Practitioner development: From trained technicians to reflective practitioners

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Abstract

The EPSRC funded Rethinking Project Management Network produced several insights into new directions for project management theory and practise, highlighting gaps between current theory and practise in several areas. This paper reviews the discussions around project management practitioner development that arose out of this rethinking process where project management is seen as growing from a predominantly technical skill-set to a broader practise of reflectively managing the things needed to provide a successful project outcome. In particular, the paper identifies and addresses the challenges of developing competent project managers in a world exhibiting increasingly complex project challenges, and when skilled resources at all levels are often increasingly scarce. We provide examples of practical and academic initiatives that are designed to address these challenges: internal assessment and development programs, reflective practice thesis, and distance-based critical management MBA. We conclude by speculating on some of the further challenges in developing reflective practitioners that have yet to be resolved.
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1. Introduction

In making sense of the proceedings of the ESPRC funded Rethinking Project Management Network, Winter et al. [59] identify a move from seeing project management practitioners as pre-eminently trained technicians, able to follow methodologies and use techniques on well defined projects, to that of reflective practitioners, able to learn, operate and adapt effectively in complex project environments. Rather than responding to a change in the nature of project management, this transition can be seen as a broadening of the application of project management and a richer conceptualisation of the nature of projects and the reality of managing them. In the course of discussions of the Network the focus could be seen to move from the practice of project management and the need to develop project managers as practitioners to the practice of managing projects and the need to enhance the practice of all those involved in the process, a theme which is central to the Morris et al.'s paper [32] from the Network on the nature of the professions in project management.

Drawing on the discussions and proceedings of the Rethinking Project Management Network, this paper begins with a critique of the current status of project management practitioner development. This is followed by a review of the changing environment and conceptualisation of project management and discussion of the implications and issues for the development of practitioners. Examples of practical responses to the need to develop practitioners and enhance project management practice will then be described, drawing on presentations made to the Rethinking Project Management Network and on the research and practice of the authors.

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2. Current status of project management practitioner training and development

Organisations interested in training and developing their project management staff look for help from professional and academic authorities in the field. Prima facie, it would seem sensible to look for international standards that training and development might help practitioners to achieve – in the hope that this would signify, to some degree at least, a certain level of competence. In fact, we contend, what they would find would not be adequate to address many of their needs, certainly the needs of those managing in the more challenging project, or program, environments. One of the first difficulties, then, is determining what are taken to be the roles of practitioners involved in the management of projects. For competency development is role specific [11,23] and whether one is an enterprise seeking training and development support for its key roles, or whether one is looking for more general education, one needs a clear idea of the 'role space' the training and development is intended to support.

What roles are encompassed by the term "practitioner", and what are the most common forms of development available for these practitioners? One way of identifying practitioner roles would be to look at project management job families in organisations. However, one of the challenges for project management practitioner development is that project management job families and career paths are not well established. In fact, a major challenge for the field has been the use of the term "project manager" to cover a very broad range of responsibilities from management of large, complex or urgent projects [48] to multi-project organisational change (which is almost certainly a program, and should be managed by a program manager). There is also confusion as to whether the project manager is only execution focused – delivering to time, cost and quality targets already set (by whom?) or is involved in helping the project development functions define these in the critical "Front End".

The qualifications offered, especially by the professional associations, provide a useful way of determining what roles project managers are considered to fulfill. To date practitioner development in the field of project management has focused on the role concept of a "project management professional", a term which may be interpreted as including project team members, project team leaders, project managers and project directors.

The term is laden with promise; the reality is more disappointing. First there is the issue of professionalism itself, then the question of whether the scope of the qualification and its associated training and development material is appropriate to the real roles filled by practitioners; and finally there is the issue of whether the form of training and development is appropriate to both these two.

There has been much debate in recent years concerning what constitutes a profession or a professional and whether project management has yet or will ever achieve the status of a profession [32,62]. The nature of the predominant project management qualifications certainly demonstrates a difference between project management and related and established professions such as engineering and architecture. Whereas degree qualifications predominate in the established professions, certifications offered by the professional associations, colleges and commercial trainers predominate in the field of project management.

Whether or not we consider that project management has yet or ever will achieve the status of a profession, the term "project management professional" has gained wide currency largely attributable to the popularity of the Project Management Institute's PMP® or Project Management Professional certification. At July 2006, 198,048 people were certified as PMP®'s [43].

Gaining the PMP® is of course not a guarantee of competence. The Project Management Institute itself makes it clear that the PMP® credential does not indicate that a person is qualified as a Project Manager, but "tells current and potential employers that you have demonstrated a solid foundation of knowledge from which you can competently practice project management" [42].

Qualifications for project management practitioners are offered by other professional associations such as the International Project Management Association which has four levels of certification [37], that extends from a knowledge based entry level qualification (Level D) through Project Manager (Level B) to an international Project Director (Level A). Both the PMP® and IPMA qualifications are based on a defined Project Management Body of Knowledge [33,13]. The Australian Institute of Project Management has a three level certification process covering Team Members, Project Managers and Project/Program Managers which is based on competency standards describing performance criteria for workplace performance following a structure similar to that of PMI's Body of Knowledge, the PMBOK® Guide.

Project management qualifications at the vocational level are offered within the National Qualification Frameworks of Australia, South Africa and the United Kingdom, again addressing project team member and project manager roles. The Global Alliance for Project Performance Standards has developed globally applicable standards for two levels of Project Manager and is currently working on Program Manager standards [11,14,19]. Other project management qualifications that are strongly promoted, particularly in the United Kingdom, are the PRINCE2 Foundation and Practitioner qualifications which are essentially certifications of knowledge of the PRINCE2 methodology.

Project management is offered as a significant component in a range of undergraduate and postgraduate academic qualifications including construction, engineering and IT. Academic qualifications specifically in project management are offered primarily at postgraduate level including Graduate Certificates, Graduate Diplomas, Masters Degrees and more recently, Doctorates.

In recognised and related professions such as engineering, architecture and construction, a degree is a pre-requisite for practice and the role of professional associations is in accrediting academic programs to ensure that they provide suitable preparation for practice. In these professions the associations also offer post graduation professional certification of understanding of the basic requirements for practice including professional ethics. In project management, academic or degree qualifications are "nice to have" rather than a pre-requisite for practice although many project management practitioners hold first degrees in other fields. The most sought-after qualifications for project management practice, and those most likely to be required or supported by employers, are those offered by the professional associations as described above or through internal corporate accreditation programmes. Unlike degree qualifications which require between 1 and 4 years of full-time or equivalent part-time study, the most common (and non-academic) qualifications for project management, offered by the professional associations, require up to 5 days of study, and some or all of a knowledge test (largely multiple choice), interview, simulation, and evidence of experience although there is growing interest in performance based qualifications, requiring presentation of evidence of competence against specified performance criteria. In either case, getting this level of qualification is obviously easier than getting a degree, but which is appropriate?

Project management practitioner development is therefore pre-eminently focused on roles of the project Team Member and (an execution focussed) Project Manager; and primarily on the (explicit) knowledge required, as generally defined in the professions Bodies of Knowledge. The focus is on short-term vocational training and increasingly on demonstrated workplace experience rather than on education.

Even in academic programs, education in project management is often pitched at the same level as the certificate and commercial training in project management, covering largely the same material based on the project management bodies of knowledge (BOKs) [54,60]. This emphasis is reinforced by the Global Accreditation Center (GAC) of the Project Management Institute, which is the first of the professional associations to seriously address accreditation of academic programs. Accreditation requirements state that the "core of a professional degree consists of the required courses that address the generally accepted processes and knowledge areas found within the project management profession and as described in A Guide to the Project Management Body of Knowledge (PMBOK® Guide)" [41]. For those who question the scope, and thereby the broader appropriateness and relevancy of the PMBOK® Guide this is not comforting, although the GAC currently has this under review.

The BOKs in fact exert an extremely strong influence on the conceptualisation of the training and development deemed appropriate for project management. The majority of current offerings in terms of training, education and qualifications offered by professional associations, commercial training organisations and academic institutions and supported by both practitioners and their employers are heavily weighted towards the knowledge areas of these BOKs. In doing so, those following the PMBOK® Guide are de facto promoting a conceptualisation of projects as having well defined goals and being amenable to management throughout a life cycle with clearly defined beginning and end using a largely linear sequence of tasks and calling on codified knowledge, procedures and techniques. The ESPSRC Network [59] accepting that this characterisation has significant value for much project management practice, argue that it falls far short of the reality, particularly of the larger and more complex projects.

As a result, practitioner development has tended to exclude or marginalise knowledge, skills and behaviours that overlap or are considered as belonging to other areas of practice such as general management, human resource management and a range of technical fields. Project management practitioner development to date may therefore be seen as both narrow and shallow. Numerous current articles (see for example [20,38,53,60]) and presentations (see for example [28,54]) recognise these limitations in project management education, the challenges facing those interested in practitioner development, and suggest some ways to address them.

3. Challenges for practitioner development

As the main findings of the Rethinking Project Management Network show [59] the conceptualisation of projects has been undergoing considerable change. Many practitioners are beginning to question whether the conceptualisation of projects for which mainstream project management tools, techniques, training and qualifications have been developed has ever reflected the actuality of managing projects [60]. The knowledge and practices covered by the project management bodies of knowledge represent only a relatively narrow part of what is needed to effectively to fulfill their roles. Many organisations are realising that effective management of projects in their organisations requires the development of practitioners beyond project managers and team members, extending to the development of practice throughout all levels of their organisations from team members to members of the board.

Specifically, the Network concluded [59] the real challenges of the field and thus the specific implications for practitioner development include the following:

- Application of project management to a range of project types with characteristics that differ from those for which project management practices were first developed (government funded defence/aerospace and construction).

- Extension beyond "execution-focused" project management to a whole-of-life concept of projects – from initiation, through operation to cancellation.
- Change of focus from product creation to value creation, from well-defined outputs to less tangible outcomes or benefits. Extension of the breadth of project management to include program and portfolio management in a broader conceptualisation of management of projects as a strategic corporate capability.
- Increasing actual and perceived complexity – for many reasons including changing societal values; increased stakeholder involvement and influence; more complex governance, ownership and delivery structures; and advances in communication technology that enable global and virtual working, and accelerate time pressures.
- Integration with rather than isolation of projects from the business.
- Aging of the workforce and the need for succession planning.

The following section of this paper will address the implications of these challenges for practitioner development.

4. Implications for practitioner development

4.1. Change in focus and breadth of application

While the range of endeavours recognised as projects has been broadening progressively over the last 30 years or 40 years, the extension of project responsibility beyond the traditional focus on execution has been a more recent trend. Both trends have significant implications for practitioner development.

First, the nature of the endeavours considered as projects has broadened considerably since the recognition and codification of project management practices used in defence and aerospace and large engineering and construction projects. This has led to questioning of the validity and sufficiency of these traditional project management practices for project types having significantly different characteristics [12]. Flowing from this is questioning of the relevance and sufficiency of the current curricula for practitioner development.

Second, wider application has increased the demand for capable practitioners and therefore the need for appropriate practitioner development. It has also changed the nature of project work. For instance, as organisations recognise more of their endeavours as projects they need many more people capable of undertaking roles that will lead to the delivery of desired corporate outcomes. Many of these people may be required to continue in operational roles while also assuming project related responsibilities. They are often also required to simultaneously manage multiple projects, often requiring contributions from cross divisional resources. Project boundaries are often ill-defined and shifting. This is quite different from the original concept of a project manager as having full-time, "undivided responsibility" for an entire project, for which the scope and governance would be clearly defined in a contract, from inception to completion [51]. Implications for practitioner development are a need to review the curricula for development and to provide development for a significantly increased number of people.

Further, the nature and number of roles for which project management development is required is increasing as a result of growth in the range of endeavours recognised as projects and the scope of project management. The traditional conceptualisation of project management responsibility is from initiation of the project to completion generally of a product or service which will be handed over to operations. Initiation of the project from an execution perspective generally involves the confirmation of the project definition and commencement of the plan for its delivery. Project responsibility often now starts with formulation of projects and programs to implement corporate strategy; portfolio decisions as to which projects to undertake; or working with a customer to identify needs, develop solutions then get approval for projects to deliver those solutions. As an example of this, a global telecommunications company now considers all this upfront activity to be part of the project management life cycle and requires it's Project and Program Managers to be actively involved with customers in establishing the deliverability of the project, rather than leaving this, as was previously the case, to be negotiated by an Account Manager. At the other end of the life cycle, concern now extends beyond the delivery of the products or services from a project, often referred to as *outputs*, to the realisation of the benefits from a project or program of projects often referred to as *outcomes*. This is a predominant theme of application of project management of internal projects such as IT and business change where the reaping of benefits is dependent upon successful handover to operations (and is recognised as such in methodologies such as PRINCE2). In such cases, the Project or Executive Sponsor [15,22] is often required to carry responsibility from genesis through to the realisation of benefits. Responsibility, however, extends even further in some cases, such as the defence sector, where the sustainability of the product, service or facility is also considered a project responsibility, and may also include its ultimate disposal.

One implication of these changes in application and conceptualisation, for practitioner development, is that those in project management roles are in many cases being required to develop a broader range of skills. Another implication is that the range of roles that have project responsibility is broadening. It is no longer just the responsibility of the project manager. There are new project roles emerging and being encompassed, such as that of the Program Manager, Portfolio Manager, and Project or Executive Sponsor. Those in functional and operational roles are increasingly being required to take part in projects in oversight, managerial and contributing capacities. As projects

and programs are increasingly recognised as ways of delivering strategy, senior management and members of the board are also required to understand more about the nature of projects and their management, especially in light of more onerous corporate governance requirements [4].

4.2. Increasing complexity

Modern project management, as it has developed over the last 50–60 years, and as codified in the project management bodies of knowledge, places emphasis on planning and control and is arguably designed for management of complicated projects. Projects may be considered complicated when their output is in the form of material artefacts such as the construction of physical infrastructure or the design and construction of aircraft. Models developed for such projects can simulate the interactions of their many parts and the impact of increased levels of differentiation and interdependency [5] with a high level of reliability.

Projects, such as those dealing with organisational change, are also subject to high levels of differentiation and interdependency, but additionally, they have non-tangible end products, cannot be isolated from their environment and are highly dependent for their success on the participation, reactions and interactions of people [12]. The impact of differentiation and interdependency is much harder to model and simulate in projects of this nature as they are highly subject to the influence and reactions of people with different agendas, values and responses [5,50].

Even projects of the type for which project management was initially developed, which may be considered inherently complicated rather than complex, are becoming more complex as their recognition and management as projects is extended beyond the execution phase to encompass a broader spectrum of the product life cycle. An engineering or construction project may be essentially well defined in the execution phase but becomes a more complex endeavour if the focus is extended to include its genesis, maintenance and disposal. The rise of Build-Own-Operate and Private Finance Initiative projects in construction has accelerated this paradigm change. This wider perspective also introduces a broader range of stakeholders and stakeholder perspectives.

The delivery of what might have been considered well defined but complicated projects also become more complex when new delivery mechanisms such as public private partnerships, strategic alliances and the like replace traditional contractual arrangements. Ownership is often far more complex than in the past and is frequently unstable or subject to change.

Increasing emphasis on corporate governance in recent times as evidenced by the OECD Principles of Corporate Governance [36] and the pervasive influence of the Sarbanes Oxley Act 2002 has placed emphasis on a need for increased transparency and accountability that raises levels of complexity and places new demands on project management practitioners.

Advances in communication technologies have increased the potential for complexity in a number of ways. They have placed more emphasis on stakeholder management in terms of client reporting demands, the potential speed and expectations of information flow and has increased likelihood of media exposure. The Project Manager may need to be a good politician with ability to deal with the media. Communication technology has facilitated far more complex ways of working, raising the expectation that project management practitioners will be expected to work in virtual global teams. This introduces a range of new skill requirements from use of communication technologies, to understanding and ability to work with people from different cultures (including professional and national) and in different languages.

A further level of complexity affecting projects and practitioner development is the change in societal values. The work ethic has changed considerably over the last thirty or so years. Different generations (Baby Boomers, Generations X and Y) display different work ethics which need to be considered in workforce planning and in the formation and management of project teams. Changing societal values also affect stakeholder management as there are increased demands for and expectations of involvement and participation. At the same time, communication and other technologies have made faster response possible and raised expectations, putting practitioners under accelerated time pressures to deliver. Economic rationalism, enabled by technology, has reduced the level of support for all activities throughout organisations, requiring practitioners to operate with reduced support against shorter timescales, with higher levels of accountability in the face of increasing demands.

Implications for practitioner development of this increase in complexity are considerable. First, it highlights a need for re-thinking of the project management bodies of knowledge and related qualifications. The expertise that underpins the development of project management practice and standards is founded primarily in the management of clearly recognised and defined stand-alone projects that may be considered complicated rather than complex. These practices were first transferred and minimally transformed by application to information systems and technology projects but they retain a strong and identifiable legacy from their origins in major engineering projects. Combined with a process of simplification, codification, and commodification [33] to support generic application and ease of transferability, the bodies of knowledge and practices used to support practitioner development provide little to address the ambiguity, complexity and uncertainty inherent in today's practice world [10,16,60]. They do not recognise or offer a response to the systemic and complex nature of business projects, including implementation of corporate strategy, change management, management of organisations by projects and enterprise innovation.

Faced with a more complex and demanding environment, employers are questioning the validity and usefulness

of the most commonly available project management training and qualifications to develop and assess the competence of practitioners. Although there remains an ongoing need for 'trained technicians' for well defined roles on well defined projects, employers are beginning to look for something more. They are beginning to focus more on behaviours or what are often referred to as "soft skills" in addition to or in some cases rather than hard technical skills and mastery of a relatively limited set of project management knowledge and practices. There is increasing interest in the behaviours that distinguish superior from threshold performance. Further, as project management roles become more complex and permeable, there is increasing recognition that the project management bodies of knowledge represent only one part of what is needed by project management practitioners to be effective and that there is a need for extension of development to include contextual, organisational, technical and general management knowledge and skills as well as those of generic and organisational-specific project management.

This depth and breadth of development is not something that can be accomplished in a two to five day course or assessed in a one-off multiple choice test. It requires a much longer term commitment and a far more multi-faceted and systemic approach. The need for relevant practitioner development goes beyond the development of trained technicians to that of reflective practitioners able to be effective in demanding, diverse and complex environments.

4.3. Aging of the workforce and the need for succession planning

This is a challenge affecting practitioner development generally. It is exacerbated by the drive towards economic rationalism, beginning in the late 1960's and early 1970s, to progressively transfer responsibility for practitioner development from the workplace into academic institutions. Prior to this, there was a general acceptance that the workplace had a responsibility for development of practitioners by imparting craft or tacit knowledge through demonstration, practice with feedback and possibly even coaching [17]. From the early 1970s onward, streamlining of workforce numbers placed increased pressure on workers. The level of practitioner development in the workplace was progressively reduced and academic institutions were pressed to take increased responsibility for work readiness. More than thirty years on, those who now, after many years of experience, have developed the tacit knowledge necessary for effective practice, have had no role model for transfer of this knowledge in the workplace. As these practitioners reach retirement age, many organisations are simultaneously recognizing the value of this lost art and the consequent loss of much of their intellectual capital.

This trend has several implications for practitioner development. The combination of increasing demand for project management personnel and impending loss of experienced staff (and tacit knowledge) has raised awareness amongst employers of the importance of practitioner development. Perceived inadequacy of training and of currently available assessment processes and qualifications to provide assurance of competence has rekindled interest in a wider range of development options, with particular emphasis on experience in the workplace. Whereas mentoring and coaching were at one time provided informally in the workplace, many organisations are now introducing formal mentoring and coaching opportunities. To address these challenges, project management development must be flexible, customisable and real world enough to meet the needs of this increasingly varied clientele.

5. Further issues in practitioner development

Current models of project management practitioner development continue to focus on transferring "know-what" based on the bodies of knowledge developed by the professional associations through programs delivered in traditional learning environments that emphasise instruction and training. To address the implications of changing conceptualisation and applications of project management to projects perceived to be increasingly complex, we need more emphasis on educational models that encompass a wider spectrum of "know-what" and facilitate development of "know-why" and "know-how" that will enable practitioners to select appropriate combinations of knowledge, practice and behaviours that will support and foster continuous change, creative and critical reflection, self-organised networking, virtual and cross-cultural communication, coping with uncertainty and various frames of reference, increasing self-knowledge and the ability to build and contribute to high performance teams [28].

As the Rethinking Project Management Network concluded, there is a need for less separation between learning and actual practice accompanied by less focus on knowledge acquisition and more emphasis on holistic capability development that extends beyond knowledge to encompass practical application and experience, attributes and behaviours. Learning and development is considered more effective when integrated with work and professional activity, encompassing diverse modes such as: work-based training, coaching, master classes, reflective practice, action learning, special interest groups, simulation, double loop learning and the like [7,25,29,55]. Learning should be viewed as a social process in which the individual is able to integrate their learning (i.e., possessed knowledge) with the development of the organisation and its practices given that individual development is a component of organisational development [47] {Wenger 1997 #8290} [27,52] and practitioner development is often expected to drive significant development in the organisation such as the general adoption of project modes of thinking for enterprise wide project management.

Another issue for practitioner development in project management is that it has to date focused on the common denominator, on development of threshold levels of

competence based primarily on a relatively narrow spectrum of possessed knowledge defined by codification of generic knowledge and practices is presented in the project management bodies of knowledge and standards. Many employers, having endeavoured to raise the level of threshold competence in project management in their organisations are now beginning to look for ways of recognizing and developing behaviours that are associated with superior performance [49]. This trend is associated with interest in moving beyond development and assessment that recognises the ability to follow process or adopt best practice to ways of measuring performance based on outcomes and the development of contextualised and situated responses.

To demonstrate the types of responses that are being made to the challenges facing practitioner development in project management, we provide two examples of initiatives of academic institutions.

6. Practical responses

6.1. Practitioner development through reflective practice

Research shows that experienced practitioners can make significant advances in developing their knowledge and capabilities through processes of reflective practice and experiential learning (see for example [17,18,31,46]. An example of this is the development of a reflective practice dissertation for an industry-based masters program in project and program management delivered by the University of Manchester [58,60]. Originally piloted on an Executive MBA program [57], the new dissertation is an alternative option to the classical research dissertation, which is not always appropriate for busy managers on part-time programs. In essence, the new dissertation is designed to exploit the significant learning and development opportunities available to people studying on part-time programs, by enabling experienced practitioners to develop their knowledge and capability through a period of more deliberate and more reflective engagement in professional practice. As Brown and Duguid [9] state "learning to be requires more than just information. It requires the ability to engage in the practice in question". Such opportunities are lost, however, if the only option available is the classical research dissertation. Also, the opportunity to engage more deliberately and more reflectively in one's own professional practice is highly relevant to professional development programs where the emphasis is essentially on preparing people for the realities of real-world practice than on academic research. This is not to suggest that the classical research dissertation should be marginalised, only that if the core purpose of a project management program is professional development, then this suggests the need for additional dissertation options to allow practitioners to learn and develop through processes of reflective practice and critical reflection. More generally, the concept accords with the increasing emphasis on facilitating reflective learning in higher education [8].

The practice dissertation (rather than a research dissertation), is rooted in Schön's epistemology of reflection-in-action [45], which provides a helpful perspective on what practitioners actually do in practicing their craft. According to Schön [45], practicing managers and other practitioners constantly have to deal with messy, indeterminate situations, for which there are no "right" answers, and how they deal with these situations is not through the systematic application of textbook theories, but through sophisticated processes of reflection-in-action (e.g., thinking on one's feet) and reflection-on-action (e.g., thinking back on events and planning the next move, etc.). From this perspective, reflection-in-action is much less a process of applying propositional knowledge and much more a process of appreciating, probing, modeling and experimenting etc using intuition and experience. Very importantly, the concept of "reflection" in Schön's work is much less a reference to practitioners standing back and learning from experience, and much more a reference to how practitioners actually think about the issues and situations in the messy, indeterminate zones of practice. In this sense, Schön's image of the reflective practitioner provides a helpful way of understanding what it is that (more reflective) managers and other practitioners actually do in practicing their craft. Like other new fields of study, however, there are (not surprisingly) different ideas about professional practice (see for example [17,18,31], and there is no assumption here that Schön's image is all-encompassing, only that it provides a helpful way of making sense of what practitioners actually do in practicing their craft, and (hence) an appropriate foundation upon which to develop a new kind of dissertation for part-time programs in project and program management.

In practical terms, the practice dissertation is operationalised through a cyclic process of learning and development involving four interrelated activities: (a) the student–practitioner's role and responsibilities, (b) the activity of reading literature around a number of relevant themes, (c) the activity of relating the literature to the practitioner's current work issues, and (d) the activity of modifying one's approach in the light of the reflective activity and the insights gained. The identification of "relevant themes" is a crucial part of the learning and development process, with typical themes being leadership, managing change, negotiation, conflict management, team development and the application of project management methods, to name but a few. Whatever themes are chosen, they are always specific to the practitioner's work issues and are generally identified by the practitioner in discussion with the rest of the group. This enables the student–practitioner to focus on a selection of relevant literature for use in examining the context, content and process aspects of their professional role, thus enabling the learning process to be student-driven and directly centred on the interests and needs of the people involved. Also, as part of the process, the student–practitioner is strongly advised to keep a learn-

ing journal of the key events, issues and reflections "along the way", in a format which is decided by the person doing the dissertation. Moreover, the role of the academic supervisor in supervising this dissertation changes from that of supervising a research project to that of facilitating a learning process involving the critical examination of real-world experience, relevant theory, and ongoing interaction. The role of the student also becomes one of thinking and theorizing about the realities of managing rather than the theory of management. Both the student and the supervisor are encouraged to explore how and why theories work (or do not work) in a particular context and to learn from each other's perspectives on the situations and theories, in order to broaden and complexify their understandings of the problems being tackled. As Fish and Coles [18] state:

> because practice is rapidly changing, it requires the practitioner autonomously to be able to refine and update his or her practice 'on the hoof', which is what reflective practice is about (and what professional development should be about) ... Here, to improve practice is to treat it more holistically, to work to understand its complexities, and to look carefully at one's actions and theories as one works and, subsequently, to challenge them with ideas from other perspectives [for example, from the literature], and to seek to improve and refine practice and its underlying theory. Here, the professional is working towards increased competence ... not towards acquired competencies.

Interestingly, in fields such as teaching and nursing, practitioners engage in this kind of activity as a matter of course in that they focus directly on the practices of teaching and nursing as part of their own professional development.

The educational aim of the practice dissertation is no different in project management: it is simply one of helping experienced practitioners to become more reflective and more effective in the art and craft of managing projects. Moreover, the experiences to date suggest there is significant potential in this new dissertation and research is now ongoing to develop it further.

6.2. Practical responses: Developing senior project managers at a distance

Critical management pedagogy (see for example [8,44]) puts heavy weight on the necessity to change the pedagogical approach from information pushing to critical interchange and from teacher or student centred to de-centred, and to focus on the interchange and sharing of experience and view points through critical reflection and sensemaking. One of the key characteristics of (and some would say benefits) of this form of teaching is that it is ideally suited to experienced mid career professionals wishing to capitalise on and extend their experience through a period of critical examination. The practice dissertation described above is a clear example of embedding this sort of philosophy in one aspect of a project management academic programme.

Our second example begins in early 2000 with the decision by a leading distance University to develop a specialised Executive MBA in Project Management aimed at developing the skills of senior project management personnel. The new programme was envisioned to build from the first year of the existing, highly rated Executive MBA programme and then add one year of specialised course work in project management followed by three electives and a final applied research project. Students would be drawn from a wide range of industries and job roles but all would have a minimum of 5 years of experience in a project environment as well as the 8–10 years on average of general management experiences required of all our MBA students in the programme.

Three primary drivers motivated the development of this new programme. First, experience with a traditional face to face Management programme had highlighted the difficulty mid career managers have fulfilling the requirements of this form of education while maintaining their full-time work and family commitments. Second, surveying the existing MBA or Masters programmes in project management revealed that most programmes were very similar and followed closely the structure of the PMBOK® Guide defined by the Project Management Institute (PMI, 1996, 2000, 2004). In essence existing Masters-level education in project management is often pitched at the same level as the certificate and commercial training in project management. Third, research into project management failures suggested that one of the key skills missing in many project managers was a solid foundation in basic management skills (for example marketing, finance, organisation theory). Yet few if any project management programmes addressed these topics and likewise few if any MBA programmes provided in-depth coverage of project management. The decision was made to differentiate the new programme by focusing on developing "master" project managers capable of critiquing and revising "best practice". and questioning the taken-for-granted assumptions that are considered doctrine in the area of project management. It was felt that the growing number of certified project managers would be a prime source of students for the new programme as these practitioners sought to advance their project management skills.

The existing MBA programme, delivered in a paced asynchronous distance environment, is, designed to provide a convenient educational environment to combine learning from professional experience with academic learning and critical reflection and review. Based on principles of critical management pedagogy (see for example [44]) and management skills development so strongly recommended for MBA reform [30] the programme puts heavy weight on the necessity to change the pedagogical approach from information pushing to critical interchange and sharing of experience and view points.

Distance education has made great strides over this decade in gaining acceptance as an alternative delivery option within graduate education. Numerous studies over the last decade have shown that, regardless of discipline, there is no significant difference in the learning outcomes of distance versus classroom students in graduate programmes ([21,26,34,35,40,56,61]); and that there are no significant differences in student satisfaction [2,6,39] or participation rates [1,3] between the two settings. Nevertheless, intellectual quality of online graduate programmes is still questioned in many educational arenas. In particular, many educators still do not credit that interpersonal relationships between students and faculty can be developed effectively through technology (see for example [24]). However both internal measures of student and employer satisfaction and external rankings (the Executive MBA programme described here was ranked in the top 75 MBA programmes in the world by the Financial Times in 2003 and 2004) support the value of distance learning as a way of addressing the challenges raised above in educating mid career project managers within the context of organisational learning and development.

In building an environment for shared learning and critical reflection, three key decisions had to be made. First, there had to be some way to ensure a base level of understanding of key concepts from which to explore theoretical and experiential insights. Thus, the first major decision with respect to the design of the programme was to require all incoming students to provide evidence of knowledge of the fundamentals of project management to the certificate level. Next, to ensure that the complex reality of projects was not simplified by focusing on one aspect of project management at a time, the second important decision was to design a four-course core that dealt with the topics of project management in an integrated fashion across the life cycle. This approach made it possible, for instance, to deal more rigorously with issues of paradox inherent in controlling the project while trying to maintain team spirit and drive during execution. Finally, given the need to avoid a focus on one right way to manage projects, the third major design decision was to share a "library" of four texts that would be referred to across all the courses and supplemented by numerous research and practical readings. The texts were consciously chosen to provide different viewpoints on project management. The explicit contrasting of these different texts was meant to broaden the student's conception of what project management is and trigger sensemaking around how and why these different perspectives exist.

Each course is designed to introduce current research, theory and practice, encourage reflecting on current situations facing students in light of this material, and then sharing and reflection on these experiences. Each student completes a weekly assignment and then engages in critique and exploration with other members of the class and the faculty member to flesh out the issue. Students are encouraged to participate regularly (if they do not pass participation, they fail the course) and to be respectful but frank and critical of ideas, situations, and theories. The faculty member acts as a coach/participant modeling questioning and critical reflection by seeding questions particularly around underlying assumptions, and avoiding being forced into the "expert" role as much as possible. Students are assessed as much for raising good questions and issues as for sharing theoretical or experiential insights. Each weekly "discussion" ends with a lessons learned discussion that provides synthesis and closure to the week's discussion at the same time that it raises additional issues for reflection.

Removing boundaries between subject areas allows us to deal with the whole project process while presenting multiple perspectives approach through varied texts and readings. This process of complication instead of simplification allows for the development of critical reflection on practice realities. The technology required by the distance format, facilitates the de-centreing of the power roles in the classroom by separating the coach from the expert lecture role and providing a focus on learning from all discussion participants. Students and coaches explicitly recognise that they are to learn together. The asynchronous online delivery provides for deep and thoughtful reflections on the issues under discussion. Further, teaching mid career students over a period of time allows them to develop meaningful espoused theories of practice that can be tested in their real world laboratories in real time as the course progresses. The explicit adoption of a sensemaking approach moves the discussion from that of formulaic management "best practices" to a messy and complicated discussion of managing.

To date the programme has been successful in meeting the needs of senior project managers and executives from around the world. Connecting project managers of major Oil and Gas development projects in Kazakhstan with Nurse managers overseeing the implementation of whole medical systems in the middle east with foreign aid project managers in Africa and high tech innovators in the US with resin executives managing mergers and acquisitions in Canada has resulted in deep rich discussions capable of delivering insights into the common practice of project management and the contextualise micro parties needed in local environments. The largest challenge facing the programme to date has been in helping certified project managers recognise that their certification is a first step towards master practice not an end. Now that professional associations such as PMI are beginning to recognise and develop plans to deal with the lack of development programmes for the certified practitioners this is likely to change.

If you look at the development of practitioners of recognised professions, in addition to the advanced educational foundation requirements, they have all served some sort of an "apprenticeship" or "internship" where they learn from experienced practitioners and their peers over an extended period of time. Interestingly, one of the senior practitioners enrolled in this programme recently made the following

comment. "This programme is the closest thing I can imagine to a mentored apprenticeship programme for project managers". If you look carefully at each of these three practitioner development examples, you will see that each of them provides evidence of attempts to reproduce this practice based learning, assessment, reflection and refinement of practice.

7. Conclusion

Rethinking Project Management highlighted a number of characteristics of current project management practice and environment that deviates from the assumptions embedded in many conceptions of the discipline today. The characteristics of:

change in focus and breadth of application,
increasing complexity,
aging of the workforce and the need for succession planning,
changing workforce conditions,
concern for organisational learning and integration of work with learning;
influence not only how we think about project management but also our options for developing future project managers.

We have discussed above the implications of these characteristics and have provided examples. Let us just stress that much of the existing project management education is aimed at transferring foundation level knowledge of various professional association bodies of knowledge. These technical tool kits have proven insufficient for the reality of managing complicated projects and are unlikely to be adequate for managing the complex projects that are ever more common in today's organisations. Focusing education at this level, with delivery in the form of short courses by professional trainers who lack significant, real-time project experience, is a trap that needs to be addressed as we rethink project management.

Not only do we need new and better ways to think about projects and their management but we need different ways to transfer knowledge and develop project manager competencies that fit with these new realities and that can be embedded within the individual's personal and organisational experience. Project management education must be able to teach project managers how to be reflective practitioners in touch with the best and newest theory and research, and their day to day practice of managing. This requires a coaching approach over a longer term aimed at developing, in the workplace, managers capable of thinking critically about their own project management practice and anything presented to them as "best practice". Competent project managers need to be able to apply technical project management tools contextualised for their specific project in a manner appropriate to the organisation and project type. Research and pedagogy is needed to

define these categorisations and more importantly how to think about the differences in project management practice necessitated by these differences.

We have provided examples of project management development designed to address some or all of these challenges. All of these programmes carefully balance the push of theories and techniques with the constructive critique of these knowledge areas based in practical experience. By recognizing that practice is a valuable source of knowledge about how to manage projects, each of these programmes takes some important steps to developing reflective practitioners through a decentred educational experience that is based in the particular and specific needs of the participants jointly and as a whole.

There are many challenges inherent in recognizing these new approaches as fundamental to project management in the future, not least of which is convincing certified project managers that they have only begun the journey towards project management expertise. In addition, professional associations will need to devise flexible ways to update their BOKs as practice evolves into, and later no doubt away from these new realities (as discussed in the article by Morris et al. [32] in this volume) and to monitor and coach the education providers to this new perspective. Organisations will need to recognise the investment necessary to develop expert project managers as a cost of doing business.

From a research agenda perspective this review highlights a number of potentially important research initiatives that are needed to support the types of practitioner development initiatives discussed above. First, there is no empirical evidence that project management training of any sort (tactical or reflective) actually improves a practitioner's capacity to manage projects. Research of this nature exploring what practitioners can get from training vs other development practices is long overdue. Second, given the demographic changes facing organisations today and discussed above, those interested in developing practitioners need to give some thought to how to do this appropriately for the different generations of workers we have today. In particular, how is tacit project management knowledge best developed and transferred and how can we leverage the "greybeards" before we lose them. Cultural research into how to develop a climate and reward system encouraging passing on instead of hoarding of knowledge would also be of benefit. Third, an important foundation for the development of practitioners is the development of a categorisation system for projects or project management roles that would allow training to be appropriately targeted and delivered to relevant audiences.

Finally, and perhaps most fundamentally of all, in order to develop appropriate training and development programmes, we must first have a solid understanding of what the underlying knowledge base must contain. Given the criticism of the BOKs and the conceptualisation of projects and project management in other chapters in this volume, the increasing perception of complexity of projects and breadth of application of project management practises,

it is almost criminal to propogate a "best practises" or "one best way" approach to project management training when there is no empirical or theoretical foundation for these assertions.

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