

Designing Postgraduate Project Management Programs for Success

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Abstract

Postgraduate project management program offerings have significantly increased in recent years. Higher education institutions are presenting what they feel is the best education to equip graduates for project management roles within industry. However, project management education programs need to be continually updated to ensure that they are relevant and suit the modern business environment.

The background for this paper is based within the Australian education sector and it essentially sets out to review the redevelopment of the generic Master of Project Management program offered by the University of South Australia. Relevant literature is examined to garner current thinking in respect to project management ideology and higher education. This is followed by a commentary styled review that examines the Master of Project Management program and its redevelopment objectives and expected deliverables. It covers the areas of program content, teaching approach, program transitions and general considerations.

This study provides an insight into how postgraduate project management programs can possibly be improved. The review also outlines how program improvements can be structured. Furthermore, it puts forth a project management education that houses theoretical foundations, advanced concepts and a project lifecycle teaching approach which could be of benefit to students, academics, employers and industry. It is hoped that this study will assist others in the design of their education programs.

Keywords: Project management, university education.

Introduction

The number of project management education programs has significantly grown in recent years with many universities and other education providers delivering programs to satisfy market demand. The author has a great interest in the development and delivery of project management education based on recognised best practices. This extends to providing well educated project managers to the project management profession and industry in general. The stimulus for this paper comes from a desire to reflect on a period of consultation and development in respect to the existing Master of Project Management program at the University of South Australia. This post graduate program is generic in nature and thus applicable to virtually all business, industry and community activities. Whilst the study is based on the experience of redeveloping the project management program at the University of South Australia, the content of the paper is thought to provide significant insight into this particular area of education. It will commence with a literature review on the topic followed by a commentary of the author's experiences and reflections as the primary program leader at the time.

Project Management Ideology

In the last few decades project management thinking and knowledge has greatly progressed. Managing projects is no longer about just understanding the technical aspects of any

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particular project. Parker and Craig (2008) put forth that project managers need to initiate ideas and develop solutions. They further contend that project managers need to be able to plan, organise and work through their team issues all whilst providing leadership and maintaining communication channels with all stakeholders as well as adequate control measures. Hence, it could be said that modern day project management has moved from a focus on the technical knowhow more so to a broader management knowhow. Project management has seen its generic body of knowledge applied to many fields. These include defence, construction, information technology, community events and many more. Publications such as the *Guide to the Project Management Body of Knowledge* (PMBOK® Guide, PMI, 2013) provide a good foundation in project management ideology and principles to guide practitioners and educators within this area.

Kerzner (2011) contends that project management has gone past the days of just being a quantitative tool for the use of employees. This would be in reference to project management having originally developed its processes on many of the harder concepts such as project scheduling and cost control. He goes on to say that project management is now viewed as an approach that has beneficial effects on the whole organisation. Hence, project management has grown to embody a whole new way of thinking in respect to how businesses manage their organisations. In fact, Foti (2001) predicts that the “managing-by-projects” methodology will ultimately progress and influence the corporate culture of many organisations. Anecdotally his prediction would appear to be quite correct and gaining increasing momentum as time goes on. It is evident by the interest in project management approaches that industry is catching on and organisational change is occurring. As such, project management education providers need to keep abreast of changing professional and business environments.

Central to project management thinking is the delivery of desired outcomes and hence the notion of project success. Nixon et al. (2012) contend that the reasons behind project success or failure have been a much debated topic for some time. Essentially project success is based on the idea of what actions are necessary for projects to meet the planned objectives. Sutterfield et al. (2006) suggest that projects often fail to meet objectives in large part due to the ineffective management of project stakeholders. Stakeholders include anyone that is influenced by a project with these people able to make or break a project. Rolstadas et al. (2014) weigh in with the notion that successful projects are driven by the adopted project management approach as aligned to the challenges involved within any particular project. The viewpoints on the topic can vary but the underlying concepts are based around how can successful projects be created and how can failure be avoided.

Within project management circles there has been a growing awareness amongst practitioners and scholars that project management thinking needs to broaden its base. For example, concepts such as project governance are increasingly seen as critical to project management. Biesenthal and Wilden (2014) contend that governance within project environments is important for success. In general terms an organisation’s strategy and project objectives need to be brought together and this can be supported by good project governance. Further to this the debates on leadership and soft skills are still topical in project management. It could be suggested that there is much more to project management than casual observations may first identify. Hence, it is important that deeper understandings are provided for those working within the field and those planning to study within project management disciplines.

Project Management Education Programs

The growing adoption of project management ideology and practices within business, industry and the community has seen the need for related education programs. Generic

project management programs are now offered by many institutions and providers. These range from short certificate courses to rigorous research doctorates. McCune and Entwistle (2011) contend that university education needs to adopt a 21st century perspective encouraging a 'will to learn' in students. Furthermore, they see teaching/learning arrangements as being able to provide students with environments to gain deeper understandings and in the process further develop this potential for understanding. Mtnez-Almela and De Los Rios (2011) put forth that having an appreciation of the student experience can allow universities to focus in on the pedagogic and education factors when teaching project management. These aspects are seen as carrying significant importance to the development of effective teaching programs.

Danielson (2007) contends that all professions establish a "language of practice" which allows professionals to discuss their field in terms of important concepts and understandings. This is very true within project management and the introduction to terminologies quite often commences in the classroom. The aforementioned PMBOK® Guide is a good example of a publication which introduces these terminologies to students and learners of project management. Such terms as project management processes, tools and techniques, knowledge areas, scoping, work breakdown structures and deliverables (PMI, 2013) become known to newcomers at quite an early stage. Furthermore, Burke (2007) suggests that as project management takes hold within industry its participants will need to have the knowledge to utilise a wide-ranging set of planning and control methods for practice. In contrast people such as Young and Young (2012) suggest that due to constant failure within projects we might have reached the limit of our current project management approaches and may need to investigate new ways forward. Whilst this would be a highly unlikely proposition it does highlight the need for a more enlightened view on project management paradigms, practice and education.

The project managers of today have a greater variety of complex issues to contend with than possibly at any time in the past. Moreover, in recent years project management practice has tended to move away from focusing on a rigid technical perspective to one which is more encompassing and broader in its outlook. Hence, project management education should follow suit. Whilst publications such as the PMBOK® Guide are valuable in teaching project management fundamentals they do have an emphasis on process based information rather than broader based concepts. In fact, this publication has been long seen as focusing on "hard" skills at the expense of the "soft" types (Gale & Brown 2003, Bourne & Walker, 2004; Zwikael & Bar-Yoseph, 2004, Pant and Baroudi, 2008). Hence, project management education providers need to be cognisant of this and reflect the broader situation within industry. It needs to prepare students for project management situations in all their dimensions.

According to Mtnez-Almela and De Los Rios (2011) when designing educational programs professional competencies such as that in project management are very important. Hence, this leads one to consider what will be taught and how will it be taught. It would seem that programs need a project management foundation to base teaching and learning on but also a significant broadening of concepts to more closely align with current project management practice. Experiential learning is a good way to impart project management competencies knowledge as it involves teaching in respect to real world experiences and examples. Moon (2004) suggests that experiential learning can also make use of assessment work that is quite reflective in nature which can be quite useful. Moreover, varying assessments of appropriate

styles and rigour need to be in place to test fundamental and advanced knowledge as related to project management professional competencies.

With advancing technologies educators are discovering that in this digital age learning does not only occur in the classroom. Within higher education a concept which is currently quite topical is that of “blended learning” within programs. Beetham and Sharpe (2013) contend that blended learning provides a more student centered learning approach via the use of various modes of teaching – both in the classroom and online. In essence, a mix of teaching styles from the traditional and the new. Hence, in this new modern world all education programs, including those in project management, need to adapt to a changed and ever changing education environment.

Commentary: Postgraduate Project Management Programs

The focus of this paper is in respect to generic project management programs at the higher education level. It is most relevant to postgraduate studies such as Masters degrees in project management. Generically based project management programs such as this have been sprouting up at many educational institutions. It is quite common for these postgraduate project management programs to allow those from different fields to add management qualifications to their undergraduate qualifications. This is akin to what many have done with Master of Business Administration qualifications but in that case more so for business rather than projects. This study is based on the on-campus Master of Project Management program as offered by the School of Natural and Built Environments at the University of South Australia. Hence, it is essentially a case study. The program operates within the Construction and Project Management discipline as this is where it originally evolved. Note that this Masters program also has a Graduate Diploma in Project Management and a Graduate Certificate in Project Management nested within it. The nested programs attract a cohort of approximately 50 students a year on-campus and many more online via Open Universities Australia (OUA). These students come from varied backgrounds such as information technology, construction, business, engineering, etc. The Masters program, of one and a half years duration, was initially designed to mainly teach project management fundamentals. This included knowledge and processes strongly underpinned by the Project Management Institute’s *Guide to Project Management Body of Knowledge* (PMI, 2013).

The following looks at the redirecting of the university’s project management program in respect to redevelopment objectives and expected deliverables. This process took place over several years culminating in first delivery of the new program in 2012. The following sections provide an insight into the redesigning of program content and teaching approach followed by a look at program transitional arrangements and some general considerations. It will also incorporate some further program changes which will be introduced in 2015.

Program Content

The program’s previous educational content was strongly influenced by the more technical concepts involved within project management. However, it was acknowledged that industry requires broader concepts to suit the modern project management environment. Hence, the programs were designed to contain content and topics that reflected the needs of industry. As such, the program leaders set out to align the content with current project management thinking and practice. Broad ranging sources for information and ideas assisted the formation of a plan for revised content. The sources included industry consultations, academic staff consultations, input from the university’s project management advisory committee, knowledge on current industry practices and academic thinking on project management,

researching other project management providers, university run student surveys and general student feedback. The student surveys and feedback were particularly important to also understand the current student experience.

The plan was for the project management educational material or content to closely align with the program expectations and deliverables. In this respect the emphasis was on providing appropriate direction so that current innovative project management concepts were included into the program. After much research and thinking over a sustained period of time it was generally agreed that the areas of soft skills, strategy and sustainability (3S) were poorly represented within the university’s project management programs. This was thought to be also true for other project management educational providers who at the time seemed to focus on traditional harder concepts. This wasn’t to suggest that the ideas held within traditional based project management education should be ignored. Rather that these older more fundamental concepts be built upon. As such, the 3S concepts seemed a good place to start so that students are offered a greater understanding of the project manager’s role and challenges in this modern and increasingly complex world.

In light of the above it was decided that project management publication, the PMBOK® Guide, should still provide some foundation to the coursework. It was strongly held that fundamental project management technical knowledge and processes still needed to be taught even at the postgraduate level. However, accompanying these areas will be a greater emphasis on the highlighted 3S concepts: soft skills, strategy and sustainability. The intention was that the knowledge within these three areas needed a greater individual focus in addition to being interwoven into general course content. Table 1. provides a guide to some proposed expanded/enhanced teachings within the project management discipline.

Table 1. Soft skills, strategy and sustainability (3S) topics

Soft Skills	Leadership, team building, interpersonal skills, team motivation, personality traits, networking, negotiation techniques, conflict resolution, personal communications and other human behaviours.
Strategy	Business strategies, project strategies, corporate objectives vs. project objectives, maturity models, stakeholder management, systems thinking methodologies and globalisation issues.
Sustainability	Environmental, social and economic aspects, business practices, project practices, global awareness, government initiatives and community welfare.

The areas listed in the above table give an insight into possible new opportunities for content directions. In addition, further consultation found that industry needed graduates to understand areas such as ethical behaviour and governance within business and project management environments. These could be easily associated and built into the 3S thinking platform.

An outline of the Master of Project Management program (as recently revised for 2015) is shown in Table 2 below. It briefly summarises the courses/subjects, teaching and assessment regime and the intended graduate knowledge and attributes. Year 1 provides for some

fundamental courses/subjects alongside other more broadening courses/subjects. In Year 2 the course/subject emphases are on higher level advanced concepts followed by the capstone research project.

Table 2. Project management program: teaching, assessment, and graduate knowledge and attributes (on-campus Masters)

Courses/Subjects	Teaching	Assessments	Graduate Knowledge and Attributes
Year 1			
Principles of Project Management	Lectures, tutorials, case studies, group discussions	Individual essay Group report Examination	Theoretical and technical knowledge in a range of principles, skills and techniques
Project Risk Management	Lectures, tutorials, group work, case studies, videos	Individual essay Group report Examination	Theoretical and practical knowledge of risk management processes and methodologies
Procurement & Contract Management	Lectures, tutorials, legal case readings and discussion	Individual essay Group report and presentation Examination	Strategic procurement knowledge and contract practices and law as applied to projects
Project Governance & Ethics	Lectures, tutorials, class discussions	2 Individual essays Group report	Understandings of governance issues and ethical perspectives
Project Control Methods	Lectures, tutorials, computer practicals, team problem solving	Individual essay Group report Examination	In-depth knowledge in respect to practices associated with the controlling of project activities
Project Leadership & Teams	Lectures, tutorials, problem based learning	2 Individual essays Group presentation	Practical knowledge on managing teams with critical links between people, ideas, information
Economic, Social & Environmental Analysis	Lectures, tutorials, group work, develop business cases	Individual essay Group report Class test	Awareness in respect to sustainability factors that influence and constrain projects
Research Theory & Practice Methods	Lectures, tutorials, workshops	Individual essay Workshop exercises Research proposal	Knowledge and skills to propose and develop a research agenda
Year 2			
Portfolio & Program Management	Lectures, tutorials, class discussion	Individual essay Group report	Advanced and integrated knowledge of portfolio/

		Reflective report	program management body of knowledge
Data Analysis in Research	Lectures, tutorials	Tutorial questions Major assignment Oral presentation	Understand the theory of statistics and data analysis within research problems
Strategy in Project Organisation	Lectures, tutorials, industry presentations	Individual essay Group report Reflective report	Advanced theory and a practical understanding in respect to project and organisational strategy
International Project Practices	Lectures, tutorials, international case studies	Individual essay Group report and presentation Reflective report	Comprehensive knowledge on the complexities of managing projects on a global scale
Project Management Minor Thesis 1	Directed study under supervision	Multi-part formative assignment	Ability to apply expert, specialised cognitive and technical skills in a substantial research project
Project Management Minor Thesis 2	Directed study under supervision	Minor thesis submission	Ability to apply expert, specialised cognitive and technical skills in a substantial research project

The new program represents a rich breadth of project management educational content based on a series of topical areas. It is taught via a variety of teaching and assessment techniques as listed in Table 2. Furthermore, note that the teaching generally uses a project lifecycle approach which is discussed in the next section. Table 2 also shows how graduate knowledge and attributes are developed in project management via overarching concepts within basic principles, risk management, control methods, leadership, economic, social & environmental issues, procurement, contract management, organisational strategy, and ethics and project governance. The focus on project governance is possibly the newest of topics within project management education. It is thought to be of particular importance as highlighted by Biesenthal and Wilden (2014). Also note that many of the first year fundamental courses draw elements from the PMBOK® Guide, hence, graduate knowledge and attributes have significant alignment with this publication. The Masters program is rounded off with a minor research thesis on a project management topic of student choice (note that Project Management Minor Thesis 1 and 2 are one project). Furthermore, additional courses/subjects are to be included in 2015. These include advanced concepts in the areas of international project management, portfolio and program management alongside dedicated research methods and data analysis studies to assist with the research thesis. This has evolved in large part due to the Australian Qualifications Framework and the need to increase volume and quality of learning. Hence, as of 2015 the Masters program will be of two years duration with advanced course material as shown in Table 2 reflecting increased student knowledge and attributes.

Teaching Approach

When designing the revised program it was acknowledged that the educational content needed to take a big leap forward to ensure deeper project management understandings were

conveyed to students. However, it was also deemed necessary to assess the way in which the educational content was being delivered. Many of the current programs teach project management knowledge areas based on course/subjects topics alone. It was thought that the revised program should not convey project management knowledge purely via “information silos”. It was proposed that a new teaching approach should encourage the topics to be based around typical project lifecycles where possible. As such, it can still teach the project management knowledge areas but highlight the various components in the context of project timelines. The benefit is that students can then gain a better understanding of project management knowledge from a project lifecycle perspective. As such, students gain a fuller appreciation in respect to where various project management inputs and outputs are occurring throughout a typical project schedule. This is a critical aspect for aspiring project managers and very much needed by industry.

In essence, the teaching of the program was to convey fundamental project management knowledge in tandem with broader and more advanced concepts via a project lifecycle teaching approach. The intention was that the teaching was to continue to utilise traditional lectures and tutorial exercises as this is quite entrenched within most university systems. However, the program does encourage the use of other activities such as industry presentations, problem solving exercises, case studies, research undertakings and innovative methods as selected by the lecturers. In more recent times the concept of blended learning is becoming quite popular to assist in teaching. That is a combination of lecture and online teaching materials/activities as described above by Beetham and Sharpe (2013). The program does have support facilities in the form of corresponding interactive webpages for each course/subject. These allow students access to project management educational materials, assessments, recordings and communications outside of the lecture theatre or classroom.

An important part of any teaching is to ensure appropriate design of student assessments. These would comprise of a variety of assessable items of work per student per semester. Examples of mandated student assessments can be seen in Table 2. These include student essays, reports, presentations, examinations as well as reflective journals. Formal examinations are conducted in many of the fundamental courses/subjects in the program. It is thought that this is an essential part of student assessment to ensure project management knowledge, skills and competence have been developed within each individual student. Another aspect considered important was that all courses/subjects, except the research thesis, should have at least one assessment which allows for group work. This is seen as essential to develop important project management interpersonal skills by working in teams and it also encourages student leadership. Furthermore, presentations should feature wherever possible to develop student confidence and improve communication skills. The research component is also important as constructing a minor thesis challenges students to independently investigate and document significant project management issues.

It would seem that there are many project management guides, standards and systems assisting the profession at this time. It is thought that the program’s teaching approach should not attempt to adhere to all of these but rather have an overall aim to make the project management education current and relevant to industry. However, as previously said the PMBOK® Guide is used as a foundation for the program to build upon. It is arguably the most recognised project management publication globally. This does not mean that the teaching within the program follows this publication dutifully. More so it makes use of its fundamental project management concepts bringing these to the fore. A further benefit of making use of this particular publication is that it is widely seen as underpinning the

requirements by professional bodies such as the Australian institute of Project Management and the Project Management Institute. These organisations are very important in representing the project management profession.

Program Transitions and Considerations

This final commentary section highlights some of the more administrative types of issues when introducing a new or revised university program, in this case the redeveloped Master of Project Management. The program had to be approved by the university's academic administration prior to first delivery. This was achieved and then the program development team needed to investigate transitional arrangements to ensure the changeover ran smoothly. This is also important for future academic standing and credit arrangements. Also of note is that the on-campus program is supplemented by an equivalent fully online project management program via Open Universities Australia (OUA). This program needed to be kept quite consistent with the on-campus program so it also reflected the program changes.

With the above mentioned transitional arrangements there was a need to provide current students with a pathway from existing courses/subjects to the new courses/subjects. The preference was to finalise all existing courses/subjects at one time and then direct students to enrol into the new designated courses/subjects to complete their programs. As such the revised programs needed arrangements that could adapt to this requirement. This entailed each new course/subject being linked back to a past course/subject. It is thought that the transitions period will still exist for two or three years. This period provides for the management from existing to new. Furthermore, the revised program needed to consider graduate status for past project management studies. Past graduates wishing to continue on with further study are provided with clear program transitions information that assists with their study plans. Ultimately, it is important to maintain fairness and consistency in the system.

The aspect of transitioning academic staff was also an important issue. The first priority of the intended revisions was to bring the project management programs in line with current industry practice and thinking. As such, the assigning of duties to develop and teach the new courses/subjects was carefully assessed. However, consideration also needed to be given to long standing lecturers that wished to continue teaching as best as practicably possible. The program has a history of industry lecturers alongside experienced academics. Many of the lecturers were keen to be involved and assisted in the development of the program content. They then introduced and modified new content into the designated courses/subjects and many were able to be maintained in their positions albeit with some modifications.

There were many other aspects that needed some consideration in the redevelopment of the project management programs. These included possibly accommodating larger student numbers particularly in the fundamentals courses/subjects, international student arrangements, making the best use of university facilities, library training arrangements for new students and funding, policy and time constraints

Conclusion

This paper provides some insight into the redevelopment of the postgraduate project management program at the University of South Australia. It reflects on the experience of the primary program leader during a period of program rethinking and improvement. Whilst the paper is based on this one large case study or experience it is believed that it is applicable and

valuable for others in similar situations. It shows how project management programs can significantly broaden their content as well as improve their teaching approach. Moreover, it provides project management academics, practitioners and students with a way forward within the education context. The program adopted ideas from many contributors in its formation. These ideas, helped to significantly lift the quality of the current project management program.

The most important outcome of the program redevelopment process is that it now provides for a more up to date and relevant project management education. It is believed that the redesign of educational content and teaching approach essentially revitalised the project management program at the University of South Australia. The thinking within this paper is thought to be of universal value to all project management education providers. It is thought that education providers of project management can be informed from the author's experiences as documented in this paper. The hope is for all education providers to deliver well informed high quality project management graduates to industry, business and the community. The provision of effective project management education programs that provide successful outcomes is important for the profession as a whole.

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