Project Management Education: Have we got it right?

Dr K.A O'Shea
QTC Consulting Pty Ltd, Perth, WA, Australia

ABSTRACT

Acceptance and understanding of project management tends to be limited by project managers (PMs) who have a specific technical training and follow one or two major theories on project processes. Consequently, project managers may encounter difficulty in being 'recognised' by employers as being flexible and therefore able to be deployed across corporations assets.

It has been argued that there is no agreed recognisable standard across industry sectors or has it emerged as such, as to assess project management practices and without a recognised standard, it is difficult for employers to make a judgment as to the capabilities of project managers.

It is in the interest of the project management community in general to determine whether the project management knowledge base provides sufficient flexibility for them to transfer from one business unit in a corporation to another or in fact from one industry sector to another. At the general overall level, project management knowledge appears to be generic enough to facilitate cross industry application.

Qualifications for PMs do make a difference! In addition to demonstrating the importance of PM qualifications to augment PM's successful transfer across disciplines, further research is suggested regarding the need for training to be 'compulsory'.

In practice, for program/project managers and senior management, the merit of a project manager's technical knowledge versus the merits of possessing general management skills is a constant dilemma and continuing point of discussion.

Key words: Project Management Education, Project Management Knowledge, Knowledge Transfer and Flexibility.

Introduction

As projects are a part of many organisations (Blomquist & Müller 2006, p.52; Koskinen 2004, p.18; Mullaly 2006, p.72) and project management is increasing in type, range and popularity (Shenhar & Dvir 2007, p.93), this paper seeks to examine the 'path' that project management is taking in relation to PM accreditation and education, enabling its practitioners to be 'flexible' in the application of their management knowledge across disciplines

In searching for a central theme or paradigm to truly conceptualise project management, it would appear that no such paradigm exists (Shenhar & Dvir 2007, p.95). Without this foundation, it is difficult for project managers to ensure they are gaining/acquiring the optimum knowledge base to equip them in their future endeavours in the management of projects. As a 'part-time' university lecturer, the author is cognisant of the fact that project management appears to be taught predominantly in engineering and construction faculties and, therefore, currently there exists a tendency to focus on its mechanics; i.e., the processes, tools and techniques of the discipline. However, there is a growing awareness that project management is suitable and, arguably, preferable to be taught in schools of management and business.

Arguably, some projects require a greater level of technical ability or 'know how'. McCreery (2003, p.233) and Whitten (2005, p.98) discuss the merits or otherwise of a project manager possessing sufficient technical knowledge and whether the project manager who is not deemed sufficiently technical will be working with a disadvantage. Zwikael and Globerson (2004, p.1546) argue that "only a proper mix of project manager's know-how and organizational support will improve the quality of planning and project results"; this suggests their belief that 'know-how' is important when selecting a project manager. Whitten (2005, p.98) considers "the project manager who is not sufficiently technical in his or her chosen industry will be working with a handicap".

Mullaly (2006, p.23) argues that "no recognisable standard has emerged to assess project management practices", and without a recognised standard it is difficult for employers to make a judgment as to the capabilities of project managers.

The project management literature is ambiguous as to the technical knowledge requirements for project managers. Whitten (2005, p.101) suggests a preference for strong project management skills over strong technical skills; "as a general rule, it is far better for the project manager to be strong in project management skills and weak technically than to be strong technically and

weak in project management skills". This is a view supported by the Tasmanian Government (2006) when discussing its guidelines for the selection of a project manager. In relation to this paper, the arguments appear to highlight the fundamental dilemma for PMs between having strong technical ability or strong project management skills.

Thus, it is of interest for project managers to determine whether the project management knowledge base is flexible enough for them to transfer from one discipline to another; "at the overall level project management knowledge appears to be generic across industry sectors" (Crawford & Pollack 2007, p.93).

PRINCE2 (**PR**ojects **IN C**ontrolled **E**nvironments) is a structured method using a system of processes and templates for effective project management across different industry sectors. It is used extensively by the UK Government, private sector and increasingly internationally.

Arguably, project management is about managing, and even leading, people; a view supported by Prabhakar (2005, p.53), Morris, Jamieson and Shepard (2006, p.471) and Brown (2006, p.2). Consequently, project management is not about making technical decisions. If you have a high risk project, it's sensible to have a technical project manager/project coordinator to work hand-in-hand with the project manager. But once technical project managers start undertaking project management, it may be argued, it becomes increasingly difficult for the great majority of them to remain technically focused. As a result, it may be that a non-technical but experienced manager trained in project management is the preferred option to manage a project.

Knowledge Transfer

In their research into the influence knowledge management has on project success, Horner, Reich and Wee (2006, p.11) suggest "results show that the PMBOK® Guide has a strong bias toward explicit and declarative (i.e., "how") knowledge, and pays less attention to tacit and causal (i.e., "why") knowledge". The PMBOK® is a publication by the Project Management Institute (USA) 'A Guide to the Project Management Body of Knowledge'; arguably, this is adopted as a de-facto world standard in PM.

The role project managers play in the acquisition and application of knowledge is outlined in the belief of Anderson (2006, p.22) that "the role of the project manager is to facilitate this blending of knowledge, e.g., by establishing and opening up arenas and creating channels for information and knowledge sharing".

The concept that project management is a knowledge-based discipline and that tacit knowledge is a significant source of the acquisition of this knowledge is discussed by Jugdev (2004, p.23) who suggests that "intangible assets seem to be undervalued in project management, yet they potentially play a crucial role in project management as it is a knowledge based discipline, and tacit knowledge and social capital are significant sources of knowledge exchange". The area of tacit knowledge is of particular interest as it is relevant and yet difficult to quantify (Horner Reich & Yong Wee 2006, p.18; Koskinen 2004, p.13).

Bresman, Birkinshaw and Nobel (1999, p.443) found that "the transfer of tacit knowledge was more difficult to accomplish than the transfer of more articulated knowledge". Thus, this paper considers the Morris et al. (2006, p.10) assertion that "project management … is as much about craft knowledge as codified knowledge – tacit as explicit".

Cohen and Levinthal (1990, p.133) discuss areas such as problem-solving skills, contextual knowledge and complementary expertise. In the current study, these topics are considered to suggest that, over time, project managers (particularly those working in project management consulting firms) will develop the ability, as a result of a broad range of experiences, to apply their stored knowledge and concepts to different scenarios. Delisle and Olson (2004, p.331) suggest that "a shared ontology may indeed be the key to reusing knowledge and reducing the need to 'reinvent the wheel' in managing projects".

Knowledge Management

Snider and Nissen (2003, p.5) state their belief about knowledge management and project management and how the current BOKs (Bodies of Knowledge) do not address the management of knowledge adequately. They claim the reason is that "because project management BOK are generally silent on … details, they are apparently incomplete in potentially significant ways". The suggestion is that a greater focus is required on knowledge and knowledge management in particular, in the BOKs utilised by PMs. Other researchers concur with the view that there appears to be a dearth of empirical studies with a focus on project management knowledge (Jugdev, Mathur & Shing Fung 2007, p.561).

van Donk and Riezebos (2005, p.82) argue that "literature shows that for the core activities in project-based organisations three types of knowledge have to be distinguished: entrepreneurial, technical and project management knowledge". Does this mean that project managers limited to one or two areas of knowledge would be less flexible?

Methodology

The research sequence began with the development of a focus group to assist in the first stage of exploratory research. The focus group interview, described by Zikmund (1997, p. 109) as "an unstructured, free-flowing interview with a small group of people" was used to develop a preliminary diagnosis of the topic of this paper. The group consisted of ten PMs who were in the process of undertaking assessment in the Australian Institute of Project Management's (AIPM) program for PM professional recognition. As they were practicing PMs and were required to gather evidence on the role as part of their assessment, they were 'open' to participation.

The group focussed on available PM concepts and considered the possibility and relevance of a questionnaire consisting of a 'blend' of what constitutes the two pre-eminent knowledge bases in project management; namely, those bases propertied by The Project Management Institute (USA) and the Office of Government Commerce (UK). It was considered by the group to be of value to 'blend' the knowledge bases, as they are both project management focussed, but with differing perspectives.

In his paper comparing PRINCE2 with PMBOK®, Wideman (2002) discusses the view that one (*viz*., PMBOK®) is viewed from the project owners' perspective and the other (*viz*., PRINCE2) assumes that the project is being managed by the supplier. Therefore, it appeared logical to examine whether or not the two could be combined, at least at a basic level. Not only was the concept behind the blending to seek to ascertain the broad range of knowledge areas being utilised by project managers but, as well, to encourage the focus group to consider the fundamental question of 'transferability' of PM knowledge.

The Table below, is extracted from a conference paper by Siegelaub (2004, p.2) who discusses the strengths of the PRINCE2 methodology and how it complements the PMBOK® Guide, and the possible benefits to be derived by the combination of the two practices.

PMBOK® and PRINCE2

PMBOK® Knowledge Areas	**PRINCE 2** Comparable Components
Integration	Combined processes and components of change control
Scope, Time, Cost	Plans and Business Case
Quality	Quality, Configuration Management
Risk	Risk
Communications	Controls
Human Resources	Organisation (Limited)
Procurement	Not covered

Source: Adapted from Siegelaub (2004, p.2)

Furthermore, Siegelaub (2004, P.7) recommends the integration of the two practices; "Get to know PRINCE2 and consider using it as the core of your company's project management approach – perhaps along the lines of PMBOK® Guide and PRINCE2 – together".

A research questionnaire was completed and returned by 61 respondents within Western Australia. The fact that respondents represented a broad range of industry sectors, qualifications and value of projects managed; gave this author confidence that the results are not idiosyncratic or unrepresentative of Western Australian project managers in general. Each respondent completed all parts of the survey with no omissions or errors.

Age of Project Managers

The Table below, demonstrates the age range of the respondents participating in the research; the youngest was 29 years and the oldest 64 years with the largest percentage of respondents (65.6%) indicated in the 40-54 years of age. This corresponds with the researcher's discussions within project management professional 'circles' regarding the increasing age of practising project managers. Because PMs have originated from a particular trade, profession or discipline, it is this author's opinion that, during the ages of 20-29 years, future project managers are acquiring their basic education, qualifications and experience in various sectors. Subsequent to a successful career in a particular discipline, individuals gain an interest in, or are directed towards, project management. Arguably, as can be seen in the table below, it is the early 30s when people begin to actively practice project management.

Age Distribution in Research

Range	Frequency	Percentage	Cumulative %
Under 30	1	1.6	1.6
30 - 34	4	6.6	8.2
35 - 39	7	11.5	19.7
40 - 44	13	21.3	41
45 - 49	14	23	64
50 - 54	13	21.3	85.3
55 – 59	7	11.5	96.8
60 +	2	3.2	100

Gender

The gender of participants can be seen in the following Table. With the total of 61 participants comprised of seven females and fifty four males, the bias of males to females is evident; a typical point of discussion at 'gatherings' of PMs. Again, the point is brought to the reader's attention not only as a matter of possible interest, but as an issue within PM and its component disciplines.

Gender Participation in Research

	Frequency	Percent	Cumulative %
Female	7	11.5	11.5
Male	54	88.5	100
Total	61	100.0	

Formal Educational Qualifications in PM

The distribution of the participants in respect to whether or not they had formal PM training and qualifications is demonstrated in the following Table. The term 'formal' has been interpreted as the participants undertaking tertiary or similar education and training courses. It is worthy of note, that not one respondent indicated having undertaken an undergraduate degree in project management! In this author's opinion, this is due to the lack of PM undergraduate degrees which has occurred as a result of project management being a discipline that becomes attractive to individuals only after they have gained experience, education and qualifications in an initial discipline or profession

It is evident that 26 PMs (42.6% of participants) had either no PM or only informal PM qualifications; this is a major issue for potential employers and professional accreditation organisations and one that would be unacceptable in most professions. The Diploma and Advanced Diploma, relate to the levels 5 and 6 of the Australian Standards Framework (ASF) and are aligned to the Australian Qualifications Framework (AQF); and, further, to the AIPM's Registered Project Manager program. These awards are obtained from either the professional body in Australia (AIPM) and or via undertaking short-course study at either private Registered Training Organisations (RTOs) or TAFE Colleges.

PM Qualifications

	Frequency	Percent	Cumulative %
None	16	26.2	26.2
Informal	10	16.4	42.6
Diploma	18	29.5	72.1
Advanced Diploma	11	18	90.2
Masters Degree	6	9.8	100.0
Total	61	100.0	

The results regarding qualifications demonstrate the increased importance of the table above, in the light of the figures, e.g., no/informal qualifications indicated by 42.6% of the respondents. It is argued that they are not acceptable in project management practice. Similarly, the standing of project management as a 'profession' will remain contentious while limited PM training is accepted.

Conclusion

As it appears there is no agreed recognisable standard across industry sectors (the author acknowledges that work is currently being undertaken to establish an international standard) to assess project management practices, without such a standard, it is difficult for employers to make a judgment as to the capabilities of project managers.

It is in the interest of the project management community to establish whether project management knowledge appears to be generic enough to facilitate cross industry application.

In addition to demonstrating the importance of PM qualifications, further research is suggested regarding the need for training to be 'compulsory'.

REFERENCES

Andersen, S, Erling 2006, 'Toward a Project Management Theory for Renewal Projects', *Project Management Journal,* vol. 37, no. 4, pp. 15-30. Retrieved 31/1/07, from ProQuest database.

Blomquist, T & Müller, R 2006, 'Practices, Roles, and Responsibilities of Middle Managers in Program and Portfolio Management', *Project Management Journal,* vol. 37, no. 1, pp. 52 - 66. Retrieved 5/1/07, from ProQuest 5000 International database.

Bresman, H, Birkinshaw, J & Nobel, R 1999, 'Knowledge Transfer in International Acquisitions', *Journal of International Business Studies,* vol. 30, no. 3, pp. 439-62. Retrieved 6 Oct, 2006, from JSTOR database.

Brown, W, A., Adams, D, J. & Amjad, A, A 2006, 'The relationship between human capital and time performance in project management: A path analysis.', *International Journal of Project Management*, pp. 1-13. Retrieved 17/11/06, from ELSEVIER database.

Cohen, M, Wesley. & Levinthal, A, Daniel. 1990, 'Absorptive Capacity: A New Perspective on Learning and Innovation', *Administrative Science Quarterly,* vol. 35, no. 1, pp. 128-52. Retrieved 10 Oct 2006, from JSTOR database.

Crawford, L & Pollack, J 2007, 'How Generic Are Project Management Knowledge And Practice', *Project Management Journal,* vol. 38, no. 1, pp. 87-96.

Delisle, C, L. & Olson, D 2004, 'Would the real project management language please stand up?', *International Journal of Project Management*, no. 22, pp. 327-37. Retrieved 17/11/06, from ELSEVIER database.

Horner Reich, B & Yong Wee, S 2006, 'Searching for Knowledge in the PMBoK® Guide', *Project Management Journal,* vol. 37, no. 2, pp. 11-26. Retrieved 31/1/07, from ProQuest database.

Jugdev, K 2004, 'Through the Looking Glass; Examining Theory Development in Project Management with the Resource-Based View Lens', *Project Management Journal,* vol. 35, no. 3, pp. 15-26. Retrieved 5/1/07, from ProQuest 5000 International database.

Koskinen, U, Kaj 2004, 'Knowledge Management to Improve Project Communication and Implementation', *Project Management Journal,* vol. 35, no. 2. Retrieved 5/1/07, from ProQuest 5000 database.

McCreery, J, K 2003, 'Assessing the value of a project management simulation training exercise', *International Journal of Project Management*, no. 21, pp. 233-42. Retrieved 17/11/06, from ELSEVIER database.

Morris, P, et al 2006, 'Exploring the role of formal bodies of knowledge in defining a profession - The case of project management', *International Journal of Project Management*. Retrieved 17/11/2006, from www.sciencedirect.com database.

Morris, P, Jamieson, A & Shepherd Miles, M 2006, 'Research updating the APM Body of Knowledge 4th edition', *International Journal of Project Management*, no. 24, pp. 461-73. Retrieved 17/11/06, from ELSEVIER database.

Mullaly, M 2006, 'Longitudinal Analysis of Project Management Maturity', *Project Management Journal,* vol. 37, no. 3, pp. 62 - 73. Retrieved 5/1/07, from ProQuest 5000 International database.

Prabhakar, P, Guru 2005, 'Switch Leadership in Projects - An Empirical Study Reflecting the Importance of Transformational Leadership on Project Success Across Twenty-Eight Nations', *Project Management Journal,* vol. 36, no. 4. Retrieved 5/1/07, from ProQuest 5000 International database.

Shenhar, J, Aaron. & Dvir, D 2007, 'Project Management Research - The Challenge and Opportunity', *Project Management Journal,* vol. 38, no. 2, pp. 93-9.

Siegelaub, J, M 2004, 'How PRINCE2 can compliment PMBoK Guide and your PMP', in *PMI Global Congress*, Anaheim, California.

Snider, F, Keith. & Nissen, E 2003, 'Beyond the body of knowledge: A knowledge-flow approach to project management theory and practice', *Project Management Journal,* vol. 34, no. 2, pp. 4-12. Retrieved 31/1/07, from ProQuest database.

Tasmanian Government 2006, *Project Management Guidelines - Section 3: Governance*. Retrieved 23 March, from http://www.projectmanagement.tas.gov.au/guidlines/pm5_3.htm

van Donk, D, Pieter. & Riezebos, J 2005, 'Exploring the knowledge inventory in project-based organisations: a case study', *International Journal of Project Management*, no. 23, pp. 75-83. Retrieved 17/11/06, from ELSEVIER database.

Whitten, N 2005, *Neal Whitten's No-Nonsense Advise for Successful Projects*, Management Concepts Inc, Vienna.

Wideman, M 2002, 'Comparing PRINCE2 with PMBoK'. AEW Services, Research Paper.

Zikmund, G 1997, *Business Research Methods,* 5th edn, The Dryden Press, Harcourt Brace College Publishers, Orlando.

Zwikael, O & Globerson, S 2004, 'Evaluating the quality of project planning: a model and field results', *International Journal of Production Research,* vol. 42, no. 8, pp. 1545-56.