

PROJECT MANAGEMENT TRAINING: THE ROOT CAUSE OF PROJECT FAILURES?

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Abstract: The business community and investors attribute project failure (especially IT projects) to the lack of appropriate education, training or certification for project managers. Project management scholars and practitioners argue that education, training and certification do not translate directly into project success. This article discusses the relationship between project management certification/accreditation and project management curricula in South Africa. The purpose of this research was to identify possible issues and limitations in the South African project management education system and propose a possible solution to the identified issues. The research work involved collecting and analysing information about the courses taught to project managers by most training providers registered with Project Management South Africa.

The research followed a qualitative approach using content analysis in order to find answers to the research question through the analysis of the data in a thematic way. The results indicate that project management education in South Africa is uncoordinated, covers bits and pieces and is not comprehensive enough to equip project managers sufficiently with both theory and practice. The benefit of this research is that it provides a clear overview of where South Africa is in project management training and hence provides room for improvement.

Key phrases: project management, project management education, knowledge, training, certification, qualification, curriculum

1 INTRODUCTION

Over five consecutive years leading to the 2010 FIFA World Cup, South Africa spent millions of rands on infrastructural projects such as the upgrading of roads, stadia and other structures and services in preparation for the world's biggest soccer sporting event. During that period, project managers for 2010 projects in South Africa were under the spotlight and the cost of these projects proved to be higher than originally estimated. Therefore, a lot of scrutiny went into the proficiency and capabilities of the project managers that were involved in these projects.

This increased interest in project management is not peculiar to South Africa as organisations around the world show great concern about the failure rates of projects. Research done by Marnewick (2010:5) indicated that the success rate of Information Technology projects in 2008 was 37%. This is very much in line with the CHAOS chronicles where the success rate of IT projects was 32% (Eveleens & Verhoef 2010: 30). These statistical results dating back to 2002 indicate a slight improvement regarding project success. Labuschagne and Marnewick (2009:18) indicated that there are various reasons why projects fail. The two main themes of the top four factors for failed projects were people and processes. The people theme includes the factors of communication between the team and the customers, the lack of executive support and the lack of user involvement.

In order to deal with the issues surrounding the failure rates of projects, many higher education and training institutions now offer a variety of training programmes in project management. However, most of the academic and professional training programmes may be inadequate, as they do not seem to translate directly into successful project delivery (Botha 2010:5). It can therefore be assumed that project management education, training and certification do not prepare people to deliver as effectively as expected on real-world projects. If education and training in other management disciplines help people to acquire sufficient skills to deliver on their tasks, the authors therefore feel that project management training should provide at least a baseline or a starting point from which an individual can practically contribute their project management knowledge to the real world.

Project management involves the application of knowledge and skills, tools and techniques to the management of a set of processes in a project environment in order to achieve the desired goal (Schwalbe 2010:25). Comprehensive project management education and training should involve the acquisition of knowledge, skills, tools and techniques. Project managers acquire skills, tools and techniques through training and work experience. The starting point for most project managers is the acquisition of theoretical knowledge, and most project management academic and professional training programmes require the candidates to have worked before as project

managers or at least to have worked as specialists in the areas in which they would like to manage projects (Schwalbe 2010:22). A few other project management programmes, especially at universities and colleges, may allow people who hold some undergraduate qualification (with or without experience) to study for project management qualifications. Based on the preceding discussion, it can be stated that project management education providers assume that skills, tools and techniques should be acquired somewhere outside the education and training institutions. Therefore, the question to consider is whether we can determine with certainty that training institutions provide sufficient training for project managers to enter the world of work and to apply their project management skills.

In this article, it is argued that most project management academic and professional training programmes focus on the acquisition of knowledge, which happens to be only one part of the competencies needed by project managers. Project managers must acquire not only knowledge but also the necessary skills, tools and techniques in order for them to carry out their duties effectively. How can academic and professional training institutions be assisted to provide comprehensive training for project managers?

The main purpose of the study on which this article is reporting, is to reveal the inadequacy of the training provided by academic and professional training institutions, and how this shortfall contributes to the high failure rate of projects. The study also shows that more time is needed to provide project managers with training in areas such as skills, tools and techniques. As will be shown later in Table 1, most training providers provide knowledge, a few provide tools and techniques as well, and none provide skills. It can take project managers many years to acquire skills.

The Project Management Institute (PMI) requires about 4 500 hours of skills training on real projects under the mentorship of a certified project manager before certifying a project manager as a Project Management Professional (PMP) (Project Management Institute, 2009:Internet). The use of tools and techniques requires many hours of

experience on real-life projects, hence training providers need to consider this fact when designing the curriculum for training project managers.

This article provides an in-depth analysis of project management academic and professional training in South Africa. Based on this description, an argument is made for the need to introduce comprehensive project management education that starts from an undergraduate level.

2 BACKGROUND LITERATURE

This section explains what a project manager is and what project management means and then defines comprehensive project management academic and professional training.

2.1 DEFINING A PROJECT MANAGER

A project manager is someone who is assigned by an organisation to work with project stakeholders and to manage a set of processes and resources in order to achieve the project objectives (Portny, Kramer, Mantel, Meredith, Shafer & Sutton 2008:21; Project Management Institute 2008:13). The PMI defines a project as a temporary endeavour whose output is a unique product, result or service. The role of the project manager therefore differs from that of an operations manager. The operations manager focuses on the day-to-day running of the organisational processes in order to ensure survival of the organisation. Figure 1 illustrates this distinction by showing the relationship between the product and the project lifecycles.

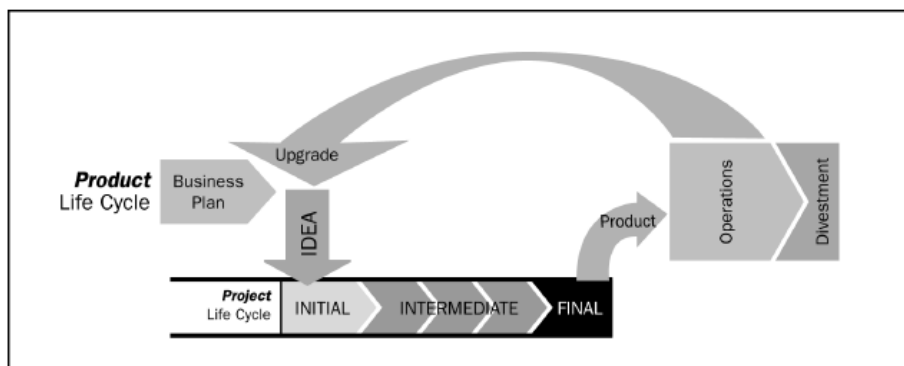


Figure 1: Relation between product and project life cycle (Schwalbe 2010:58)

The responsibilities of a project manager are clearly summarised by Portny *et al.* (2008:25) as follows:

- *Describing objectives, schedule and resource budgets:* the objectives of the project come from the business case and they need to be precise. The schedule of a project shows the timeline of each deliverable up to the final delivery of all the project objectives. Resources refer to human capital, money or something physical such as computer hardware or bricks.
- *Creating and sustaining a focused and committed team:* As the project team carries out various activities within a project, the project manager facilitates the performance of the team by ensuring its focus and commitment through the selection and development of the correct team members and managing issues such as conflict within the team (Jackson & Klobas 2008:332).

2.2 DEFINING PROJECT MANAGEMENT

Project management can be described as “*the application of knowledge, skills, tools and techniques to project activities to meet project requirements*” (Schwalbe 2010:10). Professional competency in project management is attained by combining knowledge acquired through education, skills developed through work experience, and tools and techniques learned through training (Edum-Fotwe & McCaffer 2000:13). The following paragraphs explain in detail each of the terms that define project management.

2.2.1 Knowledge

Knowledge is a fundamental factor behind a project manager’s success. Knowledge can be defined as that which is known in a particular field or in total; facts and information in a particular field (Davidson & Rowe 2009:562). There are different approaches to follow in pursuit of knowledge. The dominant approach to professional development in the 20th century was what Bines (1992:33) and others called the technocratic model. The technocratic model typically consists of three broad stages: acquisition of the profession’s fundamental knowledge base, relating this knowledge to cases and puzzles, and finally applying it through some form of supervised practice or internship (Lester 1995:46).

Exploring the meaning of knowledge acquisition, there are two main types of knowledge, namely tacit and explicit knowledge. Tacit knowledge is obtained by internal individual processes, such as experience, reflection and internalisation or individual talents. Tacit knowledge is mostly stored in human beings (Haldin-Herrgard 2000:360). Explicit knowledge can be stored in a mechanical or technological medium, such as handbooks or information systems (Mooradian 2005:109). Therefore, these main types of knowledge follow different approaches of teaching and management.

Knowledge in project management therefore refers to what the project manager knows about project management, in other words, what the project manager learned formally and what he/she has experienced in managing real life projects. The components of knowledge that the project manager should acquire and apply can be itemised as follows:

- *Project management processes*: The whole set of activities or tasks and their corresponding outputs that form part of project work.
- *Application area knowledge, standards and regulations*: a good understanding of the project application area: For example, a project manager for a software development project must have a good understanding of software development tasks and the standards and regulations that guide the software development profession.
- *Project environment knowledge*: The environment includes all the processes that involve not only the application area but also the entire organisation, the soft issues, technical issues, budget issues, stakeholder issues, and communication issues. A project manager needs the ability to manage, monitor and control the coordinated performance of the entire team and processes from the beginning to end of the project in a proficient way.

2.2.2 Skills

The second term that forms part of the definition of project management is skills, defined as the proficiency or dexterity that is acquired or developed through training or experience (El-Sabaa 2001:2). The skill set of a project manager includes technical

knowledge, leadership skills that underlie the project manager's behaviour to affect the project team positively in favour of project development, managerial skills and administrative skills (Kosaroglu & Hunt 2009:320). Apart from these listed skills, the following general skills are often relevant to project managers: the ability to lead, the ability to communicate, the ability to negotiate and the ability to solve problems (Edum-Fotwe & McCaffer 2000:13). The set of skills may differ according to the uniqueness of the project's environment as well as the people involved in the project. The people consist of stakeholders, the project sponsor as well as the project team.

2.2.3 Tools and Techniques

The third component in the definition of project management is tools and techniques. Tools refer to software programs used to automate some complex tasks. Techniques are methods for solving certain problems in given environments. Tools and techniques convert inputs into outputs. Examples would be scheduling techniques, reporting tools, estimation techniques and collaboration tools (Retief 2004:Internet). These tools and techniques can assist the project manager to be more productive if the tools are optimally utilised (Rigby 2001:6). The successful delivery of projects depends on the skills and competencies the project manager has and other variables within the project environment (Bourne & Walker 2004:231).

The preceding definitions can be summarised to mean that the career path of a project manager involves continuous education and training. Career development represents the activities associated with achieving professional advancement aligned with progressive expansion and application of individual skills, knowledge and experience in project management. A project management career path provides structure and affiliation for project managers and for all project participants (Hill 2007:10).

The education of project managers does not end with the attainment of professional certification; it leads to a lifelong commitment to professional development in project management. After certification, most project managers join project management professional associations that will provide continuing professional development for the project managers. Hence, a career in project management is a life journey (Baruch

2006:126). A career is an evolving sequence of work activities and positions that individuals experience over time as well as the associated attitudes, knowledge and skills they develop throughout their life (El-Sabaa 2001:3). Comprehensive project management education is therefore vital to the career of a project. The authors have graphically illustrated the relationships among these three terms in Figure 2.

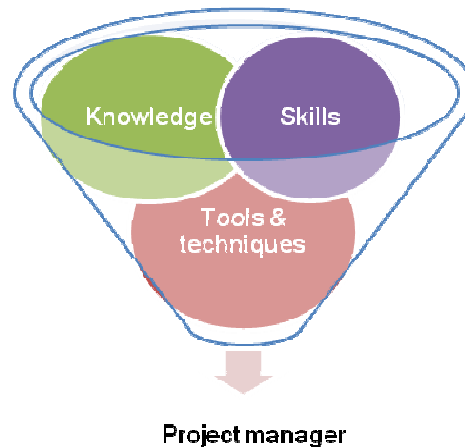


Figure 2: Application of knowledge, skills and tools and techniques (Own compilation)

2.3 DEFINING COMPREHENSIVE PROJECT MANAGEMENT EDUCATION

Labuschagne and Marnewick (2009:5) define project management education as the attainment of a holistic formal qualification, certification and training. These components of comprehensive project management education is explained as follows:

- *Qualification*: refers to qualities or accomplishments, which qualify or fit an individual for a certain position or function (Soanes & Stevenson 2008). Qualifications confer the status of a recognised practitioner of a profession or activity on an individual after completion of a qualification. Various universities and educational institutions provide education resulting in formal qualifications in the field of project management (PM). In South Africa, the South African Qualifications Authority (SAQA) must accredit qualifications (South African Qualifications Authority 2005: Internet). A qualification in this research is a

SAQA formally recognised achievement of learning as defined in Regulation 8(1) of the National Standards Body (NSB) (Government Gazette 1998: Internet).

- *Certification*: means to confer recognition to an individual or organisation for meeting an established criterion. In the context of PM, it refers to the skills, knowledge and competence of a person. Both the PMI and Association for Project Management (APM) have certifications whereby people can be certified as professional project managers (Crawford 2006:6). According to Wang (2002:7) and Gedansky (2002:4), the project management professional (PMP) certification of the PMI contributes to the fact that PM is a profession.
- *Training*: according to Sloman and Philpott (2006:242), training can be defined as learning activities that will result in acquisition of skilled behaviour. For example, training in the use of a scheduling tool will result in the acquisition of skilled behaviour in project planning. In project management, training differs from ordinary education in the sense that training focuses on gaining a skill while ordinary education focuses on the acquisition of knowledge through remembering facts and understanding concepts (Tabassi & Bakar 2009:473). On its website, the PMI offers a global list of approved training providers (also called registered education providers (REP)) and their courses. To be a REP, education providers need to comply with specified requirements that include quality assessment of the courses. Project Management South Africa (as stated on their website www.pmisa.co.za) and the APM (Association for Project Management 2006:7) provide the same service.

Given the rationale followed by Marnewick and Labuschagne (2009:11), a direct correlation can be drawn between the knowledge, skills and the tools and techniques and the qualification, certification and training that academic and professional training providers offer. Therefore, to offer comprehensive education, means that a project management academic and professional training institution needs to consider offering a comprehensive curriculum that provides the theoretical knowledge in project

management as defined in the requirements for a qualification, and that it should offer training and work experience. This implies that the failure rate of project in South Africa will decrease.

3 METHODOLOGY

A qualitative research methodology was followed to seek illumination and understanding of which institutions provide what type and level of academic and professional project management training in South Africa. This methodology was selected in favour of a quantitative methodology as the researchers wanted to gain an in-depth understanding of the current state of project management education. A quantitative research methodology would have been limiting as it focuses mainly on the relationships between various sets of facts (Bell, 2007:7; Creswell 2010:145).

Within qualitative research methodology, various research methods exist, such as interviews, content analysis, observation and action research (Altrichter, Kemmis, McTaggart & Zuber-Skerritt 2002:127). Content analysis was used as the research method. Content analysis is useful when the research purpose is best answered through the analysis of the data in a thematic way (Cameron & Price, 2009:23). A pre-requisite for successful content analysis is that the research question must be clear and specific: does the lack of comprehensive project management academic and professional training contribute to the high failure rate of projects?

The following process was applied by the researchers to gather the necessary information:

Firstly, a list of fifty-two accredited Project Management South Africa (PMSA) registered Education Training Providers (RETPs) was sourced from the PMSA website and the July/August 2009 edition of the professional magazine of PMSA. The choice of the providers is based on convenience sampling where readily available providers were those registered with PMSA.

Secondly, the relevant information was loaded into a Computer-Assisted Qualitative Data Analysis (CAQDAS) software package to analyse the supporting documentation. The CAQDAS package that was used is ATLAS.ti version 6. Most of the CAQDAS

packages provide the same functionality, and usage is based on the personal preferences of the researchers.

The CAQDAS package enables researchers to code the documentation for analysis purposes. Coding allows researchers to test the relationship between issues, concepts and themes and to develop broader or higher order categories (Lewins & Silver 2007:22). Coding also facilitates the development of a detailed understanding of the phenomena presented by the data (Atherton & Elsmore 2007:65). Coding is influenced by various factors, for example the research aims, the kind of data as well as the depth of the analysis (Lewins & Silver 2008:23). Codes can be generated inductively or deductively (Mangan, Lalwani & Gardner 2004:566). Inductive codes imply that salient aspects are defined within the data and deductive codes are done based on predefined areas of interest. The researchers used inductive codes to prevent bias towards any predefined areas of interest.

Coding was used to investigate relationships between the courses offered by each of the PMSA-registered institutions, such as certificates, diplomas and degrees at various levels, namely introduction, intermediate, advanced, honours, and masters. The analysis investigated relationships such as the curriculum covered, the duration and the actual number of hours, and practical training on tools and techniques. The coding was done in accordance to the themes identified earlier, i.e. knowledge, tools and techniques as well as skills. This was done to ensure alignment between theory and practice.

4 RESULTS

The first section of the content analysis focused on knowledge as it is a fundamental factor in the success of a project manager. The focus of the offerings by the RETPs is on certificates (63%) followed by diplomas (6%). A mere 2% of all the offerings are formal education leading to post-graduate degrees. Twenty-nine percent of the RETPs do not offer any courses or programmes related to knowledge and there are no undergraduate degrees offered in South Africa. Figure 3 is a graphical representation of the analysis.

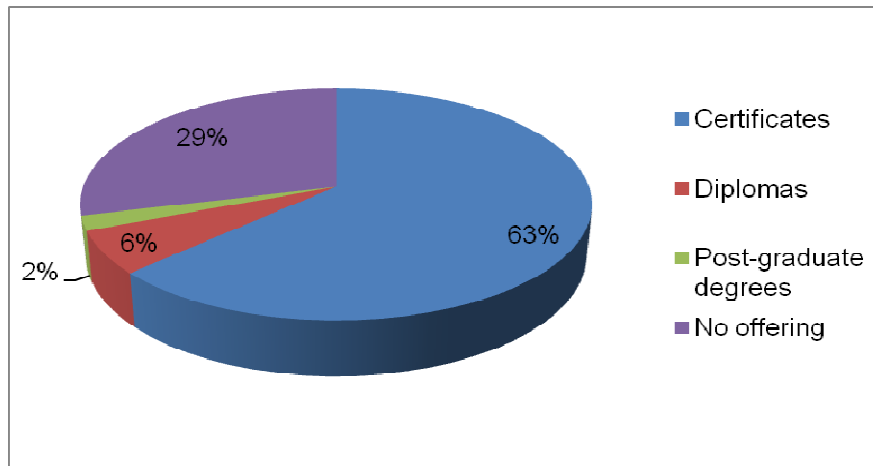


Figure 3: Percentage of RETPs offering theoretical knowledge

The offerings are focusing on the knowledge areas of the Guide to the Project Management Body of Knowledge (PMBok® Guide) as well as PRINCE2. The focus is a general understanding of project management per se as well as the processes involved within the knowledge areas. Some institutions offer focused training such as quality management or a focus on the core knowledge areas of time, cost and scope management. The offerings provide the basic knowledge that is expected of a project manager but without the skills and ability to use tools and techniques, the project manager is doomed to fail.

The second theme focuses on training related to skills transfer. As per the definition, a skill is the proficiency or dexterity that is acquired or developed through training or experience. Only 2% of the RETPs claim to do skills transfer. This is clear from the analysis where most of the training courses are offered over a period of one day to six days. It must be noted that skills cannot be transferred during such a short period. It can be concluded that skills are not addressed by the RETPs and as such is a serious issue that needs to be addressed.

The third theme analysed the offerings of the RETPs regarding tools and techniques. Fourteen of the 52 or 27% RETPs offer courses focusing on tools and techniques. Most of these offer specific courses on the use of Microsoft Office Project 2007. Only

three of the 52 RETPs provide a comprehensive solution, i.e. training in knowledge, skills and tools and techniques.

Table 1 provides a summary of the findings and it can be concluded that the training solutions provided by the RETPs are not addressing the three terms.

Table 1 Summary of the conclusions

No.	Research question (Theory based on literature review)	Findings (Practice based on interviews)
1	RETPs provide knowledge	Mostly true
2	RETPs provide skills	False
3	RETPs provide tools and techniques	Partly true

5 RECOMMENDATIONS

There is currently no single international standard for a project management curriculum despite the existence of a number of standards and methodologies such as the PMBoK® Guide, PRINCE2, APMBOK and P2M. The incomplete set of qualifications that cover some areas of project management and leave others is the result of a lack of an acceptable international standard or guideline for project management education. A comprehensive curriculum covering the theory of project management, application of the theory to develop project management skills in various tools and techniques, and provision of training to develop the necessary experience would go a long way to address the skills problems in project management.

In order for any profession to grow, it requires a full academic curriculum with a sound theoretical, practical and research focus. In the case of project management, the general assumption is that people only qualify to do project management education after they have acquired an undergraduate qualification in some area of specialisation. For example, engineers believe that only engineers can manage engineering projects. Likewise software developers believe that only software developers can manage software development projects. However, many project management professionals believe that it is better to leave the specialised professionals such as engineers and

software developers to do their work, and to assign project management to trained project managers.

A balanced curriculum that takes care of both the technical knowledge and the project management knowledge would make sense. The proposed curriculum would take students right into project management from the first year of tertiary education to the final year. Such a curriculum could be structured in such a way that during the first year all the project management knowledge areas and processes are taught. The second year could then teach advanced concepts in the knowledge areas, introduce the concepts of project governance, and programme and portfolio management. The third year could allow the students to specialise into their intended areas such as engineering, software development, and others. The fourth year could then be used to place students in industry to gain work-based skills.

Current project management curricula as shown from the research findings discussed in this article generally lack the practical component of the profession. It would therefore make sense to include practical laboratories in project management courses. There are two possible approaches for the provision of practical experience, either using simulation software with case studies, or some industrial internship training for periods ranging from six months to one year in the industry in which the student would like to specialise. Figure 4 illustrates the proposed curriculum path for a four year professional bachelor's degree in project management. The figure only shows the project management components and institutions could add other modules according to the requirements of their specific qualification.

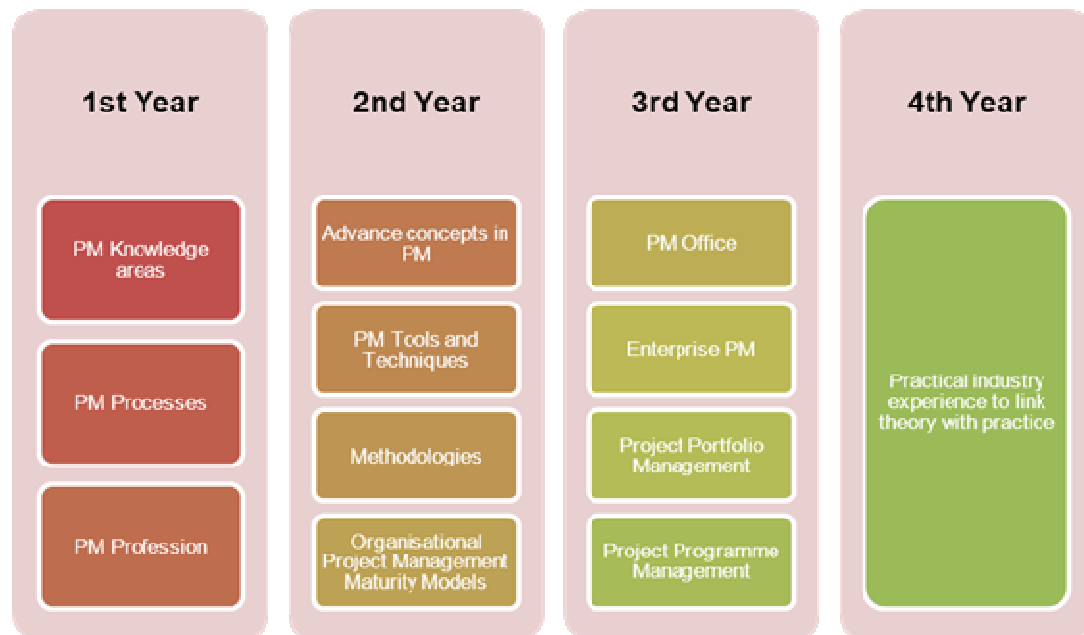


Figure 4: Proposed four year project management curriculum

A curriculum as suggested, will furnish the industry with project managers that will have the necessary knowledge, skills and mastery over the tools and techniques. The problem highlighted by research indicating that people and processes are the main contributors with regard to project failure can then be addressed through a well structured curriculum.

6 CONCLUSION

The aim of this article was to propose a possible solution to the apparently inadequate education system that project managers go through. While the authors are aware of the lack of an international standard for project management practice and education, the article discussed the fundamental building blocks of a project manager's career and went on to propose a comprehensive curriculum for project management education as a possible solution.

The article proposed a new approach to the training of project managers starting from an undergraduate level. There is currently no university or college in South Africa that offers an undergraduate degree in project management. At the heart of the proposed

qualification is the work-integrated learning of not less than six months that students would have to do in their fourth year of study as shown in Figure 4.

If the medical profession can train doctors that will successfully handle human life starting from an undergraduate level through practical training to professional qualification, what would be so complex about project management that would make it difficult for people to be trained to manage projects successfully and save the millions of rands currently lost in failed and challenged projects.

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