into jobs that they were planning to gain skills and work their way into. When asked how they coped with this, one said, *"...that's when I turned to the books"* and the other was the previously cited group member who looked to accessing courses regionally, so that his employer would not be aware of the fact that he was trying to gain more advanced skills to do his/her job, as s/he said, *"more effectively."* With the third group member, s/he found him/herself faced with the opportunity of lecturing for a semester. Gaining lecturing skills was one of his/her PDP objectives but before s/he had the opportunity to implement his/her plan, the lecturing opportunity came up – which left him/her faced with the choice of either turning down the opportunity or seizing the opportunity and learning as s/he went along. S/he decided to take up the opportunity, and when asked how this went, s/he said,

> *"I believe I improved as the semester went on – that is, on the content of the lectures and preparing for the classes with enough time to spare. I also grew in confidence after a shaky start and being very nervous. From my first experience, even though it*

was not in my subject area, I can definitely use what I have learned to develop my skills further."

These examples show how the use of opportunity shaped the development of skills for these individuals; and how their learning occurred, not as a result of their planning but through opportunistic means. In table 14 (pg. 203) I listed these as "on the job" since any learning that occurred was while they were working their way through it.

Learning with and from others

Although the above are examples of opportunistic learning, and the learning mostly involved learning by doing (Gibbs, 1988), the individuals would still have used multiple strategies or methods to help them achieve this learning. Some of these might have included: drawing on their concrete experiences (Kolb, 1984) to help them learn, and working with others (Eraut, 2007). Learning with and from others provides a rich learning experience, as knowledge and experiences are shared. Knowles (1990) notes that learning does not take place in isolation but in association with others, and Eraut (2007) demonstrates how learning can take place by learning from other people in the workplace. The results in Table 14 (pg. 203) showed that in 16 cases, individuals used human resources (people) as a learning resource to help them achieve their PDP objectives. In 12 cases this was working with others in a group or a team, and in 4 cases this was working with people

on a one-to-one basis. Some of this working on a one-to-one basis was to focus on specific skills needed to help in specific areas – for example, one group member used part of his/her PDP budget to pay a biostatistician for his/her time, to help with teaching him/her the practical skills in data analysis using statistical packages such as, SPSS and STATA. In his/her interview, s/he went on to say how s/he *"previously relied on statisticians to help with project planning, to decide on sample sizes and how to report results"* and as a result of this learning, has *"for the first time done some data analysis on results from my current project without consulting a statistician"*

One group member gave his/her view on learning from others, as s/he describes what s/he learned from engaging with PDP when thinking about where to start with developing his/her PDAP.

> *"What I found very useful was getting together as a group. You kind of brainstorm... kind of sounds silly but as people are talking about what they want to do you kind of pick a few things out of that. So that in a way it kind of brings some brains together and you kind of learn bits and pieces from other people".*

Jackson (2005) sees the strength of PDP as a method of creating knowledge about self; and that the real benefit is to the individuals who create this knowledge and who are able to draw upon it and use it in ways

that are meaningful and useful to them. This can be seen with this same participant, who went on to say that,

> *"The other thing, you know is the interest that you see in other people as well. When you see some people excelling at what they plan to do, you have to say why am I not excelling in what I plan to do, so you kind of like pick a few lessons from other people, why have they progressed so far and I haven't done so? So in a way you kind of learn from others as well by just looking at how much progress they have made. So I think the learning from others as well is essential for the success for the PDP".*

This participant went on to develop a PDP that was focused, and with good, achievable objectives that clearly related to his/her overall aim. Perhaps this was as a result of questioning him/herself and learning from his/her peers and colleagues, and being able to use the knowledge created about him/herself in a meaningful way, as Jackson (2005) suggests?

Reflection and Experiential learning

In relation to the above example, the point that this group member makes, and the question that s/he asks him/herself about *"why am I not excelling"* when s/he sees other people doing so, is a pertinent one, in that it not only illustrates how thinking and reflection play an

important role in the learning process, and in this case in reflection associated with PDP, as espoused by Moon (2001), but it also supports Kolb and Kolb's (2005) view of a constructivist approach to learning, whereby social knowledge is created and re-created in the personal knowledge of the learner. They see this approach as very much part of experiential learning (in which reflection plays a crucial role); and from the experiential learning theory stance, propose that "all learning is relearning" (pg 194). There were several examples from the data on group members reflecting on their learning as a result of using PDP, and of cases where learning was relearned. One example can be seen in the case of this group member whose reflection from his/her project management course made him/her realise that,

> *"I guess I never looked at my research as actually managing a project, whereas having done it ... having done the research and then going to attend the course, you realise actually I am managing a project, and I am managing people and I am interacting with people, so it's given me a new perspective as to how to manage my project ... manage the sort of admin side of what I'm doing with my research ... ordering reagents, and just keeping good records of what I'm doing, Yeah, so there were a lot things that I learned on that course.*

This knowledge from the combination of grasping and transforming experience (Kolb and Kolb, 2005) can be seen in the participant realising that what s/he learned from her course was in some way something that s/he was already engaging in, in his/her daily role as a researcher and managing his/her research, but unaware of it. This example also highlights the point that Eraut (2007) makes, of the significant role of implicit learning in the workplace. This group member also demonstrates how, through reflecting on his/her learning from the course, s/he is able to bring a *"new perspective"* to how s/he manages his/her project.

Learning experiences in Africa

The preceding examples show the positive learning experiences that these individuals had as a result of using PDP – however, not all of the learning as part of PDP for these participants was of a positive nature, or as easily facilitated. Kolb and Kolb (2005) point out how learning results from the synergetic transactions between the person and the environment; and Loyens et al., (2008) – in relation to self-directed learning, also make reference to the importance of the learner and learning environments. Particular to this research study is the context of Africa – where, as one group member put it, *"in Africa it is different"* and the learning environment is different in that it is fraught with challenges, often beyond the control of the individual. The challenges faced by some of these

individuals to achieve their PDP objectives, in order to progress their career development should not be underestimated.

A sense of frustration can be seen in this group member's response,

> *"To put it in the context of our institution here in Africa, you may want to get there, but the facilities are not always there. So I would say, yes plan what you think you will really enjoy and what you want to do but you may not necessarily get it".*

Another group member described how s/he had to *"abandon"* his/her online course with the Open University because of the frustration of having to cope with constant unstable internet connectivity. His/her day ended with him/her stopping off at several Internet Cafes en route home to try to get through his/her course. Yes, it could be argued that this was probably not the best learning method for this individual in a place where there is known unstable internet connectivity, but with limited resources locally restricting access and choice; and in this case where online learning suited his/her needs and learning style, this appeared to be the right choice at the time. In addition, poor internet connectivity, along with, and often as a result of, electricity cuts being regular features of life in some parts of Africa, they are not necessarily something that someone in Africa would factor in as a possible barrier to their learning. They are accepted and just viewed as another hurdle to negotiate.

In some cases the experiences were not negative, in the sense that no learning occurred, but came with a set of circumstances that necessitated alternative approaches to the learning process. Kolb and Kolb (2005) see learning as a holistic process, and not just the result of cognition, but in the case of this next participant – while his/her learning would undeniably have been holistic in the sense that Kolb and Kolb (2005, pg.194) describe, since it would be difficult to engage in a learning process that is devoid of "thinking, feeling, perceiving and behaving" – the focus of his/her approach was arguably on the product of the experience. This is no criticism, since how people learn and for what purpose, is something that is unique to them; and there is no learning experience that does not add value to the individual in some way.

However, for this group member, s/he had been given leave from his/her job in the ministry of health to do his/her PhD, and on return to his/her home country got a posting to one of the national research institutions in an area new to him/her. New to the experiences of being in a research institution (where, s/he explained, they did not get money for research) and new to the world of research, in which grant applications play a crucial role, s/he relates how *"you want to do research but there are no grants".* His/her response illustrates how s/he comes up with a solution to his/her director, who has been instrumental in writing the successful grants – and it portrays his/her urgency in the need to learn something very quickly.

> *"so it was there that I told him that I think I need to draw up more proposals in different areas ... I think it is a skill which I need to acquire because nobody knows how long he will stay there... Again really he should have trained somebody before all this time but he didn't. Now that I have been posted there I have to learn this quickly because he might leave anytime".*

It is not hard to see that for this individual, with his/her urgent need, how his/her approach to this learning task can be focused more on product rather than process.

Application of learning to practice

Yorke (2006, pg.2) notes that the "transferability" of skills is often too easily assumed. This may be the case, but with one of the objectives of PDP being the demonstration of meta-learning and meta-cognition through the individual developing the ability to be able to transfer learning to different contexts (QAA, 2002), I looked to the data to see whether any learning undertaken by the group as a result of engaging with PDP was transferred to their practice.

Presented here is a selection (from numerous examples), which not only benefited the individual but also demonstrated some transfer of skills and knowledge to benefit the institution.

In this situation, the group member describes how using his/her networking skills helped him/her to establish a valuable collaboration, and how the learning from this collaboration led to the transfer of skills and knowledge,

not only personally to him/her and his/her career development but also to his/her institution.

> *"I have established new and vibrant research collaborations with ------ and ------- This allowed me to go to ------ on a collaborative visit------for six months. This programme has broadened my expertise in malaria research and has helped me acquire new skills which I have used in the latter stages of my GMP postdoctoral fellowship. I have since established some of these new techniques in my home institution upon return from ... An excellent example of capacity strengthening through technology transfer and collaborative work. Through this collaboration, I have also developed new research avenues and submitted a joint publication"*

Another group member described how s/he was able to feedback his/her learning from a project management course that s/he attended, which had a component of organisational management.

> *"basically they're teaching us about an organisation and how an organisation should work, so at least I'm able to put in some of what I learned into the unit ... because being on the Immunology Management Group meetings, you're able to sort of say, well you know we need a bit more structure here and that's probably why these things don't work so well, because*

that's one of the things you're taught is that if you don't have structure in places it's a bit hard for good working relations and things to work as smoothly as people want. So ... yeah ... it was a really good experience ... yeah ...I learned a lot and was able to feed that back".

In the situation reported below, this group member had the opportunity to attend a project management course ahead of the time frame that s/he had written into his/her PDAP. S/he described how s/he was *"struggling"* with managing his/her project because it was his/her *"first experience"* and how,

"It just came at the right time and sort of crystallised a lot of what was happening to me, and since then I've seen these skills improving, and actually right now I think I'm managing my projects a lot better than I initially started off".

In asking whether s/he might have undertaken this learning if it were not for his/her PDP, s/he said,

"Probably not. I think then I would have been more taken up with doing research but not necessarily seeing this as a skill or something that would actually compliment my research. But I think it was exactly right because... because in Africa it is different in that there is a lot more administration than you actually expect... and I think I wouldn't have realised it".

This section explored the question of what is being done differently as a result of engaging with PDP – and these are just some examples of the application of successful learning (as a result of using PDP) to practice. What was particularly good to see was that, not only did these individuals use these learning gains to help them with their own personal development but also through transferring these learning gains, helped to make a contribution to their institutions and units.

SUMMARY

This chapter used the second and third levels of the study evaluation to focus on: (a) PDP in relation to the learning that had taken place as a result of engaging with PDP, and (b) the application of this learning to practice. The results in this chapter showed that there were skills and knowledge gained as a result of the GMP PDP Group engaging with PDP. It also showed the types of skills that the group identified as needing to help them develop their careers as research scientists in Africa; as well as how these were attained. The skills that were gained, related to three main categories: research-related skills (including methodology as well as techniques); generic skills (including the "soft" skills such as, communication and networking skills); and professional and profession-related skills (including teaching, lecturing and updating clinical skills). The results in the chapter also showed that, despite undertaking courses as the main method used to attain these skills, there were also some innovative

methods used to gain these skills – such as, employing "consultants" to work on a one-to-one basis.

The study demonstrated, in the context of Africa, the challenges faced by some of the group members in achieving their PDP objectives, but also highlighted the resourcefulness of the group and the alternative ways in which they approached their learning (such as using internet cafes, prioritising specific learning) and applied it to practice. In application of new learning to practice, the results showed how information was used from training courses, not only for individual benefit but also for institutional benefit, as elements of new learning were applied to improve practice and ways of management within an individual's unit.

In the next chapter the evaluation moves to the final level of the study evaluation framework, and focuses on the results that have occurred in relation to career development as a result of engaging with PDP. It also focuses on the third purpose of the research study – that is, to evaluate the extent to which it might be feasible to transfer PDP more widely with other research scientists in Africa

CHAPTER 7

EVALUATION: PDP AND CAREER DEVELOPMENT

INTRODUCTION

Discussion from the previous chapter on the learning gained as a result of engaging with PDP, and the application of this new learning to practice, is continued in this chapter – as the evaluation moves to focus on the result that engaging with PDP has had on the career development of the individuals within the GMP PDP Group. The chapter uses the fourth level of the study evaluation framework, and with data derived from the follow-up questionnaire and the semi-structured interviews, evaluates the third of the research questions: "to what extent has PDP helped these research scientists with their career development and progression?"

It also uses the experiences from the GMP PDP Group and their suggestions for improvements to develop a transferable system that might be implemented more widely with other research scientists in Africa.

EVALUATION LEVEL 4 – RESULTS OF USING PDP FOR CAREER DEVELOPMENT

Level four of the study evaluation framework, adapted from Kirkpatrick's (2005) "Four Levels of Evaluation" focuses on the results in relation to engagement with PDP. The evaluation in this chapter uses this fourth level to evaluate the benefits gained by the GMP PDP Group as a result of using PDP for their career development. It focuses on whether the strategy was

relevant and useful for their needs, and if so, in what ways? Could they see any value in using PDP for their career development, and is PDP something they would continue to use after the end of the project?

There is much written about the need for capacity development of researchers in developing countries. In terms of their career development, Sitthi-amorn and Somrongthong (2000) see these in terms of sets of skills and competencies (in one of the four domains that encompass health research capacity), while Debowski (2004, cited in Bakken et al., 2006) notes that the career development of career researchers requires significant institutional support, project management skills, and skills to develop effective research teams; Nchinda (2002) outlines the training needs needed to build research capacity; and Zumla et al., (2010) talk of the need to develop *"research training and build career pathways"* as well as building up a critical mass of local research capacity. From the perspective of PDP, it is envisaged that it might be seen as a strategy to help with this career development – and not just in the in the practical sense of the tools being useful for planning, but also as a means to help the individual develop personally, and become confident and self-directed learners (QAA, 2001), demonstrate meta-cognition (higher-order thinking), meta-learning (taking control of own learning) and a high level of self-efficacy (perception of own capability) (Jackson, 2004).

PDP: RELEVANT AND USEFUL TO THE GMP PDP GROUP'S NEEDS

PDP was chosen as a strategy to help this group enhance and progress their career development, because of its versatility of uses in a variety of contexts. However, in order to find out whether PDP was the right strategy to use with this group, and for this purpose, I needed to find out how relevant and useful they felt PDP might be to their needs. To gain this information, I used a five-point Likert-scale response system – ranging from "strongly agree" to "strongly disagree" in an initial questionnaire to gather data from the statement: "I found PDP relevant to my needs for planning my career development and progression".

With a total of 23 group members responding to this questionnaire, 22(96%) of the group agreed with this statement, while 1(4%) disagreed. It would seem, from these figures that the majority of the group found PDP relevant to their needs for planning their career development and progression; thereby suggesting that, as a means for planning, PDP was successful with this group of individuals. To help contextualise these results, I turned the statement into a free response question in a follow-up questionnaire; to which 19 group members responded.

Of these 19, 3 (16%) group members said that they had found PDP "quite" relevant for their career development needs, while 11 (58%) said that it was "very" relevant, and 2 (8%) said that it was "extremely" relevant. One felt that it was *"imperative"* – and *"something that is required throughout one's career, even after the attainment of career objectives."*

One group member felt that PDP was relevant *"to a certain extent"* but that it was the *"availability of job opportunities"* that would determine which way his/her career might develop. Another said that s/he found the PDP "very" relevant to his/her needs but admitted that his/her workload left him little time to focus on his/her PDP. One participant said that PDP was not very relevant for his/her needs, as s/he was *"well established"* in his/her career and had a contract with his/her institution for the next five years.

How was PDP relevant?

Several reasons were put forward by the group, to explain how they felt PDP was relevant for their career development and progression. These can be seen as divided into four main areas: planning, structure, focus (writing things down) and reflection. Two found that PDP helped them to focus on *"weak areas important for career development"* and on *"career planning and monitoring progress."* Writing things down was seen as helping with focus. One of the group members felt that writing things down *"...allows you to think of creative ways to get to your goal"* and that so far a number of objectives have already been achieved, and these probably would not have been achieved *"had it not been made a priority in my PDP*." Helping to structure career development was one of the reasons cited by one of the group members who felt that PDP *"has structured my career development within specific time periods"* and *"has made my career progression goal oriented."* Planning was the reason most cited by the group – from

"guides planning realistically" to *"planning has enabled me to be more focused"* and *"PDP has shown me that planning is an essential part of every undertaking major or minor"* – while others saw PDP as an opportunity to *"network with others",* as *"... a motivating agent for me to continue to improve myself",* and as a *"spring board and reference point to keep on track towards your set goals"*

From the responses it would seem that for the majority of the group PDP has much relevance for their needs; and that it plays a useful and practical role in helping them to plan for their career development.

Seeing the value in using PDP

What I wanted to explore with the group was whether they could see any value in using PDP for their career development and progression, and if so, in what ways? The data to evaluate this came from the results of the Likert-scaled response in the follow-up questionnaire– of which 19 group members responded. Table 15, shows the results.

Table 15
Results from 19 respondents on using PDP for career planning and development

	Strongly disagree	Disagree	Neither Agree or disagree	Agree	Strongly Agree
	n (%)	n (%)	n (%)	n (%)	n (%)
1. Using PDP has helped me to be more decisive about my career path	1 (5)		1 (5)	9 (48)	8 (42)
2. I found that using PDP has helped me to become more reflective about my career planning	1 (5)	1 (5)	1 (5)	2 (10)	14 (75)
3. Using PDP has helped me to gain more knowledge about opportunities in my specialism		3 (16)	2 (10)	6 (32)	8 (42)
4. I can see the value for planning for my career development and progression	1 (5)	1 (5)		8 (42)	9 (48)
5. I would recommend the use of PDP to other colleagues, peers and professionals	1 (5)			5 (27)	13 (68)
6. I am confident that the learning from my personal development objectives will be used in my practice		1 (5)	3 (16)	7 (37)	8 (42)
7. I am confident that I will use my PDP to update my CV		1 (5)	1(5)	5 (26)	12 (63)
8. I feel confident that PDP will help me to understand the need to set targets and action plan my career development and progression		1 (5)	1 (5)	10 (53)	7 (37)
9. I am confident that I will continue to use PDP for my career planning and development after the PDP programme ends	1 (5)	1 (5)	1 (5)	9 (48)	7 (37)

The results from Table 15 (pg. 228) show that, in number 4, 17(90%) agreed that they could see the value in planning for their career development and progression, while 2(10%) disagreed; and 1(5%) strongly disagreed. To help explain some of these results I looked to the data from the semi-structured interviews. I particularly wanted to explore some of the reasons that might help explain the 2(10%) who disagreed, and could not see the value in planning for their career development and progression.

GMP PDP CAREER PATHS

In looking at the interview data I also wanted to explore the results from the first statement in Table 15 (pg. 228) of whether PDP had helped them become more decisive about their career path. The responses to this statement showed that 17(90%) agreed that it did, while 1(5%) strongly disagreed and 1(5%) neither agreed nor disagreed. Again, I particularly wanted to explore some of the reasons or issues that might help explain the disagreement responses. To gain this data, in the interview, I asked them to describe a little about how their career had unfolded over the duration of the PDP period, and what they felt had gone well and what, not so well. This yielded a substantial amount of data, and in processing the data, found that some distinct themes of how individuals felt about their careers emerged; and these appeared to be related to the stage of career development that the was individual at.

Senior career researchers

For the most part the fairly senior researchers who were established within institutions found that their careers were on track – one said that s/he felt his/her career was *"70% on track"* and another said s/he would say his/her career was *"75% on track*. For these researchers they appeared to be more settled and decisive about their career development and progression; and in relation to PDP and career development, one senior researcher said,

> *"I don't think PDP was for me because my career had not changed at all over the duration of the PDP programme. I'm still involved with clinical trials, still with the same institution and still have the same salary".*

For this participant, it would be fair to say that s/he clearly felt no need for PDP, and possibly, therefore attached little value to it as a strategy to help him/her with his/her career development and progression. Despite this, s/he did go to say that s/he thought it could be a good idea for the *"juniors"*.

Advanced early-career researchers

For the slightly more advanced early-career researchers (that is, those who were fairly settled into their first postdoctoral research studies) they tended to be quite positive about their career progression, despite the day-to-day challenges of doing research in Africa. One said,

> *"...I'm happy with the progress that I have made so far... honestly, looking at all the problems we have here...well...if you look at it this way, in Africa things are hard to come by...like the simple things you would do in Europe... like you know ordering. For example....just like supplies that you order...you can order today and have them tomorrow and in Africa things work differently, if you're not planning your work very well not planning your orders very well you know you can spend a month waiting for your new supplies to come...so it's difficult to do science in Africa.*

Another, in describing the challenges faced in trying to secure a university post, said that, *things don't always work out the way you want them to"* but felt that the rest of his/her career was going well, in that s/he was doing research, writing papers and applying for grants. There was also some optimism from some participants who felt that their careers were *"evolving"* and with *"a lot happening".*

Early-career researchers

For the very early-career researchers who had just completed or were about to complete their PhD studies, they were a bit more uncertain about their career progression. Part of the GMP PhD programme had a postdoctoral support element to it, whereby the students after their PhD studies were eligible to apply for a re-entry grant, which provided them with postdoctoral research funding. The PhD programme had a staggered

start so there were varying completion points, which meant that the students who started later missed the round of call for proposals for re-entry grants. For these group members, their experiences were varied, as they found their way on return to their home country. One said how through networking s/he had made *"contact with a number of people who potentially would help me develop myself further…"* and how s/he had also been in touch with *"a few people who are eager to work with me but nothing has really started yet but I know they have me in mind".* But s/he was also optimistic in that s/he felt that,

> *"it's all beginning to bear fruit now so things will work for the better but so far things are not really as I expected but I think it's all on the same career path anyway".*

Another participant was less positive about his/her career progression, and said,

> *"I can't actually...say much about my career because ...unlike my colleagues who finished earlier and got a re-entry grant that keeps you busy...because our country doesn't give grants for research, they tell you there will be a place for you to work if you come, they don't give money for research so if you finish and you go, and you don't have any grant for research, you just go and sit there... So that is that stage that I am at now".*

ATTRIBUTING PDP TO CAREER DEVELOPMENT

So what role did PDP play in the career development and progression of these career researchers at their varying stages of their career development? Several of the group members attributed PDP to their career development, including the participant above who was less positive about his/her career progression. For him/her s/he said that she wanted to be a scientist and to improve himself/herself and become a better scientist, and this is where s/he saw PDP as helping. In his/her view, s/he says, *"you know doing a PhD does not make you a scientist. You need those skills and you need a PDP to help you".* For this individual s/he realised that PDP for him/her was going to help him/her *"get through the steps"* to help him/her achieve his/her goal of becoming a *"better scientist".*

For another group member, in the middle of his/her re-entry grant post-doctoral study, felt that his/her research career was *"evolving"* and that in between our two meetings, s/he was thinking differently. Previously s/he was just focusing on his/her research, but with PDP s/he felt that s/he,

> *"had the opportunity actually to focus on other issues... important issues like networking and finding collaborators, lecturing... that were not necessarily covered in the in the PhD programme but they are also crucial for my development as a scientist and a research scholar, because my main aim is to become an accomplished researcher and a lecturer in the university"*

This s/he also largely attributed to the fact that with PDP you write things down and you review them, so you do make them happen. Other group members saw PDP differently. One group member, as previously cited relates, how in the context of Africa, you can plan and try to achieve, *"but you may not necessarily get it".*

Another felt that PDP was a good thing and useful for him/her but that,

> *"it is not enough having a PDP action plan, the individual has to position him/herself in the path of opportunities and this requires a very high level of self awareness, motivation and a level of people skills".*

The self-awareness and motivation that this group member talks about are exactly the characteristics that it is hoped individuals might gain from using PDP. Jackson **(**2004) sees PDP as an integrated process that encourages people to learn about themselves and reflect on what they are doing; to value themselves and their achievements; and identify ways of improving themselves. This is clearly evident in most of the examples from these participants; and with the participant who felt that individuals needed to have *"self-awareness, motivation and people skills"* this could be seen as a self-reflection on what s/he got out of PDP.

RECOMMENDING PDP TO OTHERS

Using PDP to help enhance their career development was an idea that originally came from the group. As they embraced it as a good idea at the time, I wanted to find out – after they had had the opportunity to work with it for two years – whether (from their experience) they would recommend using PDP to other colleagues, peers and professionals. Results in Table 15 (pg. 228) and from 19 group members showed that, while 1(5%) strongly disagreed, 18(95%) agreed that they would recommend PDP to others. This would seem that, despite some reservation from some of the group members about PDP not helping them to be more decisive about their career path, or not seeing the value in it, they still overwhelmingly felt that they would recommend using PDP for career development to others. This is also supported by the data from the interviews, which were conducted two years after the group were engaged with PDP. These results could be explained by the fact that PDP is a process that aims to promote self improvement, which can empower individuals, through building their self-identity, self-awareness and self-efficacy (Jackson, 2005); and with all self-improvement processes they do take time, so the benefits are not seen immediately. This is seen in the response from one of the participants, who said that s/he *"certainly"* would recommend it,

> *"because of the benefits that I have achieved through the PDP programme, the opportunities that I have been able to have, to be able to think way beyond my PhD and what plans I have for my own career".*

Another group member said that s/he would *"definitely"* recommend it, particularly to *"postdoctoral scientists because they need to make right moves and career decisions after a PhD".* For another, s/he felt that s/he would recommend it because *"it has been useful to me"* – but his/her thoughts about how PDP is used, went beyond thinking about it in terms of a strategy for planning or a process of self improvement; s/he saw it as a way in which it might harness individuals and that,

> *" if research capacity development was to happen you need to get people right from the beginning, to train them to have their mindset to be focussed – to know what they want and set their own goals and find ways of achieving those goals".*

This is an interesting point because it could be argued that the notion of training people to have a particular mindset conflicts with the notion that PDP, as a process helps to empower individuals by helping them to become self-aware, confident and self-directed learners. However, it is fair to say that PDP is a change process, and that if it is used successfully, it does change mindsets – and while the notion of "training" someone to change their way of thinking has connotations to behaviourism and "conditioning" and therefore conflicts with the autonomous freedom that individuals have in being able to self-direct their learning within PDP, it can be seen as means (outside of the PDP process) to harness individuals to help with research capacity development.

PDP: A "ONE-OFF" ACTIVITY OR HABITUAL BEHAVIOUR?

Using PDP with this group of individuals came about as a result of a request from them to assist with developing the skills they felt they needed to help them progress with their career development in their home countries. What I wanted to explore was whether they still thought it was a good idea now that they had the chance to work with PDP for two years and understood what was involved. All of the group members agreed that it was a good idea; even the one who felt that it was not for him. One said that for him, he felt it was better than they originally thought, because he never really envisaged achieving so much in the two years, and that he thought that this was down to planning and writing it down. So with this in mind, I wanted to find out whether PDP for them would be a "one-off" experience that they drew benefit from or whether it was something that would become habitual with time (Floodgate and Nixon, 1994); or as Eraut (2007) proposes, move from an explicit routine to becoming a tacit routine after several years of experience.

Overall, the group valued PDP highly, and generally with something that is valued highly, it is nurtured – so I wanted to see whether this would be the case. To find this out I asked the group how confident they felt about continuing to use PDP for their career planning and development after the PDP programme ends. In Table 165 (pg. 228) the results from 19 group members that 16 (85%) agreed that they felt confident that they would continue to use PDP after the programme ended, while 2(10%) disagreed

and 1(5%) neither agreed nor disagreed. These results were supported by the interview data, in which some group members felt that they would use PDP after the programme ends. One said, *"it's part of my life now... there's no way that I could do without it"* while another felt that it had taught him/her a lot on how to be more focused, and that *"it would be a waste if I didn't follow it up or keep using it to develop myself further"*. For another group member, he saw PDP, in his/her case, as a long term thing and that, *"much of what I'm doing now will be used five years from now"*, while another saw its benefits in keeping track of things that s/he had done and wants to do, and for him/her s/he would continue to use it because it is a *"good way of monitoring my progress"*.

TRANSFERABILITY OF PDP MORE WIDELY IN AFRICA

In addition to exploring the use of PDP with this group of individuals, the research study also aimed to use the lessons learned from their experiences to develop the PDP system into a transferable tool for future use with research scientists based in these and other developing countries in Africa; and to explore how feasible it might be to implement PDP more widely in Africa.

To look at how feasible it might be to transfer the use of PDP to a wider context in Africa, I needed to find out whether: (a) PDP was a concept that could be transferred to developing country settings in Africa, and (b) if this was the case, what would be needed in order to help it be used successfully

in this context. The study data showed that, from the experiences of the GMP PDP Group they were able to use the principles and processes of PDP within their context in Africa successfully, in order to enhance and progress their career development. Their experiences also showed how they used the support elements within the GMP PDP programme to their advantage, in order to help them achieve these successes in their PDP. The data therefore, would suggest that as a concept, PDP could be successfully transferred to developing country settings in Africa. However, I was aware of the fact that this GMP PDP programme was a much supported programme, and also aware that this possibly contributed to its success with this group. What I needed to know therefore was what essential elements might be needed within a supported PDP programme, in order for it to work within a wider context in Africa. For this, I looked to the interview data, where I asked the group, from their experience, what they felt were the essential elements needed if PDP were to be introduced more widely with other research scientists in Africa. From their collective responses, four main supportive elements emerged as being needed for PDP to work successfully in Africa. These, they saw as: personal support, financial support, institutional support and time. While financial support featured as one of the support elements needed, from the majority of the group, it was not seen as an essential element; having personal support was seen as the most important support element.

Personal support

On the element of personal support, all of the group members felt that this was essential to help make PDP work in Africa. One group member felt that the initial support was *"very important"* because,

> *"when you get the initial support and realise how important it is, and if people see the value of it and see how they have been able to do so much within two years, then I think ... you can carry it on even if you had the money or not because you can still plan your time and plan little activities... in your normal day-to-day life"* .

Another said that she found it, *"helpful just knowing that there are others ... there's another set of people around the continent using it, so that's encouraging"*. While all of the group members saw personal support as being an essential element, they did think that this support was something that could be provided by a mentor who had experience with PDP. They felt that the support should include guidance with help in developing PDP action plans, and with monitoring (and this they saw more in the form of reminders that their reporting was due, rather than making sure that they had carried out their PDP activities) and review, which help them with future planning. When asked whether a good PDP system with built-in alerts to send reminders for the *"periodical reviews"* could work, the response was yes it could, *"but you need motivating and the system can't do that"*.

Having personal support and a mentor to help with PDP is a point that ties in with the supportive element of institutional involvement. Three group members particularly felt that their PDP experience might have been enhanced had they had the support from their institutions. One of these group members particularly felt that *"all stakeholders"* should have had involvement in her PDP. In asking in what ways they felt the institution might have been supportive, all said that they felt that it was important for the institution to know about PDP. It was unclear as to whether they felt institutional involvement should be to provide added value or whether they felt that there needed to be total "buy in" from the institution; as is the case in PDP policy development within the Higher Education Institutions in the UK (QAA, 2001).

Financial support

On the issue of financial support, one group member said that,

> *"I know finance is always going to come up...finances is always going to be an issue but I still think it's possible to run a PDP without the finances... even though... no one would argue that finances are not a good thing. It's welcome; let me put it that way"*

Another felt that, *"you can get money from within the organisation or elsewhere"* but it was important to have a person experienced in PDP to help with *"the periodical reviews, because I think you can do it then put it*

on a shelf". S/he particularly felt that, *"you can have the money, but if you don't have somebody who will guide you then you achieve nothing".* Others felt that the funding was essential and that, *"there has to be some kind of funding that will kind of start you off"* and that *"you need this money"* to help with some of the skills that *"you can't get people to help you with".* While these group members expressed their views on financial support being very important, one did go on to say that, *"you need kind of some support as well"*, while another said that,

> *I know there are some things that you do not need financial support for... things like... say... proposal writing skills. If you want proposal writing skills it doesn't really require you to go on a course... I mean you can learn that just by writing a grant with somebody else, and you know... and you learn in the process. So I would say... there are areas in the PDP where people can just... you know do without the financial support... as long as you know the moral support is there... that's what you need, you need mentorship, mentorship would be a key thing.*

Institutional support

The varying levels of institutional involvement in the GMP PDP programme was one of the lessons learned from experiences of working

and supporting the individuals on this PDP programme. There was a considerable time lapse between the start of the PDP project and implementing the (PDP) programme. This meant that my main focus had to be on developing the PDP system quickly, in order to implement it so that the group could get the optimum time from the duration of the project. I had also made the assumption that, since the group's PDP budget was sent to their institutions, the directors of their institutions would be aware of the GMP PDP programme; but discovered on some of the monitoring and support visits that this was not always the case. This varying level of awareness seemed to have an impact on the type of support experienced by the individual group members. For the members of the group whose institutions were aware of their involvement in the GMP PDP programme, they tended to fare better in terms of being supported with their PDP activities – for example, in getting time off to attend courses, or payments for courses being made simpler through invoicing and payments made directly to the training institutions.

In implementing a PDP programme in a wider context in Africa, it would be essential to get institutional involvement in the programme. Not only would this promote added value to any PDP programme, but "buy in" from the institution would also help with getting the essential support elements built into the PDP programme – for example having a mentor assigned to the individual to help with the personal support, guidance, monitoring and

review that the Group felt were essential elements of support in order to implement PDP more widely in Africa.

Time

Timing of introducing PDP was not so much a supportive element but an important factor that the group felt made a crucial difference to their PDP experience. The fourteen postdoctoral researchers overwhelmingly felt that they might have benefited more from the PDP programme, had it been introduced much earlier in their career development. They felt that it not only came at a time when they were most active in taking up postdoctoral research opportunities and therefore had little time to devote to PDP, but they also felt that they could have done with the skills development earlier, so that they could be helped through the postdoctoral process. Twelve of the postdoctoral researchers suggested that PDP be introduced at the start of the PhD programme, when there is less conflict between commitments and more time to devote to skills development, and two suggested that it be introduced in the second year of the PhD programme when there would be more understanding of what skills might be needed in order to enhance and progress their career development. The ten doctoral researchers were divided on the timing of introduction. For the ones who were not yet at the crucial writing up stage of their PhD thesis, they felt that the time of introducing the GMP PDP was a good time because they could spend some time thinking about their career development, but for three out of these ten who were at the crucial writing up stage, and close to submission, they felt

that they could not devote the time to PDP; and all three of these researchers delayed the start of their PDP until after the submission of their PhD thesis.

This research study emerged following a need from a group of sponsored early-career researcher to help develop the skills needed to progress their career entry and continued development. At the time of the project inception there was much discussion around building a critical mass of researchers in Africa. Initiatives like the Gates Malaria Partnership (GMP) with its broad aim of helping to address the burden of malaria in Sub-Saharan Africa, through investing in infrastructure in Africa and in individuals through funding research training and grants, were seen as contributing to building this critical mass of researchers in Africa. Increasingly the strategic shift is towards externally-funded capacity-building and capacity strengthening initiatives being led by African institution led consortia (Wellcome Trust, Press Release, 2009). This includes African postgraduate research students gaining their degree from their home institution as opposed to joint degrees with a northern partner institution.

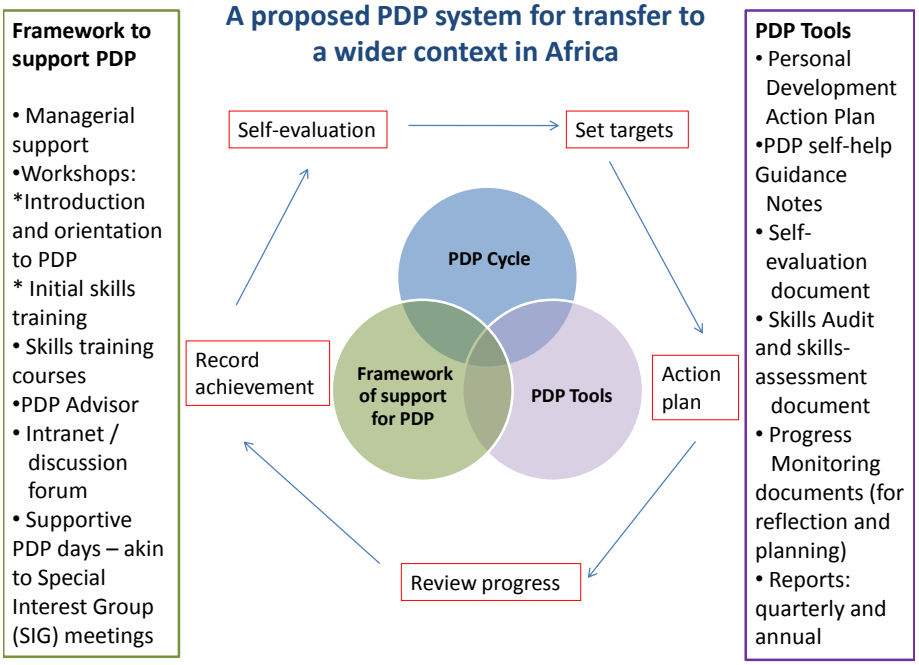
While the emphasis is on building the capacity of individuals, it is also about developing some sustainability into projects through using strategies like PDP (mentorship being another) to help build individual confidence to take ownership and plan and manage their career in Africa. Hence the interest by other consortia in Personal Development Planning, and the need in this

research study to use the lessons learned to develop a workable system to be situated within an African institution setting.

A PROPOSED PDP SYSTEM FOR TRANSFER TO A WIDER CONTEXT IN AFRICA

The results from the evaluation of the GMP PDP Group's reaction to the GMP PDP system, tools and processes (as seen in chapter 5) and in particular the suggestions of improvements to these elements of the GMP PDP system were used to develop a PDP system that might be used to transfer to a wider setting in Sub-Saharan Africa. This proposed PDP system, as seen in Figure 7, was based on the GMP PDP system, in that it still used the PDP cycle adapted from Kolb's (1984) Experiential Learning Cycle and the QAA (2009), and it still used PDP tools to support the processes of the PDP cycle, and a framework of support to support the whole PDP system.

Figure 7. A proposed PDP system for transfer to a wider context in Africa



The system is designed to sit within, and be led by an institution in Africa. The rationale for doing this was to contribute to meeting the needs of current trends; and with the emphasis more recently on supporting research capacity-building initiatives in Africa, which are led by the African institution (of note is the Wellcome Trust funded initiative of African-international consortia across more than 50 institutions from 18 African countries[6]) it made sense to look at developing a system that would sit in, and be led an African institution.

With this is mind, some of the support elements from the GMP PDP system (such as the individual budget and the "PhD days") were removed,

6 http://www.wellcome.ac.uk/News/Media-office/Press-releases/2009/WTX055742.htm

and in their place, access to skills training courses and supportive PDP days were added. In addition gaining managerial support was added to help embed PDP as a new initiative into the institution.

Some recommendations are made to help facilitate the transfer of this proposed system to an African setting. These included:

1. Meetings with the directors of the institutions and faculty heads to get PDP "buy in"
2. Funding to implement PDP within the institution in Africa
3. Training for a PDP Advisor / mentor
4. Help with developing skills training courses within institution / faculty
5. Help with developing a discussion forum / intranet
6. Help with setting up regular, supportive PDP days (to help support a new initiative and embed PDP within the institution)
7. Face-to-face induction programme and orientation to PDP
8. Workshops to provide training on completing PDP tools and initial skills training on:
    - Undertaking a self-evaluation and skills assessment
    - Writing an Action Plan with SMART objectives
    - Reflective writing for your PDP
    - Writing reports for your PDP
    - Recording achievements and building a CV

It should be noted that for PDP to be developed and established within institutions in Africa, considerable pump prime funding would be needed.

SUMMARY

This chapter used the final level of the study evaluation framework to evaluate the results of using PDP for career development with the GMP PDP Group. In addition, it focused on exploring the feasibility of implementing PDP more widely with similar groups of research scientists in Africa.

The results from the study showed that, overall the majority of the group saw the relevance, usefulness and value in using PDP for planning for their career development and progression, and with the exception of one participant, felt that using PDP had made a positive contribution to their career development.

In exploring the feasibility of implementing PDP more widely with other research scientists in Africa, the results suggest that the concept, principles and processes of PDP could be transferred successfully to developing countries in Africa; and with four main supportive elements of: time, personal, financial, and institutional support, seen as essentials in order to help PDP to be used successfully with a similar group of research scientists in Africa.

From the suggestions made by the GMP PDP Group on improving the PDP system, tools and processes, a PDP system for transfer to institutions in

Sub-Saharan Africa, was developed and proposed. In addition, some recommendations were made to facilitate this transfer.

In the next chapter, the results and discussion from all chapters provide a summary of the research study and the main findings in relation to the research questions; and in using key lessons learned, puts forward recommendations for future PDP use in a wider context in Africa and further research in this area.

CHAPTER 8

SUMMARY, KEY LESSONS LEARNED AND RECOMMENDATIONS

INTRODUCTION

This chapter provides a summary of the study, and the main findings in relation to the research questions. It provides a discussion of the key lessons learned, and puts forward some recommendations for possible future direction. In addition it makes suggestions for further research studies in this area.

SUMMARY OF THE STUDY

The purpose of this research study was to explore the use of Personal Development Planning (PDP) for career development with a group of research scientists based in Sub-Saharan Africa. The project emerged following an expressed need by this group of early-career researchers for help with their career entry and continued development on return to their home countries, following postgraduate research studies in the UK and Denmark. With PDP proposed as a strategy to help achieve this, the study set out to formalise the PDP process and rigorously develop and evaluate PDP to see whether it was a strategy that could be transported and used in developing country settings in Sub-Saharan Africa.

At the time that PDP was being proposed as a strategy to help these individuals with their career development, there was much discussion

around capacity building initiatives in Africa being led from Africa, and by African institutions; and including a shift towards individuals undertaking (and being awarded) their research degrees by their home institution, as opposed to the joint research degrees currently offered. An example of this shift can be seen in the Wellcome Trust African-institution led consortia initiative[7] – which is just one of the initiatives to promote this shift.

With the potential that PDP has to build confidence, as well as capacity in individuals, there was some interest in the work that the Gates Malaria Partnership (GMP) was doing with PDP at the time. This led to the need to rigorously evaluate PDP for use with individuals in Sub-Saharan Africa and to explore the feasibility of PDP being implemented more widely with similar groups in developing countries in Africa.

METHODOLOGY

The study used an adapted evaluation framework devised by Kirkpatrick (2005), approaches from Action Research and cross-paradigm methodologies to undertake a holistic evaluation of PDP, the systems and processes from an African perspective.

An Action Research approach was chosen to frame the study's methodology, not only because of its principles of engaging individuals and working with them rather than studying them, and the cycles of improvements (to refine tools and processes) made it a good fit for the research "problem", but it was chosen also because of its underlying

[7] http://www.wellcome.ac.uk/News/Media-office/Press-releases/2009/WTX055742.htm

philosophy of having the potential for empowerment. The need to build individual capacity is not just about building subject knowledge but also about helping the individual to build confidence, so that they feel empowered to take ownership of the planning, managing and developing of their careers in Africa.

In the career development literature in the study, proactivity and the proactive traits of self-confidence and self-promotion are seen as essential in order to successfully manage a "boundaryless" career – which is seen as the most likely career model for researchers. These traits or characteristics can be seen as essential to developing any model of career, and not just in Africa. With using a combination of an approach like Action Research and a strategy like PDP, it is hoped that they might help the individual to develop the confidence needed to plan and manage their career development in their home countries.

The study adapted the "Four Levels of Evaluation" framework devised by Kirkpatrick (2005). Following the advent of this project, Kirkpatrick's evaluation framework has been proposed by Peters (2007) as a framework to evaluate PDP. This study was a good opportunity to adapt and use the framework, and to evaluate how the adapted version worked for evaluating PDP. The study made minor adaptations to Kirkpatrick's original framework (see pg. 71) but they were deemed necessary in order to frame the research questions in a way that a holistic evaluation could be undertaken – since this study was evaluating several elements of PDP, namely the tools

as well as the processes, in addition to the project processes, such as implementing, monitoring, supporting and evaluating how these processes and systems worked. For this research study, the adapted framework worked well, in that the levels provided a good structure to undertake a holistic approach to the evaluation. The study used the levels as Kirkpatrick intended – that is, moving from level one through to level four in sequence. However, where the study did deviate from Kirkpatrick's intention, was in the use of the data for each of the levels. Kirkpatrick proposes that each level is completed before moving onto the next level, and that the data from the previous level informs the next level. While this did happen to a certain extent, the study generated a substantial amount of data, and it was therefore necessary to move back across the levels, for various reasons. These included, using different types of data for triangulation, and to use the interview data, not only to supplement the data from the different levels, but also to provide some further context to the quantitative data. This framework, and generally Kirkpatrick's framework, worked well for evaluating PDP in this study, since it allowed several aspects of PDP (for example the systems as well as the processes and outcomes [learning an application to practice]) to be evaluated simultaneously.

SUMMARY OF THE MAIN FINDINGS

The main study findings relate to the four research questions of: (1) how do the researchers feel about using PDP? (2) what (if anything) was being done differently (in terms of learning gains and application to practice) as a result

of engaging with PDP, (3) to what extent did engaging with PDP help these research scientists feel confident about planning and managing their career development, and (4) how far was it feasible to implement PDP more widely with other research scientists in Africa.

The majority of the participants saw the relevance, usefulness and value in using PDP for planning their career development and progression; and with the exception of one participant, felt that using PDP had made a positive contribution to their career development – and with 16 (85%) out of 19 agreeing that they would continue to use PDP beyond the PDP project.

It would seem that, with four main supportive elements of: personal, financial, institutional and time, it would be feasible to implement PDP more widely with other research scientists in Africa.

KEY LESSONS LEARNED

There were many lessons learned from this research study, but the key ones were the challenges and assumptions that not everyone necessarily possesses the reflective, planning and doing skills that Jackson (2005) see as essential to PDP. It was evident that additional skills training was needed to facilitate developing a PDAP, and that it was therefore not enough to provide the participants with a user-friendly system, supporting documentation, and offers of help, but that it was crucial to ensure that they were equipped with the necessary skills to undertake the PDP processes, such as self-evaluation, action planning and setting targets, effectively.

In the context of Africa, a significant lesson learned was that, the assumption made that resources could be found locally to help the participants undertake their PDP activities was not correct. Difficulties associated with finding good and reliable local resources, either necessitated the need to incur additional costs in travelling nationally and/or regionally, or finding alternative ways in which to meet their PDP objectives.

Another key lesson learned from the study was for me as the researcher. While it was necessary to evaluate all the elements of PDP and the project processes, because this was the first time that research in this area was undertaken and it was needed for further PDP implementation, it was a substantial study which took a lot of resources for a single researcher.

RECOMMENDATIONS

With suggestions and recommendations from the group's experiences, and key lessons learned from the study, a transferable PDP system is proposed for use within an institutional setting in Sub-Saharan Africa. Recommendations to facilitate to this setting include: Funding to implement PDP within the African institution; getting "buy in" from senior management within the institution; help and assistance with setting up a framework of support, such as, skills training courses (development and delivery); training a PDP advisor; setting up regular PDP support days; initial workshops for introduction and orientation to PDP and initial skills training.

See chapter 7 for a comprehensive list of recommendations to facilitate implementing PDP more widely in Africa.

SUGGESTED FURTHER RESEARCH

There are several areas for further research that arise from this study. However, there is a key follow-up study that should be undertaken, and would continue directly on from this study. While this research study showed that using PDP made a positive contribution to helping these individuals with their career development, what it did not show (given the focus and time frame) was the broader impact that PDP has on career progression. Further studies would be needed to explore this aspect, to see whether PDP has a significant impact on the career progression of early-career researchers. To evaluate PDP in this broader aspect, a follow-up and longitudinal study would be needed with this group of participants, to evaluate the impact that PDP has had on their career progression. An evaluation study could also include a study into whether it was PDP as a strategy that helped them with any career progression or whether they were just a group of motivated individuals.

The study findings showed that, with the elements of personal, financial, time and institutional support built into a PDP programme, it would be feasible to transfer PDP to a wider setting in Africa. Further studies would be needed to evaluate any implementation of PDP to a wider setting in Africa.

CURRENT EVENTS

I continue to work with this study cohort in my capacity as professional development and educational advisor on a new capacity building project. My role includes continuing to support this group with their PDP, and to develop and implement a formal mentorship programme to consolidate their support. The project has also implemented a PhD programme for 20 postgraduate research students; who will be undertaking their research studies (and gaining their degrees) from their home institution, but will have access to support from a northern partner institution. The proposed PDP model from this research study has now been implemented with this cohort; and from lessons learned in this research study, a six-week, face-to-face induction programme was developed and implemented. This programme included skills training in research methodology (using the skills set identified by the group in this study) and orientation and skills workshops in PDP, to help them with developing their PDP. Some of the recommendations from this study are in effect already implemented; and to gain insights and lessons into how these are working, an evaluation will be conducted with this new group in due course.

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APPENDICES