

Programme Management in Postgraduate Research Contexts— The Critical Importance of Project Management Application 2022/2023

Hendrik Francois Conradie, Strinivasan Soondrasan Pillay
Durban University of Technology, Durban, South Africa

Programme management is an important management approach and instrument applied internationally to advance the attainment of policy objectives. In this paper public sector programme management has been analysed, with a view to understand to what extent programme managers could derive benefit from integrating project management principles and knowledge. The paper is partially based on the theoretical foundation of the first author's 2020 doctoral thesis. The second author contributed insights from programme management experience in a public sector tertiary academic context. The authors convincingly argued that postgraduate research contexts can benefit significantly from the mentioned theoretical framework. The paper starts off with theoretical perspectives on public sector programme management. The importance of project management principles is subsequently emphasised, culminating in an *integrated programme management framework*, where the main aspects of the *Project Management Body of Knowledge* principles are incorporated. Finally, pragmatic and practical application of the theoretical framework—and how it assists to overcome complexities—is discussed. The researchers followed a qualitative approach in the meta-theory tradition, where thematic content data analysis resulted in some of the research findings (in the form of the integrated framework). Pragmatism as research tradition found expression in the application to postgraduate research contexts.

Keywords: public sector programme management, integrated programme management framework, project management principles, Project Management Body of Knowledge (PMBOK), new meta-theoretical public administration framework, pragmatic postgraduate research programme management

General Orientation

This paper is partially based on the first author's doctoral research, submitted to Nelson Mandela University in 2020, as well as on the experience of a public sector programme manager at a public university (Durban University of Technology), as second author. The paper is transdisciplinary in nature, traversing the public management, strategic management, operations management, programme management, and project management spheres.

The contribution espoused and promoted in this paper is that wherever public sector programme management takes place, it is critical to embed and integrate project management principles (from the Project

Hendrik Francois Conradie, Ph.D., Honorary Research Associate, Faculty of Management Sciences, Durban University of Technology, Durban, South Africa.

Strinivasan Soondrasan Pillay, Ph.D., Head, Department of Management, Durban University of Technology, Durban, South Africa.

Management Body of Knowledge—PMBOK) in programme initiation, planning, and execution. The new theoretical framework (new knowledge) displayed in this paper—and its application in postgraduate research contexts—indicate a comprehensive case that this research served to apply relevant literature in a novel way. This meta-theoretical research—with then pragmatic application—could enhance the work in public organisations, policy development, and programme planning/execution.

The paper is kick-started by a theoretical analysis of the current importance and relevance of public sector programme management. The importance and application of project management principles in public sector programmes then is emphasised, culminating in an *integrated programme management framework*, where the main aspects and principles of the *Project Management Body of Knowledge (PMBOK)* are incorporated. The authors eventually recommend *project-based integrated programme management* as crucial to achieve success in public sector programmes, specifically in postgraduate research contexts.

Research Design and Methodology

As indicated above, theoretical texts (secondary data) pertaining to programme and project management have been analysed by the authors, complemented by pragmatic and practical contributions from an evaluative perspective in postgraduate research contexts. The key research question that is responded to in this paper is: *In postgraduate research contexts, to what extent is it possible and advisable to utilise project management principles and knowledge in public sector programme management?*

The researchers followed a qualitative approach in the meta-theory tradition, where theoretical analysis and thematic textual analysis resulted in research findings, in the form of an integrated programme management framework. The development of the latter theoretical framework was one of the main outcomes of the first author's doctoral research, after data analysis was performed with vigour. Relevant qualitative coding practices were utilised in analysis and interpretation of data. Data categories and emergent themes have been identified from a reduced data set, as part of the first cycle of coding. The categories and themes closely correspond with the outcome of the first cycle of coding, ensuring that a clear and logical line of analysis is demonstrated, where there is no move away from the data generated initially. The emergent themes were thus linked into an integrated model. Advanced data analysis—with establishment of hierarchies and interpretation (final cycle of coding)—was employed to link emergent themes into a meaningful whole. The emergent themes were identified from comparison and analysis of relevant scholarly texts.

The authors contributed to utilisation of pragmatic research traditions and indicated how important project management principles are in the practical management of post-graduate research programmes.

Theoretical Perspectives on Public Sector Programme Management

As broad approach to this research has been the necessity for innovation in the public sector, as a fundamental point of departure, Bekkers, Edelenbos, and Steijn (2014, p. 242) highlight the journeys of innovation on which several public organisations have embarked in the 21st century. These authors go beyond a focus on modernisation of public services and processes—an idea often dominant in the *New Public Administration* literature—to emphasise the need for legitimate government and public organisations, and the need to invest in linking capacities. In a discussion of societal challenges and co-creation, self-organisation, and meta-governance, these scholars reported that governments are increasingly looking at relevant coordinating mechanisms such as markets and communities that can be used to allocate public values and the corresponding

services, programmes, and projects. The changes in public administration roles and functions are accompanied by practical implications and challenges to innovation. Social and community innovation practices are manifestations of the civil self-organisation referred to by Bekkers et al. (2014). These should be linked to new (meta) governance models that are being considered, as societies, their governments, and public sectors wrestle with new and complicated challenges.

Qing (2016, p. 55) advances the view of programme management as a novel and growing application of management that “enables multiple, inter-related projects to be managed collectively”, in contrast to traditional project management where projects are managed individually and in isolation. Qing suggests that the importance of programme management is increasing, particularly in the public sector. Qing applied social network analysis to explore ways in which collaboration is affected by the organisational affiliations, project grouping, and physical proximity of partners’ personnel.

Van der Walddt (2011) supports the view that no public sector programme will be effective unless the principles, disciplines, and techniques of project management are applied appropriately. These techniques could include the application of work breakdown structures, network diagrammes, critical path methods, and Gantt charts.

Xuza and Swilling (cited in Van Donk, Swilling, Pieterse, & Parnel, 2011, pp. 263-267), in their scholarly work on institutional arrangements for local economic development (LED) implementation in South Africa, referred to the importance of stakeholders outside of government to partner with government agencies in programmes, with a view to stimulating economic development, investment, and job creation. The roles of non-governmental organisations, municipal local economic development units, development forums, donor agencies, and development agencies are explored and ways to facilitate synergies are investigated (see Van Donk et al., 2011).

In an important work on the state of strategic public management in the second decade of the 21st century, Joyce, Bryson, and Holzer (2014) offer profound insights into inter-organisational relationships and management capabilities at national and sub-national government and public sector levels. The strategic dimensions of networks, partnerships, and programme management are explored, as are strategic planning and other public management systems.

Mandell, Keast, and Agranoff (2013) suggest authorities need to recognise that “business as usual” is not good enough and that stakeholders in public sector programmes need to leverage increased outputs and innovation by the partners in their network. New rules of cooperation are required, based on reciprocity. When communities take action in their local context to address seemingly insurmountable problems a creative and strategic approach becomes vital.

Donovan, Ferreira, and O’Donovan (2018, p. 45) define a programme as a “collection of projects” that achieve a common goal or benefit. For instance, if a housing estate is being built, the purpose of the programme may be to create a residential estate consisting of 30 houses and a sports centre, in which case there are 31 individual projects within the programme. In a postgraduate research context, each research project—be that producing an Honours research report, a Magister dissertation, or Doctoral thesis—constitutes a project.

Donovan et al. (2018, p. 46) posit that a programme relates to the bigger picture and vision; it provides an “umbrella framework” under which similar projects can be coordinated. These authors suggest that programmes differ from projects in specific ways. Projects have definite beginning and end dates; programmes are ongoing for an extended period. Projects have specific deliverables; programmes may introduce change and new processes, new ways of doing things. Programmes have a broad established vision; projects are the vehicles to achieve specific goals or objectives within that vision.

Gildenhuis (2004, p. 194) mentions the importance of programming to establish an operational programme for implementation by the relevant organisational unit. The programmer or programme manager must “cast a policy into concrete terms for proper execution”. Gildenhuis further explains that a programme may comprise various projects and that a programme becomes clear and more specific when it is divided into projects. This scholar suggests that projects can be regarded as sub-components of a programme. This discussion has clarified the way in which project management knowledge is vital for successful programme implementation.

In a comprehensive text covering operational management, programme management, and administration in the public sector, Starling (2008, pp. 18-19) makes several valid points. Public managers must be effective programme managers to give effect to public policy programmes. Public policies are designed in response to specific issues that affect society, such as in the spheres of education, health, crime, or socio-economics. The pertinent point made is that efficient programme management “requires a thorough grasp of the five traditional management functions: planning; decision making; organising; leading and implementing”. It is postulated that the success of a programme depends on monitoring and ensuring that the programme remains on track towards its objectives (see Starling, 2008).

Starling (2008, p. 555) emphasises that information is data that, after analysis, is meaningful, and that a programme cannot be controlled effectively without relevant data and appropriate information. Acquired information needs to be organised properly and be accessible to the programme manager. No programme addressing postgraduate research progress can be run effectively without a proper data and information generating system with a view to plan and measure progress towards set targets.

Starling (2008, p. 394) coined the phrase “complexity of joint action” in reference to the pivotal study of Pressman and Wildavsky conducted in Oakland (USA), in which it was found that among the main difficulties of implementing new programmes is the multiplicity of both participants and perspectives, and that these two factors converge to delay and stifle administrative efforts. In the context of a programme and projects to overcome delays in postgraduate research outputs (reports, dissertations, theses), the multiple stakeholders and “multiplicity” of approaches, ideas, budgets, and even egos, are detrimental to planning and operating an effective programme.

In Starling’s work the importance of aspects relating to public sector programme management is stated and covered in separate chapters, namely: the political and legal environment; decision-making; responsibility and accountability; planning; organising; leading; human resource management and financial management. Matters of accountability and responsibility become particularly complex when several stakeholders are involved, even at an operational level, and the allocation and sharing of resources for one programme by multiple stakeholders is always challenging. Outstanding leadership skills and diplomacy are required (Starling, 2008).

A programme’s objectives and deliverables must be clear, and a comprehensive control system is required to ensure that the objectives and deliverables are realised. The following aspects, amongst others, need to be closely monitored and measured: costs; expenditure; actual progress; work schedules; quality and other performance standards (Gildenhuis, 2004, p. 216). Clearly, many variables need to be considered when planning and implementing a public sector programme, such as a programme to accelerate the throughput of postgraduate research projects whilst maintaining acceptable standards.

From the above exposition it is clear how important effective programme management is in public sector context, where the delivery of high quality public goods and services is, or should be, the aim. Programmes however cannot be delivered effectively unless projects are managed towards the achievement of the programme

goals, and in the end the strategic objectives of the organisation. Hence, it is important to drill down into utilisation of project management principles and techniques.

Utilising Project Management Principles in Programme Management

Gido and Clements (2015, p. 4) posit that a project is an endeavour to accomplish a specific objective by means of a unique set of interrelated activities “through effective utilisation of resources”. These authors identify the most crucial aspect of a project as the fact that “a project has a specific time frame or finite life span”. Completion of well-planned tasks and activities within set time frames and budgets is fundamental to effective project management practice and the meticulous execution of a well-crafted project plan usually guarantees success.

Burke (2011, p. 367) defines project management as the management of a project using project management principles and the special planning and control tools and techniques. Burke (2011, pp. 367-368) further provides the textbook definition of “the application of knowledge, skills, tools, and techniques to project activities” to meet the needs and expectations of stakeholders.

The project management discipline’s fundamental theoretical framework is known as the Project Management Body of Knowledge (PMBOK), a theoretical foundation developed by the Project Management Institute in Philadelphia, United States of America. Most project management textbooks and training courses are based on the 10 knowledge areas contained within the PMBOK (Guide to the PMBOK, 2013, p. 4).

Van der Waldt (2011) makes a beneficial conceptual contribution to public sector project management when he refers to debates pertaining to the differences between management applications in public and private sector settings. The author emphasises that, although the same principles, approaches, techniques, and methodologies are applied, the application context of the public sector differs. It is more complicated to apply the processes and procedures of project management in the public sector environment than in the private sector, due to the specific nature of government projects. Some of the unique aspects of public sector projects are listed as: political context; competency levels; unique goals; management culture; organisational culture; statutory frameworks; transparency; accountability and project customers.

In their work on the value of project management in public sector programmes, Crawford and Helm (2009) identify some salient points. In the public sector there is a real political need to satisfy stakeholders by demonstrating accountability and transparency while effectively implementing policy. Improved organisational performance requires the ability to implement and adapt to change; change initiatives generally take the form of projects and programmes. Primarily, the PMBOK Guide, PRINCE2, and Managing Successful Programmes were found to be useful in the public sector. Project management as approach provides the benefits of enhanced accountability, transparency, reporting, risk management, increased compliance, and improved stakeholder engagement—staff morale and satisfaction also improve. Public organisations are increasingly working in complex and shifting networks that span organisational and sectoral boundaries and require legitimacy of a wider range of stakeholders than in the past. Simply put, structured project management allows for continuous improvement within programmes.

Swink, Melnyk, Hartley, and Cooper (2017, p. 512) discuss the importance of project management in the context of operations management and supply chain management in the public sector. Project success factors are described as completion on time and when deliverables meet customers’, project team members’, and other stakeholders’ expectations. When procurement is planned and managed, the time factor is a critical element. Challenges emerge when delivery of required materials and services do not take place on time. Precision planning and effective execution of the procurement plan is required.

Swink et al. (2017, p. 512) cement the important project management foundation as encapsulated in the four phases of the project lifecycle in a useful figure. Increasing resource load is sensibly displayed, with the emphasis on proper, professional project planning, and precise execution. Where the advantages and disadvantages of three project organisational structures are compared (functional, matrix, and pure project), the clear importance of a project manager having full authority over a project is highlighted. The value of team members reporting to one boss is emphasised; this is in the pure project approach.

In the context of a university, city council, or municipality attempting to address a certain problematic phenomenon in society, functional and matrix structures are commonly used, simply due to the nature of the public and civil service as an institution. Officials usually work within a certain department but are then assigned to a transversal project, thus having to share their loyalty, focus, and energy amongst various priorities. Civil and public service projects are complicated due to the very nature of civil service authority and the hierarchical structure within many public entities.

Swink et al. (2017, p. 530) furthermore differ from the more traditional approach found in the work of Burke—the terms “task” and “work package” are preferred, which are synonymous with “deliverables” and “activities”, usually preferred by Burke. The authors state that large organisations could manage several projects simultaneously, often referred to as portfolio management or programme management. With programme management (portfolio management) it is always important that supply chain managers perform process improvement and relationship management strategies involving suppliers, customers, consultants, technology vendors, and other stakeholders. Such a portfolio of efforts is usually employed to execute overall organisational strategies and goals. Each project’s unique contribution must be clearly established and acknowledged. When deciding whether or not to include a particular project in the portfolio, the scholars suggest that the following aspects must be considered: the project must fit into the overall strategy; financial costs, returns, and other benefits must be analysed; feasibility and the availability of resources must be considered; and, risks and the management thereof must be considered.

In agreement with these scholars: consideration of the mentioned aspects should in fact precede the initiation of a project. The lack of project management skills within the public sector results in the poor execution of projects—no adherence to time frames and budgets, for instance.

Jiang, Klein, and Fernandez (2018) highlight the increasing attention being paid to projects in a programme context and the role of information technology as an inherent component of change initiatives within organisations. Organisations must “substantially revise management policies and procedures” to deploy information technology across multiple functional areas and over longer time horizons. In the opinion of these authors, industries, governments, professional societies, and early researchers consider prior management practices “inadequate”; they are moving toward practices that promote the integration of multiple functions, projects, environments, and stakeholders to best achieve the benefits of the “chosen change”.

In the planning and executing of project schedules, Kruger, Ramphal, and Maritz (2014, p. 296) praise the virtues of Gantt charts, a horizontal bar that visually presents the deliverables and activities to be performed, and the actual progress. A calendar time scale on a horizontal axis provides an excellent summary of planned vs. actual progress.

In an article focused on projects and cost management in the public sector by Monyane, Emuze, and Crafford (2018), the prevalence of cost overruns in public sector projects was investigated, and the importance of effective cost management emphasised. This study sought to make sense of existing cost management practices and interrogated challenges hindering effective cost management during project delivery.

In a journal report (www.ciltuk.org.uk) on a programme to improve public transport for London (TfL), focus on project delivery capability provided valuable insights into ways in which to approach such a change initiative. The programme won Office of Government Commerce and London Excellence awards. In the context of programme and project management, the key project, Project Spearmint, deliberately took a multidimensional approach, delivering important key elements: a common programme project management framework across the business, backed up by an intranet resource consisting of approximately 200 web pages and 150 management products; a notification tool that for the first time provided business leaders with visibility of the entire portfolio including project lifecycle status, thus enabling portfolio management; clarification of programme and project governance structures, including the establishment of directorate level approval boards across the business; and, design and initial delivery of supporting training—at project close-out approximately 200 project managers and 50 senior directors/managers had been trained in tailored sessions. This programme, embedding project management approaches and practices, is a case in point that illustrates that longer-term programmes are often dependent on project management as a discipline to be successful. An intranet resource contributed to the success, as did the real-time display of individual project progress within the broader programme. Programme and project governance structures were streamlined and the ongoing tailored training support made a crucial difference.

Coulson-Thomas (2016) suggests that project management might once have been viewed as a specialist branch of management for “those leading ad hoc and self-contained initiatives that do not fit into normal corporate structures and timetables”. However, more tasks in many organisations are now being undertaken as more of these projects can be of strategic significance. This author makes a case for reassessing the significance and practice of project management by posing certain questions that refer to programme governance: Are there additional project and programme governance dimensions to consider? Should directors be more concerned with them? Do the ways in which organisations are structured, governed, and managed reflect the importance of project and programme management and governance for the achievement of corporate objectives?

Coulson-Thomas (2016) further postulates that for many companies the more flexible handling of certain projects and programmes may now be an essential requirement for remaining current and relevant. The focus of many boards, their allocation of responsibilities and their monitoring and decision-making practices “should reflect the significance of projects”. Project governance, and the governance of several projects at the same time (a programme, or portfolio), is a management dimension that receives increasing attention as the world moves into the 2020s. More project managers “are having to reconcile managing upwards with the leadership of their project teams” and governance considerations need a higher priority in the development of project managers. Project management skills are viewed as a good foundation for “directorial and other governance roles”.

Burke (2011, pp. 367-368) defines project management as the management of a project using project management principles, special planning, control tools, and techniques. In the current day and age various electronic tools and instruments are available that can assist with programme and project management. In the field of project management MS Project is a well-known electronic application that can be used to enhance the planning, execution, and monitoring of projects.

The concept of a dashboard processing framework that can be utilised for the monitoring of public sector projects and programmes is known—see e.g. in the City of Cape Town Metropolitan Municipality—but not sufficiently employed. The dashboard is a computer display of horizontal bar charts that graphically indicate, at a glance, the actual progress of projects compared to planned progress; a real time user interface that assists with monitoring trends and informs decision-making. The real-time element here is important, critical, and refreshing.

Cloete (2013, pp. 112-113) describes the electronic planning and monitoring of management implementation processes in public sector organisations as project management taking place within a programme management context. Snellen and Van Donk (1998, p. 16) twenty years ago already argued that the automation of the implementation processes is transforming bureaucratic structures and processes, and that public management and administration in the new millennium will be “infocratic”, not bureaucratic.

Utilising the same principles and electronic instruments, postgraduate research turnaround programmes can be monitored. The importance of a systematic implementation strategy cannot be over-emphasised. The integrated management framework advanced in the next section includes relevant electronic solutions to enable a programme manager to continuously monitor programme/project progress in real time.

Conradie, Taylor and Shaidi (2020, pp. 49) argue that scope delineation, strict time frames, and budget control are hallmarks of effective project management and that public sector programmes cannot be effective without sufficient attention to these aspects, known as the triple constraints. In addition it is the view of these scholars that the application of the ten fundamental project management knowledge areas (PMBOK) in the initiation, planning and execution phases of public sector programmes is not only possible but important. The scholars thus propose this principle as novel public management theory, that is, new knowledge creation.

Establishing an Integrated Programme Management Framework (IPMF)

Integration of the 10 fundamental *project management body of knowledge (PMBOK)* principles and aspects in the initiation, planning, and execution phases (the programme lifecycle) of public sector programmes are presented in this *integrated programme management framework*, which is the researchers’ novel contribution to public administration theory. Important to note is that this framework (theory) has been developed bearing in mind its potential application (praxis) in the context of *postgraduate research acceleration programmes* that should be (or are) implemented by universities to combat lethargic progress—think about the delays in feedback to students by supervisors, and the cumbersome research approval and ethics clearance processes—and enhance accelerated research outputs.

In addition, note that as is the case with project management, programmes also need to be structured into phases (lifecycle)—initiation, planning, and execution. The execution phase of programmes naturally is longer term, and not short to medium term as is the case with projects.

Table 1

Integrated Programme Management Framework (Including PMBOK Aspects)

	Phase 1 Programme initiation	Phase 2 Programme planning	Phase 3 Programme execution
Stakeholder and interest group management	Who is the leading or driving stakeholder? Who will facilitate stakeholder alignment? Who are the primary, decisive stakeholders? Who are the secondary stakeholders? Who are the “owners” of the programme? Have their needs and expectations been determined? Is there a shared vision, at least to an extent?	Which particular stakeholders need to be directly involved in planning the programme, the interventions and the particular projects? Which stakeholder will facilitate and document the strategies and plans? Who will draft stakeholder management strategies and plans?	Who will monitor the planned interventions and projects? How will the planned interventions and projects be monitored? For example, by means of inspections, reporting and ongoing project meetings? Who will execute stakeholder management strategies and plans?

Table 1 to be continued

Risk management	What are the qualitative and quantitative features of risks that stakeholders may encounter if they participate in and allocate resources to the programme? Are there political risks? Are there risks related to the allocation of personnel and other resources?	Drafting of broad risk management strategies and plans that acknowledge possible risks to stakeholders.	Execution of broad risk management strategies and plans that acknowledge possible risks to stakeholders.
Scope management (including setting of objectives)	What are the main objectives of the programme? How can these objectives be achieved through interventions and projects?	Drafting of planning documentation to set out objectives, interventions, and projects. Forming project plans to include detailed project planning where required.	Execution of strategies and plans in systematic and orderly manner. Monitoring of progress via ongoing progress meetings, reports, and inspections. Real-time electronic monitoring of progress.
Quality management (including ensuring acceptable standards)	How will quality and standards specifications be linked to the objectives, goals, interventions, and projects?	Drafting of documentation and plans related to quality and standards specifications linked to the objectives, goals, interventions, and projects. Who will design these plans?	Execution of quality strategies and plans related to quality and standards specifications linked to the objectives, goals, interventions, and projects. Ongoing strategic monitoring of progress and impact—by who?
Time management	What are the time frames to be attached to specific interventions and projects?	Drafting of planning documentation with time frames attached to specific interventions and projects. Drafting time-framed project plans.	Execution of project plans. Execution of strategies with set time frames. Ongoing strategic monitoring of progress—by who? Real-time electronic monitoring of progress.
Cost management	What are the estimated cost implications of launching particular interventions and projects? How will the financing be sourced? Will funding be sustained? What are the possibilities of leveraging additional funds from stakeholders and national or international development agencies? How will the finances be managed in an efficient, non-corrupt, and transparent manner?	Drafting of budgets pertaining to strategies and project plans to ensure that cost implications of launching particular interventions and projects are documented and planned for. Specific strategies to guard against inflated tenders, including utilising private sector third parties to double-check. Draft strategies on leveraging additional funds from stakeholders and national or international development agencies.	Execute the relevant strategies and project plans as per planning documentation. Ongoing monitoring of progress and spending. Auditing. Immediate accountability and consequences in cases of corruption, fraud, price inflation. Real-time electronic monitoring of income and expenditure.
Human resources management	Which primary stakeholders' managerial staff will be cooperating in the practical implementation of the programme? Are they willing to allocate their staff to be part of the programme? If project teams for practical implementation are formed, who should serve on the teams?	Drafting planning documentation related to strategies and project plans. Attaching specific human resources to specific projects.	Execution of strategies and project plans. Ongoing monitoring via project team and other meetings where appropriate. Who will intervene when execution of programme and projects falls behind schedules, exceeds time frames, or delivers poor standards?

Table 1 to be continued

Procurement management	Which types of goods, services, and expertise will have to be procured to implement the interventions of the programme? How will such procurement be managed efficiently, avoiding corruption?	Perform procurement planning per intervention or project, as required. Independent monitoring to guard against inflated prices.	Execute procurement plans per intervention or per project. Monitor procurement. Implement strict document management system. Real-time electronic monitoring of progress with processes.
Communication s management	How will communications between stakeholders and within projects take place? For example, by means of meetings and/or reports? Who will be strategically responsible for such communications?	Communication strategies and plans as required.	Implementing strategic communication strategies and plans, in relation to internal and external stakeholders. Ongoing monitoring of communications.
Integration management	Who will ensure that the entire programme is initiated, planned, and executed in an integrated manner, where various aspects and role players are aligned and coordinated smoothly to achieve success? How will this integrated programme management take place?	Mandate and resource the programme manager. Draft the required integration strategies and plans.	Execute the strategies and plans. Ongoing monitoring to ensure that interventions and programmes run in an integrated manner.

Source: Conradie (2020).

It is crystal clear from the above how important it is for public sector leaders and managers to not only constantly be cognisant of an Integrated Programme Management Framework (IPMF) and the importance of project management principles and practices when they manage programmes—but also to actually actively apply project management practices and techniques (think of the Work Breakdown Structure, the Network Diagramme, the Critical Path Method, and the Gantt Chart) in the workplace when they manage programmes. Introduction of a real-time electronic dashboard to monitor the phases research projects would go through—from development and approval of research proposals to the subsequent data and report-writing processes—is a case in point; this can work in the management of Honours, Masters, and PhD student supervision and enhance research throughput.

Overall Research Findings, Application, and Recommendations

One of the most important conclusions from the *integrated programme management framework (IPMF)* is that a public sector programme manager needs to fully comprehend project management principles—and practice—to have any chance of being completely effective. In this vain Donovan et al. (2018) argue that standards and processes apply to both programmes and projects, but that programmes must deliver an overall outcome and benefit, whereas projects deliver concrete products or services in the shorter term. Programme managers are less hands-on, as they need to maintain a high-level view of the projects. A programme manager would usually guide and direct project managers within the programme. Programme managers have overall authority over the projects within their programme and they can move resources across projects if necessary. The programme manager will report to his/her organisation regarding the overall progress and benefits of the programme and projects. The project managers, in turn, report to the programme managers, whilst project team members report to individual project managers.

For example: When the phenomenon of slow progress by students/supervisors with postgraduate research projects is keenly observed, it becomes clear that a large part of the solution to the challenge can be found within the effective application of comprehensive public sector programme and project management practices.

Programme management at a fundamental level is important, because an effective, strategic, ongoing managerial intervention over an extended period is required. Project management is essential because, wherever projects are managed successfully, some of the main contributing factors observed are precise planning, as well as unshakeable commitment to adherence to pre-set time frames, budgets, and standards when executing the plans. It is unlikely that delays in research throughput can be resolved successfully by any university without affecting relevant and dedicated managerial competency, including successful project management. The time it takes to obtain approval of research proposals at some universities—due to administrative ineffectiveness and bureaucracy—is another case in point.

The contribution of Qing (2016) aptly highlighted recent trends towards high-order, inter-organisational relationships in the programme management context, in other words, ways of increasing the effectiveness of stakeholder collaboration in a programme management context. The notion that programmes, like projects, also have lifecycles, is valid (as indicated above), as programmes are also initiated, planned, executed, and (sometimes) closed.

When programme management in a specific context is evaluated, the point of departure should always be: what is “programme management” and what is meant by “effective programme management”? An analysis of the works of recognised international scientists assisted the researchers to identify the key characteristics and principles of effective public sector programme management and project management. The research indicated that there is no doubt that project management principles and knowledge can effectively be utilised in public sector programme management, and that it is advisable that programme managers in the public sector and, in other sectors, need to be familiar with the Project Management Body of Knowledge (PMBOK).

It furthermore is vital that any programme manager in a post-graduate context should be able to do a project-approach analysis of the aspects that are important, with a view to let the programme succeed. It is worth noting here the seminal point raised by Conradie and Cloete (2012, pp. 42) that a programme manager must always remain cognizant not only of the importance of quality decisions (decisions that can actually practically be implemented), but also the overall imperative that implementation as such remains key, performed within quality parameters, time frames and budgets. Some of the main aspects that should, for instance, be highlighted during a project-approach analysis are:

Risk Management

The following aspects put the success of post-graduate research programmes at risk: lack of student capacity and commitment; research students being confused by lectures on research theory and methodology that are presented in such grandiose manner and language by academics (the latter who perhaps are pseudo-intellectuals, since they are not able to convey wisdom in comprehensible words); parent-child and immature attitudes of research supervisors towards their students, where the student is seen as the “learner”, with the supervisor the teacher and in charge; cumbersome and arduous administrative processes in relation to the consideration of research proposals by committees; unnecessary as well as unwise comments/feedback by academics to students, which in fact demoralise and discourage students to complete their research projects.

Stakeholder Management

The student as client and primary stakeholder should be afforded the required respect during the entire potential research endeavour, and should not be exposed to incomprehensible research theory explanations, authoritarian, or incompetent supervisors, and lofty committees who nit-pick and shoot down students’ work just

to come across as intellectual. Supervisors (especially novice supervisors) need to be coordinated and managed properly, to avoid a result where they wreak havoc with students' research endeavours.

Scope Management

Students need to be guided—at the start of the research process—towards researchable and viable research topics, where there is potential alignment with the main research questions/s and the design/methodology; so that students do not start off with non-starters and research projects that cannot succeed.

Quality Management

Overkill in the adjudication of research proposals at e.g. post-graduate diploma, Honours, and Master's level permanently puts some students off research, forever.

Human Resource Management

The utilisation of incompetent research supervisors has been identified as a big problem.

Time Management

This perhaps is one of the biggest obstacles in succeeding with a post-graduate research programme: that there are insufficient structure and time frames in such programmes.

Conclusion

The novel *integrated programme management framework* can be useful not only to leaders, managers, and administrators in the public education sector, internationally, but also in other sectors where programmes are planned and executed. In this paper public sector programme management has been analysed thoroughly, with a view to understand to what extent programme managers could derive benefit from integrating project management principles and knowledge. The benefits of successful public sector programme management could be plentiful and substantial, and the IPMF concept certainly should be applied in post-graduate research programmes, with a view to provide better services to students, increase throughput, and improve research outputs.

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