

High impact training: Achieving synergies between program management education and workplace practice.

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ABSTRACT

This paper addresses the challenges of transfer of training back to the workplace for programme and project managers who are being groomed for the leadership of large and complex projects. The paper draws on the experience of the development and delivery of Queensland University of Technology (QUT) education programs: an Executive Masters of Complex Project Management and a series of Continuing Professional Development (CPD) events for an Australian government agency, Defence Materiel Organisation (DMO). Drawing on notions of 'far transfer' (Laker 1990; Noe, 1986) and 'transfer climate' (Kozlowski & Salas, 1993; Yamnill & McLean, 2001), the paper describes the steps undertaken to achieve a design that ensures that programme and project leadership skills developed through these corporate education programs become successfully embedded back in the organisation.

Further, the paper reports on a small qualitative study where the programme success was evaluated by the organisational sponsor, senior leaders and program participants. Nine interviews were conducted and analysed to identify the success of *far transfer* and *transfer climate* four months after the return of program participants from cohort 1 2008 to the workplace.

Introduction

It is now common for organisations to acknowledge that competitive success is achieved through its people (Pfeffer, 1998) with US estimates of at least US\$200 billion dollars spent on training and development (Bunch, 2007) each year to fit staff for their increasingly challenging roles. The public sector, while generally slower than the private sector to take up the language of business outcomes and the concerns of performance measurement and management associated with it, has been slowly focussing attention on efficiency and effectiveness (Hoque & Moll, 2001, 304). Recently, the Australian public sector, like the public sector in the UK, has increasingly looked to embed good business practices into its decision-making processes in defence and the recent Defence White Paper (2009) made it very clear that attention to efficiency, productivity and accountability are now high on the Australian Government's agenda:

'Defence must become a cost-conscious enterprise in which leaders and managers at every level understand and act on the need to free up the maximum amount of funding for reinvestment in current and future capability. To achieve this, the next wave of reform must be planned, led and managed on a whole-of-enterprise basis. Defence leaders at every level must be clear about, and held to account for, their specific contribution to the success of reform and ultimately the organisation as a whole' (p.107).

Times of financial pressure, like our current world financial situation, heighten the challenge of doing more with less, and training budgets for organisations are increasingly coming under scrutiny. Trainers and educators need to be able to demonstrate that the return on investment is worth the costs of training and development, or we risk losing jobs or contracts (Kirkpatrick, 1996). This issue of the value of university programs of learning has been a hot topic ever since Mintzberg's 2004 critique of MBA programs started a flurry of angst about the role and appropriate direction of business education (See Kuchinke, 2007 for an overview of the critique).

This critical reflection by educators and HRD professionals and researchers alike has led the authors of this paper to reflect on the challenges of achieving synergies between programme management education and workplace practice, and the ways in which university educators can contribute to both individual and organisational success. Our practical solution was to establish a close partnership in all phases of development and delivery of education for a corporate partner and a sustainment of the learning focus with transition back to the workplace. This need to reflect carefully on the delivery of education programs is also emphasised as HRD researchers and practitioners continue to question the relationship between training and education and business outcomes (Noe, 1986; Laker, 1990; Baldwin & Ford, 1988; Tannenbaum, 1992; Yamnill & McLean, 2001; Egan, Yang, & Bartlett, 2004; Holton, 1996; Holton, 2005; Bunch, 2007; Egan, 2008).

This paper addresses the challenges of transfer of learning back to the workplace of graduates of a twelve month full time immersion education program for programme and project managers. The participants have been identified for their high potential for the leadership team of large and complex projects. The paper draws on the experience of the development and delivery of Queensland University of Technology (QUT) education programs:

- an Executive Masters of Complex Project Management (EMCPM)
- a series of Continuing Professional Development (CPD) events
- an applied research project, successfully funded by the Australian Research Council for 2009-2011 on project performance and project manager performance, including tracking graduates of the EMCPM.

Using a collaborative corporate education model for learning, the curriculum development was shaped by a set of competencies for complex project management (Commonwealth of Australia, 2006) developed jointly by: an international group of leading senior international industry practitioners; and the client - a government agency, Defence Materiel Organisation (DMO) Australia.

The paper analyses the pedagogical principles and design of the program to demonstrate the key qualities that QUT set out to achieve. Drawing on notions of 'far transfer' (Laker 1990; Noe, 1986) or transfer where new knowledge is abstracted and applied to new situations and 'transfer climate' (Kozlowski & Salas, 1993; Yamnill & McLean, 2001) as part of a broader 'training transfer system' of influences (Holton, Bates and Ruona, 2000), the paper describes the steps undertaken to ensure high quality outputs. Firstly, the paper briefly describes the design that ensures that programme and project leadership skills developed in the corporate education award program become successfully embedded back in the organisation. In particular, the analysis focuses on the inclusion of workplace projects and personal development and coaching as non-traditional strategies for developing the leadership skills of identified 'high potential' project and program managers, and on approaches to

authentic assessment, including the task, physical context, social context, sharing of learning and criteria of judgement (Gulikers, Bastiaens, & Kirschner, 2004).

Further, the paper reports on a small qualitative study where the program success was evaluated by the organisational sponsor, senior leaders and program graduates. Nine interviews were conducted and analysed to identify the success of *far transfer* and *transfer climate* following Year 1 of the program, four months after the graduates return to their workplace. The paper reports the pilot study of the experience of graduates and their supervisors. This analysis will be organised by detailing the 5 phases of the strategic partnership between DMO and QUT: conceptualisation of organisational need, participant selection, curriculum design, program delivery, and organisational reintegration and engagement.

Background

In 2005, Defence Materiel Organisation (DMO), Commonwealth of Australia, identified an urgent need for improvement in the delivery of its complex, high priority, often long term and multi-billion dollar projects. With their reliance on the limited capacity of an aging workforce to service these requirements and the looming reform agenda with its associated budget cuts, the Australian Government defence acquisition and sustainment agency, the Defence Materiel Organisation (DMO), embarked on an organisational capacity building and renewal initiative to significantly improve its capability to manage large and complex projects.

As part of this initiative, Queensland University of Technology (QUT) won a public tender and was appointed by the DMO in 2007 as its Complex Project Management (CPM) strategic partner in delivering degree training, continuing education for executives and applied research. This multidimensional engagement established a thick and deep relationship between QUT and the DMO. This relationship is built on active collaboration between the parties and the wider Government and key industry 'supply chain' organisations.

Such has been the satisfaction of DMO with the outcome of the relationship and the program that the General Manager Systems (Deputy CEO), Mr Kim Gillis, commented in his speech at the recent graduation ceremony for the first cohort of EMCPM graduates '*...not only did QUT meet my expectations, they exceeded them in almost every aspect....This is an outstanding program but I want the program to be recognised internationally as a benchmark for excellence in the delivery of complex project management training*' (Executive Master of Business [Complex Project Management] Graduation Address, Kim Gillis, General Manager Systems, Defence Materiel Organisation, February 16 2009).

Reflecting on the challenges of transfer of training

While the four level Kirkpatrick model of evaluation (1996) is regularly used to determine the success of education programs, there have been significant criticisms of the model's capacity to capture the success of training back in the workplace (Holton, 1996; Holton, 2005; Bunch, 2007). One important conceptualisation that has aided our reflection is a recently developed model for understanding how learning is transferred back to the organisation and the dimensions that influence learning (Holton, Bates and Ruona, 2000; Yamnill & McLean, 2001; Holton 2005). Importantly, the authors recognise, with many earlier researchers (Noe, 1986; Laker, 1990; Baldwin

& Ford, 1988; Tannenbaum, 1992; Egan, Yang, & Bartlett, 2004; Egan, 2008), that transfer of learning is a complex process that involves many influences and is a 'system of influences' (Holton, Bates, & Ruona, 2000, p.334). These are: trainee characteristics, including ability, personality and motivation to learn; the training design, including a strong transfer design and appropriate content; and the work environment, including support, rewards and the opportunity to use (Baldwin & Ford, 1988).

Holton, Bates and Ruona (2000) relabelled this complex set of influences the 'training transfer system', acknowledging that this 'system' is a 'broader construct than transfer climate but includes all the factors traditionally referred to as transfer climate' and also that 'training content is part of the system of influences that affect transfer but is not a climate construct' (p. 336). Holton (2005) has demonstrated, in his latest research, that 16 factors affect transfer of training, and he developed a multi-level model that combines the intervening variables such as personal traits, attitude and motivation and their relationship to transfer design and those affecting performance in the workplace such as transfer climate (See Figure 3 below). Because of the extreme complexity of the multi-level model, he suggests that it will be some time before it can be fully tested. Nonetheless, the factors identified provide good direction for seeking an understanding of the training transfer system involved in this case study. (See Holton, 2005 for a complete list of the 16 factors).

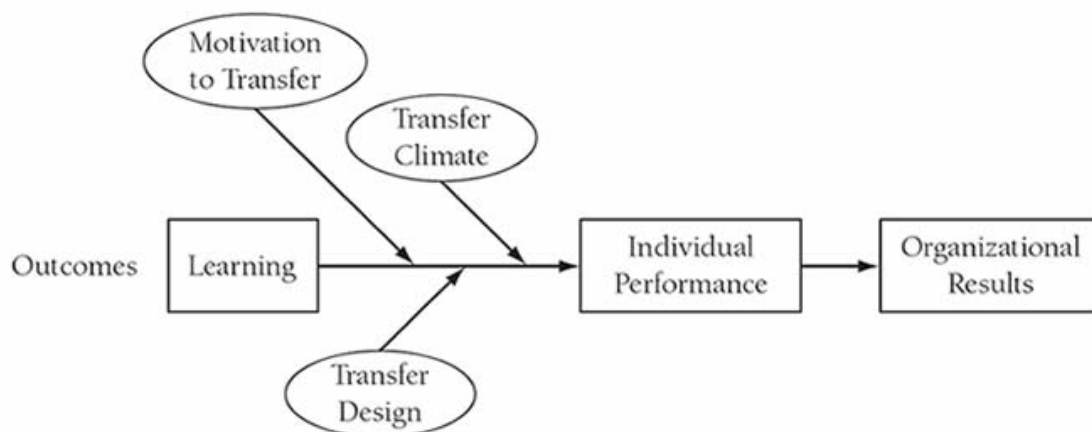


Figure 1: Holton's Training Transfer System (Adapted from Holton, 1996, in Yamnill & McLean, 2001, p.196).

One line of research on the concept of transfer of training has focussed on the idea of near and far transfer. 'Near' transfer is useful for ensuring that specific behaviours and skills are transferred and is most useful for technical and procedural training (Laker, 1990) while 'far' transfer is critical because knowledge can be abstracted and connected to new problems, and according to Laker, far transfer is important and most attractive for management development and creative problem-solving. They need both the skills to deliver results and the analytical and strategic thinking to solve new and emerging problems. Yamnill & McLean (2001), in their summary of the significance of 'far transfer', identify four characteristics of when far transfer acquisition will be successful:

- the better the participants understand the principles, concepts and assumptions of the skills and behaviours,
- the more practice in different contexts and novelty of practice exercises
- the more choice in choosing application opportunities
- the more opportunities to apply to situations other than to those for which they were trained (p. 202).

However, regardless of the desire for near or far transfer, a number of studies have also identified that 'not only instructional design but also the relevance of content are important and necessary components of the conditions that support training transfer' (Yamnill & McLean, 2001). Consequently, the design of a good program will clearly balance relevant industry specific problems and situations with novel and broader-than-the- target- industry experience.

The literature on transfer of learning has also focussed on the benefits of drawing on systems oriented theories to understand the complex web or network of relationships that encourage or discourage returning participants of a learning experience from practising and sharing their learning, thereby enhancing both individual and organisational performance (Rouiller & Goldstein, 1993; Kozlowski & Salas, 1997; Yamnill & McLean 2001; Egan, Yang & Bartlett, 2004; Egan, 2008). Both organisational climate and organisational culture and subcultures play their roles here, as these researchers have identified, and the impact of these aspects in the case organisation has also been identified.

Holton (1996) has also defined three primary learning outcome measures:

- Achievement of the learning outcomes desired in the intervention
- Individual performance captured as change in individual performance as a result of the learning
- Organisational results showing the consequences of the change in individual performance and the changes in the organisation effected by the individual performance.

The paper will therefore report on the following 5 phases in the process used to achieve the desired organisational learning outcomes suggested by Holton's analysis above.

- (1) Preparing for the Education program and defining the desired organisational learning outcomes
- (2) Realising the appropriate choice of candidates
- (3) Designing Innovative Executive Education
- (4) Preparing the organisation for change
- (5) Reporting on individual and organisational performance.

(1) Preparing for the Education program and defining the desired learning outcomes

Traditional engineering approaches to project management within DMO, as with most organisations, have a strong focus on the golden triangle of scope, cost and time. Managing these variables has proven successful in the planning and, to a lesser extent, in the delivery of projects that have relative certainty in each of these traditional project management domains.

The challenge that DMO posed to QUT was to establish a competency development program that responded to the challenges of large and complex projects. Prior to engaging QUT, the DMO, in concert with the Ministry of Defence UK and an international team of executives experienced in managing very large projects, spent considerable energy developing a competency standard as a natural extension of the existing Project Management Body of Knowledge (PMBOK). This new standard defines the essential competencies required for the successful leadership of complex projects, programs and portfolios. This led to the development of a set of competency standards entitled Competency Standard for Complex Project Managers (Commonwealth of Australia, 2006). The CPM Standard is copyright to the Commonwealth of Australia, though has been made freely accessible in the public domain. The full competency standard is available at http://www.corped.bus.qut.edu.au/documents/Complex_PM_v2.0.pdf

According to the Competency Standards for Complex Project Managers (Commonwealth of Australia, 2006):

- “Complex projects are characterised by a degree of disorder, instability, emergence, non-linearity, recursiveness, uncertainty, irregularity and randomness;
- There is dynamic complexity where the parts in a system can react / interact with each other in different ways (a chess game);
- There is high uncertainty about what the objectives are, and / or high uncertainty in how to implement the objectives. The level of uncertainty will vary with the maturity of the individual /organisation;
- There is a highly pluralist environment across the stakeholders where multiple and divergent views exist;
- The strategy is outcomes based, emergent and requiring constant renegotiation; and
- Complex projects are not just ‘complex adaptive systems’, but rather they are ‘complex evolving systems’ dominated by double loop learning – they change the rules of their development as they evolve over time. They do not simply adapt to their environment, but evolve with them.”

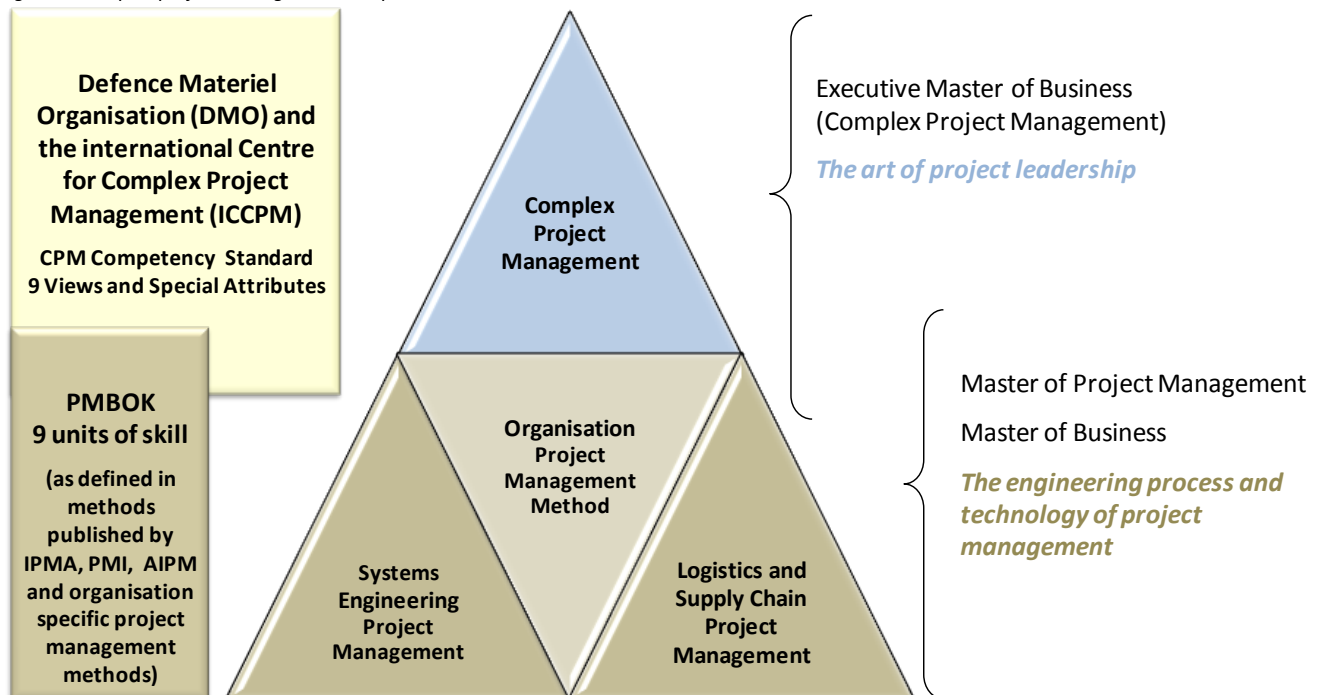
For leaders of complex projects who are involved in these complex adaptive systems, work life is a series of problems and processes which need all three types of leadership: bureaucratic or administrative; enabling; and adaptive leadership (Uhl-Bien, Marion, & McKelvey, B., 2007). In doing so, they are required to become more ‘businesslike’ to manage these complex processes and problems and this imperative has been even more emphatically defined in the recent Australian government Defence White Paper 2009:

The Government expects Defence to become more businesslike, efficient and prudent in its use of resources, with the aim of saving time and money and achieving better economies of scale. Leaders and managers at every level will be expected to promote cost-conscious workplaces in which everyone is mindful of the need to free up resources for investment in current and future capability (Commonwealth, 2009, p.110).

This focus on leading projects effectively and being business-like was initiated by industry practitioners in partnership with DMO. Recognition that job families such as project management need business and leadership skills in their executive managers led to the conceptualisation of a new level of expertise required in complex project management as early as 2006 (See Figure 2 below). Defence Materiel Organisation (DMO) executive leadership then set up the initiative to bring organisation-wide change to DMO to educate its own staff and the contractors with whom they engage. The diagram below visualises the relationship between project management and project leadership for complex projects and programmes in terms of the body of knowledge targeted.

The relationship between DMO and QUT responded to DMO’s strategy, allowed a response akin to what Bruch and Goshal (2003) call ‘slaying the dragon to achieve winning the princess’(p.50). This approach to organisational change, with its attention to organisational energy, unleashes commitment both to responding to threats and responding to an exciting goal (p.47). DMO chose to use the strategy of both award and non-award education programs to create an exciting goal ringing in organisational change and improved project leadership capabilities. It also emphasised an urgent need for organisational change that has since been made even more tangible with the Defence White Paper (2009) attempt to ‘slay the dragon’ with its demand for a \$20 billion cost-saving in the delivery of defence capability to the armed forces.

Figure 2: Complex project management competencies extend the traditional PMBOK



The standard defines the behavioural competencies and underpinning knowledge required by project and programme leaders of complex projects and the special attributes which distinguish them. Within the CPM Standard, there are nine ‘views’ structured to reflect observable and assessable competencies that support project management leadership practice, being:

Strategy and Project Management

Innovation, Creativity and Working Smarter

Business Planning, Reporting and Performance Measurement and Lifecycle Management

Systems Thinking and Integration

Culture and Being Human

Leadership

Organisational Architecture

Change and Journey

Probity and Governance

The CPM Standard also outlines five 'special attributes': *wisdom, action and outcome orientated, creates and leads innovative teams, focused and courageous, and ability to influence*, all of which are identified, by successful senior industry practitioners, as essential to success in leading complex projects.

While the challenge for QUT was to develop an education program that could achieve the learning outcomes for individuals identified as desirable by the DMO sponsor and delineated in this competency standard, it was even more challenging was to ensure that, working in partnership with DMO, the outcomes of this program would be transferred back to the organisation and that the behavioural outcomes would support the broader organisational change agenda.

(2) Realising the appropriate choice of candidates

Defence Materiel Organisation has a rigorous selection process for participants of the program. Self-selection, supervisor nomination and /or identification of high potential staff, all with experience in projects are the starting point for those able to apply. In this way, the best of the organisation's resources are selected. Following this application process, a battery of psychological tests to assess the potential of the applicants for the EMCPEM program is used. A case study challenge rounds out the process to identify problem-solving approaches. The tests seek to identify those with ability and readiness to learn, and the motivation to lead change on their return. From this group, a merit list is developed. In addition, academic entry standards are also applied by QUT.

By identifying their high potential experienced staff, the organisation matches their people aspirations with their learning and performance goals. As Noe (1986) and Holton (2005) have identified, a whole range of influences starting right back at the choice of candidate will affect not only what participants are willing and able to learn, but also how willing and able they are to share their learning on their return to the organisation.

(3) Designing Innovative Executive Education

The QUT challenge response was to design a program to meet the CPM Standards. This led to the QUT EMCPM which is a specialist coursework masters program that complies with the CPM standard and is designed to accelerate the career of accomplished traditional project managers into senior leadership positions in project based organisations. The program focuses on the art of project leadership as distinct from the entry prerequisite of competency in the engineering process and technologies of project management.

The task was to develop a significant group of project and program leaders with the capacities to lead their projects in complex and ambiguous situations with on-going and emergent challenges such as long technology development horizons, increasing global development interdependencies and the project leadership challenges of managing the complex tasks of administrative, enabling and adaptive leadership (Uhl-Bien, M., Marion, R., & McKelvey, B., 2007). This means that project leaders need to be able manage effectively within the highly bureaucratised and accountable government sector but also to be enablers of change and people and collaborative enough to manage through the systemic changes in emergent problem definitions and stakeholder requirements by renegotiating imperatives and new trajectories.

Dr awing on the CPM standard, the course goals of the EMCPM program are:

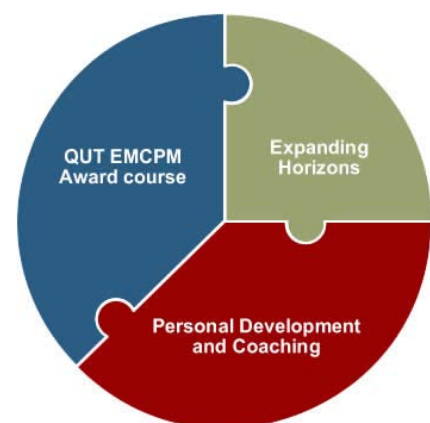
- **Understand self and lead others in an international environment**
- **Lead strategic planning, design and implementation of complex projects**
- **Think holistically: Innovate and creatively problem solve**

A full outline of the Learning Objectives linked to these course goals is appended as Appendix A.

In designing the EMCPM program, QUT worked extensively with DMO and a number of industry collaborators including the UK Ministry of Defence, USA Department of Defence, and prime contractors Lockheed Martin (Fort Worth), Boeing (St Louis), Raytheon (Washington DC) and BAE Systems (UK and Australia). During these consultations, seven high priority topics were identified by these industry leaders as critical to the success of complex projects and are integrated into the EMCPM academic program as themes across the units:

- Managing customer requirements;
- Subcontractor performance and relationships;
- Software/hardware integration;
- Start-ups;
- Strategic approaches to risk management;
- Diversity in government/industry perspectives;
- 'Preparing the battlefield for change'.

The EMCPM program challenges individuals to reflect on themselves and on how others perceive them and provides them with an integrated learning framework to their build their leadership and team building, problem solving, and decision-making skills.



QUT has designed the EMCPM program around three streams, delivered as an integrated whole:

- Executive Master of Business academic award course
- Personal Development stream, including on-going training and personal and team coaching offered by an Executive Coaching consultancy
- Expanding Horizons, which captures a range of experiential activities including role play, critical reflection, workplace projects and internationalisation, and which is designed to expand their thinking and attend to the 'personal attributes' goal of the CPM Standards.

The Executive Master of Business (Complex Project Management) consists of 24 units half-semester units (See appendix B for details of units).

- Domain 1 is a unit set that focuses on establishing a foundation language to understand complex projects and for learning about the self and others, drawing on systems thinking, both hard and soft, and an understanding of strategy and the high order concepts of portfolio and program management;
- Domain 2 explores managing organisations and their contexts, specifically focusing on the business aspects of project management, such as contract structures and relationships, performance measurement, innovation management, business planning, strategic human resource management and risk and change;
- Domain 3 focuses on action frames to effectively lead and act for results in a changing and ambiguous environment and includes implementation of complex projects, an international study tour, change and journey management, issues management and governance and accountability. This domain is the capstone component of the program, unifying the themes and approaches of the academic course and bringing together strategy, leadership, communication, and governance with the expanding horizons and personal development components in the 'leadership for results' of large and complex projects.

For a full description of the delivery format and style see Appendix B.

Measuring the effectiveness of this learning is, in itself, a complex project. Throughout the program, the content and the learning outcomes of units, mapped against the CPM standard, are assessed both from the point of view of underpinning knowledge and by tying assessment items to behaviours identified in the competency standard. Examples of assessment items that meet Gulikers, Bastiaens, and Kirschner's (2004) criteria for authentic assessment include: developing strategy plans; creative problem-solving; developing business plans and communication plans for defence and for novel environments such as natural disasters and for industries other than defence; personal development plans, decision-making using cases, selling business ideas, developing performance measures, designing contract approaches, conducting a media interview, and negotiating outcomes. The written and oral assessment tasks are, in the main, designed to allow participants to demonstrate how and why recommendations and decisions are valid and useful rather than to test memory. Through the lenses of our understanding of the principles theory of abstraction and application (Goldstein 1986) and its impact on far transfer, participants are encouraged to practise their thinking and application through writing reports, plans, presentations to panels of industry professionals, and in teams and whole-of-class discussions and debate.

In addition, both near and far transfer is encouraged through workplace application and experimentation in two formal workplace project units where the program sponsor nominates a workplace project site and senior mentor of the most complex projects in the organisation for each program participant. Participants complete a significant task and conduct a strategic conversation with the mentor and their team to either recommend an improvement in the workplace or assist the mentor with an intervention to improve the project. The outcomes of the Capstone integrating Workplace Project for Cohort 1, 2008 assessments by the workplace mentor are presented below. A selection of supervisor comments from assessment documents is also presented below.

Quality of Feedback and Usefulness of Results as Assessed by Workplace Supervisor

Above Expectations	Equal to Expectations	Below Expectations	Average Project mark/10
14	4	0	8.1

Comments

“The recommendations were of immediate use.”

“One of the recommendations offered a solution to a long standing problem.”

“He has come up with some acute insights which have the potential to offer value in the execution of the Program.”

“He was able to distil the main points of his analysis in a way that allowed rapid assimilation by his clients.”

Quality of Working Relationship with Project Team as Assessed by Workplace Supervisor

Above Expectations	Equal to Expectations	Below Expectations	Average Project mark/10
12	6	0	8.6

Comments:

“Her emotional intelligence and identification with the project under review were simply outstanding. I was particularly impressed with her questioning technique in drawing out information and her persuasive style in delivering her assessment.”

“He developed an excellent working relationship with myself and my Team, resulting in a number of solid areas for improvement which we will be looking into in 2009.”

“She was able to interact and gain the confidence of the project team members, which has led to a quality outcome.”

“He is an exceptional strategic thinker and full spectrum leader.”

“I found him to be very emotionally intelligent – a great asset when the main complexity with most complex endeavours usually reverts to relationships and emotions overcoming rational thought processes.”

These assessments by the mentors in DMO suggest a highly successful and useful application of learnings as a result of the workplace projects as well as significant transfer of learning back to the organisation. By confirming the usefulness of the learning, peers and supervisors play an active role in supporting future transfer of learning as participants receive reinforcement that what they are learning in the classroom is both useful and valued (Holton, 2005).

All units are also carefully evaluated, with questions around usefulness and application to the workplace featured and recorded for continuous improvement. For example, in Year 2, the program included a new unit incorporating skill development in the use of data for decision-making. This was added once a gap in skill was identified via assessment and evaluation of units.

Formal assessments by workplace mentors provided ‘early’ clear indications of the high value the organisation has placed on EMCPM underpinning knowledge and the behaviours. This programme management education has a focus on people leadership, team building, problem solving, and decision-making skills in the EMCPM award program, reinforced through the personal development and executive coaching focus, and practised in the Expanding Horizons through role-play and drama, the use of deliberative pedagogy, and critical reflection activities. Participants learn what this project-based organisation aspires to be, as understood by its most senior leaders, and this heightens transfer of learning (Holton, 2005). The exposure of participants to systems thinking also focuses their attention on the relationships between projects, their stakeholders and the well-being of the whole organisation. This provides both strong content relevance and learning focussed on both the cognitive and emotional development needed for leadership roles.

4) Preparing the organisation for change

Alongside the formal education program, QUT delivers a series of Continuing Professional Development (CPD) events each year at which senior staff from DMO, government and corporate organisations have the opportunity to engage in one day or multiple day active workshops with the international speakers visiting for the EMCPM.

For DMO, the CPD events provide a bridge for the wider organisation to be exposed to some of what the EMCPM participants are experiencing and in doing so provides a forum for dialogue about opportunities for organisation change, both within and subsequent to each CPD event. For example, around 80 staff, mostly senior level from across the defence sector, attended a full day workshop on systems thinking where an international leading academic on the subject explored how this approach can change how one thinks about the relationship between projects and the organisation. Another full-day seminar was on constraint management and another on leadership and listening. A fourth canvassed real options thinking and risk. CPD events mirror participant classroom learning and prepare the ground for later discussions between EMCPM participants and senior staff. CPD

events for senior staff therefore symbolically demonstrate to participants that what they are learning is of interest and value to the organisation.

Guest speakers from DMO are also regular visitors to class, take part in panel assessments, and attend network events such as lunch etc. Here, participants not only see that the organisation values what they are doing when senior leaders take part, but participants also have a chance to present new ideas and establish a basis for future advocacy. For example, inviting one senior executive who had responsibility for leading innovation in DMO to a classroom innovation marketplace facilitated the direct transfer of ideas originating in the classroom back to the workplace.

The involvement of mentors during two workplace projects during the year also extends the network of support by creating opportunities for exposure of new ideas to the various subcultures (Egan, 2008) that can support transfer. These subcultures are the basis of many project-based organisations (Turner, 2009). Egan (2008) and Holton (2005) suggest that peer and supervisor support are critical elements of the transfer system. Building a common language for new ways of thinking and working is one important strategy to facilitate transfer of learning.

(5) Reporting on individual and organisational performance.

The DMO:QUT partnership includes applied research to provide measurements of success for the CPM program, benchmark with other organisations and feedback improvements into the EMCPM.

The University has been successful in leveraging DMO partner contributions to applied research, winning an Australian Research Council (ARC) industry linkage grant of a further AUD \$445,000 over the period 2009-2012 to investigate 'the contribution of project leader behaviours to processes and outcomes in large scale projects'. This study, which commenced in 2008 with an initial qualitative scoping study on the experiences of 20 project managers in DMO and their prime contractors, preceded the 2009-2012 formal study. The latter includes an intervention whereby EMCPM participants for 2009-2012 will be tracked formally to gauge the value of the education engagement strategy to DMO. A second research project is investigating the impact of complexity on the success of complex projects, seeking to identify appropriate metrics that may form an 'early warning system for success and failure in complex projects'.

As there is an overlap between the researchers and those who deliver EMCPM units, this formal research will have a considerable impact on our understanding of the contribution of project leader behaviours and contribute to improved practice of project management. This third form of engagement further supports the organisational transformation opportunities as researchers and the researched share their learning.

This section will report the outcome of nine interviews with: the project sponsor and supervisor of two graduates; two senior executives who were supervisors of two graduates; a further two graduates. This pilot study of Cohort 1 2008 was used to identify issues that will be more formally followed up in the ARC Linkage Grant study of Cohort 2 and 3, 2009 and 2010 described above. The interviews, conducted 4 months after return to the workplace of Cohort 1, in May 2009, ranged from 40-60 minutes, were semi-structured, and audio recorded with written notes for data analysis. The

questions approximated Kirkpatrick's Level 4 but also included questions that captured the 16 factors that Holton identified as important for the 'transfer system', including personal capacity for transfer, peer support, supervisor support, performance outcomes expectations, resistance /openness to change and performance coaching.

Transferring learning: Where the rubber hits the road

A number of themes emerged during the analysis of the Interviews that explored how individual learning was being used in the organisation. The data can be clustered around 5 themes:

- *(a) Strategic thinking*
- *(b) Being self-aware and using communication effectively*
- *(c) Desire for Organisational improvement*
- *(d) Personal Confidence in and critical reflection on decision-making*
- *(e) Sense of respect from the organisation*

The transition arrangements back to the workplace vary with approximately 50% of the graduates placed in change leadership roles both across corporate areas and in projects and 50% working back in project management roles (Interview 6).

(a) Strategic thinking

One of the most persistent themes of the interviews clustered around the increased ability of graduates to see the big picture in the organisation and how this shaped the way they made decisions and operated in the organisation. All six graduates interviewed talked of how the EMCPM had helped them to see things 'with a different set of eyes' (Interview 5) and how they had a 'narrower focus before' and that the EMCPM program had the effect of 'broadening me out' (Interview 7).

All three supervisors talked of their awareness that the graduates were 'taking a more strategic perspective' and taking a 'broader picture, taking them from being self-centred, organisationally centred to their work areas and more to behaving and focussing on organisational outcomes' (Interview 6) and 'thinking outside the square' (Interview 8) and 'trying out a wider field of view' (Interview 4).

The issue that this changing focus suggests is that the program has increased the capacity of graduates to apply 'far transfer' in their thinking, moving their ability to contribute to the wider organisation rather than to just projects, where they previously set their sights.

(b) Being self-aware and using communication effectively

All interviewees commented on the significant changes that they had observed in the self-awareness of the graduates and also in the improvements in their ability to communicate with more influence. One graduate commented on their 'linking skills' (Interviewee 2) and another that they the biggest thing they had learned was that 'you catch more with honey than vinegar' (Interview 3). Several graduates commented on their increased ability to 'listen reflectively' (Interview 9) and to frame issues to build effective relationships (Interview 2). All three supervisors gave examples of situations where the graduates either supported leadership behaviours or affected behavioural change in their leadership approach by sharing their new knowledge. One supervisor summed it up: 'Very much more strategic and collaborative approach. Using all the right words. Get stuff done. People are happy with the outcome' (Interview 6).

(c) Desire for Organisational improvement

One of the key aspects that Holton identified in his likelihood of transfer factors is the personal capacity for transfer and the opportunity to use the knowledge, skills and behaviours learnt. The sponsor made careful strategic choices about what to do with the graduates to maximise value back to the organisation and build support amongst the senior leadership team. The organisational arrangements for transition back to work vary. As the sponsor suggested: 'I needed a group of change leaders. Only about half are back in projects'.

Graduates talked of their desire to be 'more business-like' and 'get the momentum going' (Interview 3) and being 'more attuned to how we can use business trips to do business in a leaner way' (Interview 9) and their energy for effecting change.

Three of the six interviewees have returned to roles where their primary task is to lead change and to bring senior leaders along with them. Two interviewees indicated that they understood that they were to 'make change', to 'make discussions work better' and to have a 'catalytic role' (Interview 2). As all interviewees were engaged in a 'think tank' with senior staff, since their return to work, to consider the restructure plan for the organisation, they also recognised that their ideas were valued, according to two of the supervisors. As one of them said: 'I relied on their knowledge – multiple different models/ rather than to rely on old ways' (Interview 6).

One interviewee, on the other hand, felt that they can 'see waste and inefficiencies and better ways' but were at times the role was frustrating because of the 'willingness [of the organisation] to accept constraints, mindsets and myths and ready to accept the status quo' (Interview 1). Amongst those in projects, there was acknowledgement of the new 'spirit of discovery' and bringing their 'new skill set' to put things together' to make improvements (Interview 7). One interviewee commented particularly on their new-found spirit of 'being a good corporate citizen' which had led to their putting considerable work into designing a work system to help all projects where previously they would have 'stayed in their project cocoon' (Interview 5). This contrast between project sub-cultures also plays an important role in what gets transferred. As Egan (2008) recently demonstrated, sub-cultures have a very important role in determining transfer through knowledge sharing, and organisational change energy is strongly linked to the level of resistance or openness to new ideas within a group.

Perhaps one supervisor's view captures this range of experiences most succinctly: 'You can't enable them with all this creativity approach if they don't have a sponsor.... [They need to be] 'enabled' (Interview 6).

(d) Personal Confidence in and critical reflection on decision-making

Each of the graduates also talked about their confidence, both personally and in their decision-making. One interview put it like this: 'I have increased my capacity to deliver outcomes and my decision-making is now clear cut. I have the tools to identify the risks and move on quickly (Interview 5). Another suggested that the 'hesitancy has gone away' (Interview 2) while a third suggested that their confidence level has 'gone through the roof' (Interview 3)

However, several also commented that they were more thoughtful, sought research and evidence to help their decision-making and felt confident that this was the most appropriate way. One interviewee commented that while previously they would 'rush in', they now considered the documentation, questioned why they were doing it, found supporting information and exercised their reasoning and persuasion (Interview 2). Another commented that the EMCPM had 'trained my thought' and the 'team charters and communication plans for what you want your partner to get out of it make perfect sense to me now' (Interview 1). Several interviewees also raised the role of self-reflection and the requirement for critical reflection as strong contributors to their development.

Supervisors equally commented on the confidence displayed by the new graduates and that they valued the contributions of the graduates and told them so. By giving them high profile opportunities, they also reinforced their value. This linked to one of Holton's factors- performance coaching- where formal and informal indicators of performance from the organisation heightens willingness to transfer learning. Transfer climate cues make an important contribution to the success of the organisational learning and these supervisors support sharing of knowledge.

On the other hand, one interviewee commented that some of the graduates, particularly those in the projects, 'were back in their shell' and 'trying to keep their heads above water' (Interview3). Another commented that, in the organisational climate, they had to 'select those who are willing to receive [the ideas] (Interview 1). Holton's model would suggest that motivation to transfer is strongly affected by the climate in these examples. Performance coaching and supervisor and peer support are strong cues to the organisational climate being experienced by the graduates. The visibility of opportunities back in the projects with their own individual welcoming or resisting subcultures, can make this transfer of learning a challenging task.

(e) Sense of respect from the organisation

The final theme that emerged was triangulated from a graduate, supervisor, and sponsor level. All agreed that since the graduates' return, there was an increased respect for their work. The sponsor put this down to the fact that they are more 'organised, structured,' and added: 'Not only am I recognising it, I am seeing other senior leaders recognising it' (Interview 6).

Graduates, on the other hand, talked of feeling that respect from senior leaders and that having 'a more complex understanding' of issues ... and better communication and people style' had increased their credibility (Interview 2).

Conclusion

The paper has tracked the development of the relationship between DMO and QUT and the depth of engagement required to achieve both individual and organisational learning goals through an education program. As Holton (2005) has concluded, the multi-faceted and multi-level influences on transfer of training make it difficult to demonstrate that an education program can make a difference to an organisation and add value. Potentially, there are so many things that could go wrong in the system of influences that impact transfer of learning. The careful identification of learning and organisational goals, the collaborative design process, selection of participants, and the on-going engagement of senior leaders is the right mix to ensure that this programme management education course is successful.

The data collected so far, although mostly qualitative and limited in size, suggests that there are many good outcomes for both individuals and the organisation. Holton's work, and that of the earlier researchers who have tested large sample sizes, would suggest that the full range of factors need to be considered when evaluating programs of this nature.

The QUT program involves the collaboration of learning designers, corporate educators with extensive experience in complex project management and business, and academic experts who bring the latest thinking from their fields. It is also an engaged conversation with the senior leaders of stakeholder organisations, not only to design the program but also to engage participants in the classroom in the strategic thinking of their organisations. Additionally, mounting such a program requires widespread participation in the 'learning conversation' across the organisation through workplace projects and CPD events. Senior sponsorship is essential if such a mobilisation of organisational energy is to be achieved. In this case study, the senior leadership of DMO are active partners in achieving programme management education. It would seem, at this early stage, that efforts to 'win the princess' are being achieved.

The data from the workplace projects and the qualitative interviews suggest that this complex set of influences, the 'training transfer system', as Holton calls it, all come into play here. Highly motivated learners from the EMCPE are bringing new approaches to the organisation, as the interviews show, and their learning has delivered the confidence to improve strategic and personal decision-making and enhance collaboration across DMO. Positive supervisory relationships mostly also allow graduates to flourish and share their newly learned ideas. On the other hand, the transfer climate varies across the organisation, as do subcultures, and less welcoming approaches can quickly return graduates 'to their shell'.

The challenges of resourcing such an initiative, both for the educational institution and the organisation, are also significant. The paper has outlined the many ways in which this type of engagement far exceeds the resourcing intensity required of programs where individuals are placed in generic university programs. The early evidence would suggest that the benefits of this corporate

education model outweigh the vagaries of generic programs but equally that the costs in terms of commitment, time and effort are significant. The formal longitudinal study of the 2009-2012 cohorts will bring clearer evidence to the table about the outcomes.

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APPENDIX A

Drawing on the CPM standard, the goals and the objectives of the EMCPM program are as follows:

EMCPM Program Goals	Learning Objectives
1.0 Understand self and lead others in an international environment	1.1 Develop the personal attributes of action and outcome orientation, ability to influence and self-knowledge that distinguish the manager of complex projects 1.2 Develop and demonstrate the leadership and communication skills to manage the staff involved in complex projects 1.3 Work effectively in managing people and a wide range of stakeholders through understanding of culture, cognition, personality and human lifecycle
2.0 Lead strategic planning, design and implementation of complex projects	2.1 Understand the context of complex projects and the design and implementation of appropriate project strategy and systems to match emergent requirements 2.2 Demonstrate the capacity to design, establish and manage the organisational architecture for complex projects 2.3 Develop the understanding and skill to deliver probity and governance requirements for complex projects 2.4 Develop the capacity to design and implement innovative business planning, reporting and performance measurement systems
3.0 Think Holistically: Innovate and Creatively Problem Solve	3.1 Develop the insights to manage people and systems subject to on-going change and constantly adapt to emergent conditions 3.2 Demonstrate the capacity to envision novel, critical and creative responses to complex and emerging problems

APPENDIX B

The Executive Master of Business (Complex Project Management) award course

The EMCPM is delivered as an intensive program, with each full time cohort commencing in January and concluding late December the same year. Part-time participants can enrol for components of the full time program and exit with a Graduate Certificate or Graduate Diploma.

Each module of study (unit) is designed through collaboration amongst the course co-ordinator, domain expert academics, industry practitioners, and professional learning designers. The learning designers ensure quality, consistency and a focus on the participant learning experience by guiding the process of developing study guides, teaching plans and on-line learning resources situated in the Blackboard on-line environment.

Each unit is co-facilitated by a QUT staff member plus a local or international consultant or leading academic. This pairing brings both breadth and depth, equipping participants with the domain knowledge and its application to solve future business problems. The team jointly prepares for the class, delivers the class and marks the student assessment. Classes are supported by a unit outline, a comprehensive study guide (including readings and textbook) and online resources, allowing the co-facilitators to use the intensive teaching sessions for active learning tasks, discussions, and reflective activity. Follow up consultations and collaboration between participants is facilitated using the online tool Elluminate. The course is delivered in a purpose built executive education facility in Canberra, Australia. The facility is fitted with high quality seminar and breakout rooms, relaxation and discussion spaces, videoconferencing, multimedia and virtual technologies to support collaboration with staff and amongst the program participants.

The EMCPM award course is comprised of 24 half semester academic units, clustered into three domains, 'managing yourself and others', 'performance for results' and 'leadership for results'.

- Domain 1 is a unit set that focuses on establishing a foundation language to understand complex projects and for learning about the self and others, drawing on systems thinking, both hard and soft, and an understanding of strategy and the high order concepts of portfolio and program management;
- Domain 2 explores managing organisations and their contexts, specifically focusing on aspects not traditionally previously studied by engineering project managers;
- Domain 3 focuses on action frames to effectively lead and act for results in a changing and ambiguous environment. This domain is the capstone component of the program, unifying the academic course with the expanding horizons and personal development components in the 'leadership for results' of large and complex projects.

Domain 3: Leading for Results

- Workplace Project 2
- Issues Management
- Accountability and Governance
- Managing Contract Relationships
- Change and Journey
- Leadership for Results
- Implementation of Complex Projects
- International Study Tour

Domain 2: Performing for Results

- Negotiation Strategies
- Business Planning
- Strategic HRM
- Managing for Innovation
- Planning for Risk and Change
- Performance Measurement
- Complex Projects and the Law
- Workplace Project 1

Domain 1: Managing yourself and others

- People in Organisations
- Building Effective Teams
- Strategic Management of Complex Projects
- Communicating Effectively
- Creative and Entrepreneurial Thinking
- Self Realisation and Personal Development
- Systems Thinking
- Understanding Complex Projects