

UNIVERSITY OF KWAZULU-NATAL

**INFORMATION SYSTEMS
RESEARCH METHODOLOGY CURRICULA**

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School of Education

College of Humanities

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DECLARATION

I, Brian Walter McArthur declare that:

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ABSTRACT

The academic discipline of Information Systems (IS) is relatively young and its history is sprinkled with debates about identity and various quests to differentiate itself from related disciplines. Research in IS reflects these diverse quests, with a historically dominant quantitative tradition and an emerging qualitative and critical research paradigm. The formal research preparation of IS students is the phenomenon of interest, viewed from a curriculum perspective.

This study explores intended and enacted research methodology (RM) curricula at the postgraduate level in South African public universities. The study is located in the interpretivist paradigm and was conducted in three phases. The first phase, comprising document analysis of formal handbook entries and module outlines, informed phase two, which was an eight week online virtual focus group discussion involving 12 RM lecturers across eight universities. The third phase involved site visits to two purposively selected, contrasting cases of RM curricula and included seminar observations, interviews and material analysis. An analytical framework, based on the curriculum analysis work of Lattuca and Stark (2011) and Posner (2004), informed analysis of the data.

Content and thematic analysis of intended RM curricula yielded key themes which informed the analysis of cases. These themes are paradigmatic orientation, pedagogical orientation, linkage of the RM module to the research project and stakeholder orientation. Additional themes, namely, lecturer identity and the disciplinary identity of IS, were identified in the analysis of cases and emerged as key constructs in explaining the diversity of RM curricula in IS.

Specific instantiation of a curriculum is conceptualized as a product of the interactions between the relative agency of the identities of the RM lecturer and the disciplinary culture. A model (identities in dialogue) and a matrix (RM structure-agency) have been developed to depict the specific RM curriculum identity produced through the interactions between the components of the constructs RM lecturer identity and discipline identity. The thesis thus build new theory, drawing from the case data to illustrate the explanatory power of the model and matrix. Furthermore, the thesis argues for the influential role of RM curricula in shaping research choices and the resultant influence on the evolving identity of IS as a discipline.

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LIST OF ABBREVIATIONS

ACM	Association of Computing Machinery
AIS	Association for Information Systems
ASSAF	Academy of Science of South Africa
BoK	Body of knowledge
CHE	Council for Higher Education
CoP	Communities of practice
CoP&K	Communities of practice and knowledge
CP	Credit point
CS	Computer science
DP	Duly performed
DSR	Design science research
HEQF	Higher Education Qualifications Framework
HoD	Head of department
ICIS	International Conference on Information Systems
ICT	Information communications technology
ICT4D	ICT for development
IFIP	International Federation for Information Processing
IS	Information systems
IT	Information technology
JAIS	Journal of the Association for Information Systems
JIT	Journal of Information Technology
JMIS	Journal of Management Information Systems
MISQ	Management Information Systems Quarterly
MO	Module outline
PhD	Doctor of Philosophy
PLD	Problem literature data
RM	Research methodology
SPSS	Statistical Package for the Social Sciences
TAM	Technology acceptance model
TIMSS	Trends in International Mathematics and Science Study
TLR	Teaching and learning regimes
UG	Undergraduate
UK	United Kingdom
US	United States
UTAUT	Unified theory of adoption and use of technology
WTP	Ways of thinking and practicing

Prologue:

Conference conversations

The annual Information Systems (IS) conference is well under way, and academics from local universities are enjoying the evening social on the pool deck. The topic of conversation is the role of research methodology (RM) modules in preparing students for research, which then contributes to the identity of the discipline in the long run.

“Surely we have an obligation to teach the full range of approaches in IS research in a balanced, representative way that is fair to all”, claims Lyn. “For Honours RM modules, we cover the positivist, interpretive and critical paradigms and the range of methodologies and methods associated with them. It is vital that students are introduced to all (or as many as possible) research approaches and strategies so that they can choose the appropriate approach in relation to their research problem. Of course, this poses huge challenges in finding an appropriate academic to present the RM modules”.

“Ah, but there’s the rub!” rumbles Philip, his voice rising as it gets into gear. “It troubles me that we spend so much time and energy discussing paradigms, but are blithely unconcerned whether the research that we undertake is of any relevance to the IT industry, or more importantly, to our developing society at large. We are still very much like the ancient priests acting out a tedious ritual to predict the weather... and the means have become more important than the ends”.

Frank is listening intently to the rising intensity of the discussion. “I completely believe, as research methodology lecturers in IS, that we must preach what we practice rather than trying to be a Jack-of-all-approaches. I focus on teaching my students, in the best possible way, the methods and techniques that I know will best develop new knowledge. These are the very methods that I use in my own research. I would frankly feel like a hypocrite if I were to present a session on, for example, the case study approach within the qualitative tradition when I deeply believe that this is not the best way to develop new knowledge. The quality of evidence

from such an approach, in my view, does not stand muster. The top rated IS journals are my guiding lights – they generally publish material that is advancing the frontiers of IS theory, based on the quality of the evidence in their empirical work. It is clear to me that the RM lecturer should be the best researcher available.”

“I do respect and accept the fact that you own your position as a strong technician of research in the quantitative tradition; however, this does not answer the issue of social relevance.” Philip stares ruminatively at his glass of pale ale. “What is the real value of research which statistically shows that, ticking all the ‘quality of evidence’ boxes, perceived ease of use of a technology is not as powerful a predictor of software adoption as perceived usefulness? Practitioners have no use for semantic niceties – how much better if research could show the benefit of an innovative technology to a rural community, even if the quality of evidence is not as strong.”

Gary shifts uncomfortably in his chair, swirling the remaining wine in his glass in the sunlight. “I hear what you say, Philip, but, for me, quality of evidence is paramount. I believe that we have to maintain quality standards in whatever research approach we take. Otherwise, the strong traditions of scientific rigour in the discipline would be replaced by poorly conceptualised and executed studies that were obsessed with social application at the expense of rigour. We have historically emphasised rigour in order to gain legitimacy as a discipline”.

Lyn’s eyes flash brightly as she sips from the tall wine glass in her hand. “I agree with both of you on the issue of maintaining rigour in the research we do and teach but take exception to the broad claim that only the quantitative way allows for rigour. I emphasise to students that we need to demonstrate methodological care in the qualitative methodologies and methods. I totally believe that the strongly interpretive culture instilled at our university is on par with any quantitative rigour, just in a different way. However, I also believe that the RM lecturer should be familiar with a range of research approaches and be able to present them equitably”.

Philip stretches triumphantly. "Surprisingly, I partly agree with Lyn on this one. However, in general, research preparation at many institutions is a complete mess as they allow inappropriate research strategies to be followed (case study where a classical quantitative approach would suit the research problem perfectly) or do not follow the way of qualitative research at all. Furthermore, in allocating staff to lecture RM modules some departments often accept anyone who is willing, rather than requiring deep research expertise and experience in IS. These are my issues".

"Ah, Philip, this is where you trip over your inclusivity!" Frank's logic is impeccable. "The mess of research approach selection, as you call it, is precisely because we teach students a hodgepodge of approaches, methodologies and methods in our modules, presented by non-researchers. What do we expect? Again, I believe, and this is what I do unashamedly, that students need to be steeped in the nuts and bolts of a specific approach – I totally believe in the hypothetico-deductive scientific method – so that they can follow the approach with rigour. I also believe that we owe it to students to be upfront in how we as a department, define the discipline. I discuss five possible theoretical approaches that characterise the discipline internationally and proudly declare which of these we believe in and follow. I am not discounting other approaches – you need to choose one approach, and do it properly. This enables us to specialise in the development and extension of a cognate group of IS theories in all the research teaching rather than offering a smorgasbord of such variety that the diner is overwhelmed by choice."

"Speaking of a smorgasbord, I believe supper is served."

Chapter 1

Introducing the Study

1.1 Introduction

This study is located in the South African higher education sector where research and knowledge production have become increasingly important as part of university strategic goals. One aspect of the knowledge project relates to the preparation of students to conduct research. Typically, students attend research methodology (RM) modules as part of their postgraduate (PG) studies and continue their research studies under the guidance of a supervisor. In South Africa, PG studies refer to qualifications that follow an undergraduate degree, including a separate honours degree and the Masters (by coursework or full research) and doctoral research degrees. This study scrutinises the formal coursework aspect of the research preparation of PG students.

The prologue above was constructed from actual interview and online discussion data gathered during the study and introduces a range of design choices about RM curricula in information systems (IS), including whether to focus on a particular approach or cover many approaches, the degree of linkage to the information technology (IT) industry and society, and the challenge of choosing an academic to present an RM course. Furthermore, the role of IS RM courses in preparing students to conduct research is claimed to influence knowledge generation and, by implication, the evolving identity of the discipline.

The significant issues in research methodology having been raised by way of the prologue, this chapter serves to launch the study, providing context and background to the research problem in order to justify the choice of topic. The South African higher education research context is presented against the backdrop of international trends in knowledge production. A problem statement is formulated, leading to discussion of the purpose of the study, and its significance and value is argued. This is followed by an outline of the context of IS as a discipline and an overview of the extant literature on the topic. The research questions driving the study lead in to a brief consideration of the theoretical framework adopted and the research design followed in addressing

these questions. Ethical considerations and an overview of the chapter structure of the thesis are followed by some brief concluding remarks.

1.2 Background

In South Africa, research on the knowledge project is substantive, including several government reports on PG research. For example, Council for Higher Education (CHE) reports and publications emphasise throughput, time-to-completion and drop-out rates and dissect various aspects of the blockages to throughput, such as supervisory capacity, although little attention is paid to the role of research training (Council for Higher Education [CHE], 2009; Mouton, 2007; South African Qualifications Authority [SAQA], 2013). Other CHE reports on quality assurance in master of business administration programmes highlight issues of limited supervisory capacity and recommend measures to improve these aspects (Council for Higher Education [CHE], 2004). A recent Academy of Science of South Africa (ASSAF) report (Academy of Science of South Africa [ASSAF], 2010) comprehensively documents the characteristics of Doctor of Philosophy (PhD) graduates in terms of numbers, demographics, fields, institutions, conversion rates from Master's, time-to-degree, reasons for dropping-out, supervision capacity, and employer expectations. The slow throughput, high drop-out rates, and dire shortage of PG students, especially at the PhD level, are sources of concern in South Africa (Council for Higher Education [CHE], 2009; Mouton, 2007; SAQA, 2013). In all of these reports, research education and training in the sense of formal RM coursework is hardly mentioned at all.

These emphases in research on the knowledge project in the South African higher education sector mirror some international trends. Brew (2003) and Gilbert (2009) note the increased call for improved research training of PG students, especially in the United Kingdom (UK), in order to improve throughput rates and increase output. Gilbert draws attention to the development of more structured curricula in Australian universities as a response to the call for increased research training. Moreover, several recent governmental research capacity building initiatives, particularly in the United States (US) and UK, focus on the importance of developing researchers for long-term careers in research rather than building specific research competencies (Kamler & Thomson, 2014). Thus, strong emphasis on providing generic skills, such as time

management, career planning, and project management, are at the forefront of government funding policies and related training programmes.

Within the context of PG studies in South Africa, it is widely accepted that students are required to complete at least one module on RM as part of their research preparation (SAQA, 2012). However, the curricula, that is, the form, content, sequence and manner of implementation of these RM modules and the reasons for their form and nature, have received relatively little scholarly attention. What are the perspectives, assumptions and rationale of RM lecturers relating to specific design and implementation decisions in RM modules and the potential impact on the research approaches adopted by students? These issues have been largely neglected, specifically in the discipline of IS, and remain as tacit assumptions rather than being explicitly argued and debated.

1.3 Problem Statement and Purpose of the Study

IS PG students in South African universities are, like students in other disciplines, required to complete at least one RM module, laying the foundation for their research (SAQA, 2012). Web searches indicate that there are variations across institutions as to whether RM modules are required at each level (Honours, Master's, and PhD) or whether one RM module at any level is sufficient. Advertised RM modules in IS show variations in terms of content, sequence, emphasis, and nature of implementation. Reasons for these variations are at best speculative. The multidisciplinary nature of an emerging discipline, the diverse qualification patterns of academic staff, the types of research valued in IS journals and PG work, and the form and nature of undergraduate (UG) programmes in IS are some of the possible influences on the design and enactment of IS RM modules.

Drawing on the background context in the previous section and the brief discussion of the South African context, the problem statement for this study is:

The reasons for the wide variety in content, sequence, resources, pedagogy and structure of the postgraduate RM modules offered in IS at public universities in South Africa are unknown.

In searching for answers to this research problem, the purpose of the study can be stated as follows:

The purpose of this study is to investigate the design and enactment of IS RM curricula and the range of influences on the curricula.

1.4 Rationale and Significance

The study was initially conceived in the context of my own work as I began lecturing the RM module at the Honours level in 2003. The challenges of a lecturer in IS taking up the task of preparing students to conduct research were thus initially practical and practice-oriented. Questions that dominated included finding the ‘best’ way to design and deliver the module, how best to combine different approaches to research, how best to draw on previous modules and material, and where in the sequence to begin actual work on the students own research projects. The initial focus was thus on a quest to identify best practices at other universities.

However, in the international context, the higher education sector places great emphasis on the importance of research and its significance in the economy and society in general rather than on practice. Issues of throughput, time to completion, and numbers of doctoral graduates dominate the discourse. The aspect of research preparation foregrounds the role of supervisors and the importance of generic skills and career-relevant attributes of PG students. The literature and general discourse do acknowledge the importance of training in research methods, but there is limited engagement with the nature and form of this training (Roulston, Preissle & Freeman, 2013). A recent publication by Garner, Wagner and Kawulich (2009) claims to be the first book to address RM pedagogy in the social sciences. Literature in the journals is also sporadic, focusing mainly on teaching methods and specific topics, such as teaching statistical methods and software packages, rather than considering wider issues of curriculum. Moreover, in IS the literature on the teaching of RM in general is relatively limited and even less widespread.

As a result, my original quest for best practices in the teaching of RM gradually evolved towards consideration of formal RM modules as comprising a research preparation curriculum. This broadening of the focus to the construct of the RM curriculum involved exploring formal research preparation more holistically. This study has thus appropriated the lens of a curriculum

framework to scrutinise and explore the nature and form of research preparation in the formal coursework of PG study. In doing so, it brings a powerful conceptual lens to bear on a topic that is relatively under-researched and somewhat taken for granted. Furthermore, the study considers formal research preparation in the context of its role in creating the framework for research in IS that concurrently informs practice and sharpens the identity of the academic discipline of IS. IS RM curricula prepare future researchers, thereby providing a platform for research that will potentially shape discipline identity. Improved understanding of the design and enactment of IS RM curricula may offer insight into future trajectories of IS research and the identity of the discipline.

1.5 Clarification of Terminology Used

For the purposes of this study, certain terms will be preferred over widely used synonyms. For example, the international literature uses the term course to refer to a single class taken to pursue a particular subject over a specified time frame. In South Africa, the term module has been adopted to refer to a class that normally lasts one semester or six months. Since the focus of this study is on RM modules in South African universities, the term module will be used and regarded as synonymous to course. Similarly, the term lecturer is preferred to synonyms such as educator, academic, teacher or faculty, although, depending on the context, such synonyms are occasionally used. For example, references to studies from the US that specifically refer to faculty are appropriately phrased to reflect the original context. In South Africa, the term faculty refers to an institutional grouping of disciplines, so this particular term for academics has generally been avoided.

The term postgraduate is used in this study to refer to any post-undergraduate research degree. This includes a separate Honours degree (typically one year), a coursework Master's comprising examinable modules as well as a research dissertation, a full research Master's degree, and a doctoral research degree.

1.6 Introducing the Construct Research Methodology Curriculum

In general, the term curriculum refers to a programme or group of modules leading to a qualification. Quite often, it is taken to refer only to the content of the programme whereas scholarly use of the term denotes all educational activities associated with the programme (Marsh, 2009). Although RM modules do not formally constitute a curriculum in the traditional sense of

being a programme leading to a qualification, aspects of curriculum theory have been appropriated for this study in order to provide a framework for thinking about research preparation. The concept of curriculum is used in its broadest terms, echoing Lattuca and Stark's (2011) definition of curriculum as "academic plans in context" (p. 16). Barnett and Coate (2004) claim that curricula "live in programmes and courses, educational concepts [and] disciplinary cultures" (p. 67). These authors also capture the elusive, intangible nature of curricula when they state that they "live in, and are subject to, the interpretations and intentions of those conducting curricula activities" (p. 56). Thus, curricula are not simply reduced to statements of goals, content, and assessment criteria but also permeate the minds of the lecturer as a combination of both conscious and tacit assumptions and interpretations.

The specific focus in this study is on curriculum aspects of IS RM modules as particular instances of research education and training. The broadly interpreted curriculum associated with these modules falls under the spotlight; this includes aspects such as assessment, resources (textbooks, technology), teaching strategies, and syllabi. The IS RM curriculum as a learning environment is the phenomenon of interest in this research: this includes the intended curriculum as formally represented, the enacted implementation by the lecturer, and the underlying assumptions about and rationale for the curricula.

The formally stated intended curricula serve as the starting point to understand the design of the RM modules. The intended curriculum is manifested in institutional curriculum documents, syllabi, and module outlines. Enactment of the curriculum in the learning environment serves as a second point of comparison. The enacted curriculum is best seen in the teaching and learning activities and resources used in the module. The enacted curriculum represents adaptation by the lecturer of the intended curriculum in the context of students, physical infrastructure, and institutional ethos. It is widely acknowledged that intended and enacted curricula do and should differ as lecturers adapt to specific teaching and learning contexts (Marsh, 2009).

The study aims to build a deep understanding of the structure and content of RM modules in IS, identifying possible influences on the curriculum content from the perspective of the lecturer as well as mapping assumptions about content, resources, knowledge structures, teaching, and assessment.

1.7 Information Systems Context and Background

Because this study focuses on PG RM modules in IS, it will be useful, by way of introduction, to provide a generic description of IS and an outline of some characteristics of the discipline in relation to IT, computer science (CS), and other related disciplines. More detailed discussion will be provided in Chapter 2.

According to Topi et al. (2010), an overarching statement in the Association for Computing Machinery (ACM) computing curriculum document, drawing directly from the computing curriculum document of 2005, concluded that “Information Systems focuses on the information aspects of information technology. Information Technology is the complement of that perspective: its emphasis is on the technology itself more than on the information it conveys” (p. 374). The two fields are inextricably linked and overlap, although it is clear that the IS discipline has a less technical focus on information and people, whereas IT is strongly technical. It is noteworthy that IS curricula published by ACM do not make mention of research at UG level (Gorgone, Gray, Stohr, Valacich & Wigand, 2006). At PG level, ACM have a Master of Science in IS curriculum, which is a professional qualification that has no research requirement. From the ACM perspective, IT and IS are both perceived as applied disciplines, where preparation of students for industry is the primary, if not only, requirement (Gorgone et al., 2006).

IS is a relatively young discipline, emerging in the late 1960s (Shackelford et al., 2006). As an applied discipline, it is distinct from more established and related disciplines, such as CS and software engineering. IS focuses on the analysis, design, adoption, usage, and impact of information communications technology (ICT) at both organisational and individual levels (Topi et al., 2010). It has a less technical and scientific focus than CS and, amongst a range of other names, was originally called management information systems (MIS) and later business data processing, business information systems, and informatics. IS also has a multidisciplinary nature due to the application of ICT in numerous fields of application, for example, bioinformatics, medical informatics, and community informatics, and this contributes to the shifting, ephemeral nature of the discipline’s identity.

The various disciplinary emphases that influence the nature of IS are reflected in the faculty locations of IS across South Africa. A review of the websites of the 23 universities in the country revealed that 13 offer IS programmes at PG level: five of these programmes are grouped with CS and are located in faculties of science, seven are separate from CS and are broadly located in faculties of commerce and the remaining programme is located in a social science faculty. In addition, academics in IS departments in Europe and the US have a wide range of UG and PG qualifications, with many having a predominantly CS background (Avgerou, Siemer & Bjorn-Andersen, 1999; Hirschheim & Klein, 2011). This strong CS flavour impacts directly on the perceived relevance and nature of research work in IS.

In summary, the discipline of IS is largely multidisciplinary and, as an applied discipline, also focuses on preparing students for the IT industry, with a resulting lesser emphasis on research. The variations in faculty location as well as the mix of disciplinary backgrounds of academic staff provide a diverse context for a preliminary overview of the literature on the topic of RM curricula and their underlying assumptions.

1.8 Overview of Related Literature

In general, articles from peer-reviewed journals were used as the preferred source although key conference proceedings such as AIS, ECIS, and EJB RM were also included. Non-peer-reviewed sources such as web sites and Wikipedia were excluded. Searches of the academic literature in the South African context revealed no direct discussions of RM in IS but there are a number of articles that discuss research issues with implications for RM curricula. These articles provide a sense of the specifically South African issues and trends in research and RM. Trends include advocacy of alternative approaches to the dominant positivist tradition (Roode, 2003), forays into the possibilities of grounded theory (Brown & Roode, 2004), and critical realism (Pather & Remenyi, 2005; Roode, 2003) as an alternative philosophical base as well as identification of development work and action research as core pillars of interpretive research (de Villiers, 2005). An ontological framework for IS research by O'Donovan and Roode (2002) provides a useful framework for considering IS research in general. These South African articles will be discussed in more detail in Chapter 4.

The relative scarcity of literature on IS RM teaching and, more specifically, curriculum, presents an opportunity for this study to contribute to the body of research literature. In order to do this, literature on general RM teaching and learning, and general business research methods is used to provide generic RM curriculum insights in Chapter 4. This literature is useful in supplementing the limited focus on IS RM curriculum and the relatively few articles on research and the research process, as it has indirect implications for and linkages to IS RM. In addition to this existing generic and IS-specific RM literature, the legal and policy framework for PG study in South Africa provides an influential context for an understanding of RM curricula. This is discussed in more detail in Chapter 3.

Against this background of national concerns and initiatives in PG studies, the history and nature of IS as a discipline, and the relatively limited academic literature on the RM curriculum, the critical research questions will be outlined below.

1.9 Critical Research Questions

After a range of curriculum frameworks (Barnett & Coate, 2004; Diamond, 2011; Hoadley & Jansen, 2009; Posner, 2004; Wiggins & McTighe, 2005) were considered, Lattuca and Stark's (2011) broad definition of curriculum as "academic plans in context" (p. 16) was adopted for this study. Thus in each of the research questions below, curriculum is understood to include consideration of syllabus (descriptions of content, assessment criteria) and resources (including textbooks, workbooks, guides, resource packs, with particular interest in the discourse of the texts) as well as teaching and assessment (the form and nature of deliverables, tests, assignments, exams).

RQ1 What are the intended IS RM curricula?

The focus in this question is on the formally stated curriculum as evidenced in advertised IS programmes, official templates (standardised quality assurance documents that detail a range of information about a module), web sites, university handbooks, and module outlines (MOs) at each public university in South Africa. The intended curriculum is often briefly specified in university prospectuses and is described in greater detail in the module template or syllabus prepared by the RM lecturer for distribution to students taking the module.

RQ2 How are IS RM curricula enacted?

This question seeks to explore the nature of the enacted curriculum, that is, the actual curriculum enacted by lecturers and experienced by students throughout the module. The enacted curriculum represents the adaptation of the intended curriculum in the context of students, physical infrastructure, and institutional ethos, and it may be influenced by other factors. The primary focus is on the enactment or implementation of the curriculum through assessment tasks, marking, and feedback on assignments as well as lectures, seminars, and online platforms. Clearly, actual teaching of RM sessions provides a key insight into the enacted curriculum. In addition, attention is paid to lecturers' descriptions of and rationale for the manner of enactment or implementation which may be reflected in module outlines, resource material, and assessment tasks as well as written or verbal descriptions. The enacted curriculum is underpinned by numerous conscious and tacit choices and emphases that reflect the rationale and guiding belief system of the lecturer.

RQ3 Why are the intended and enacted IS RM curricula the way they are?

This question seeks to draw out lecturers' views and explanations for the intended and the enacted curriculum. The question lies at the heart of the study and forms the core of the contribution to the body of knowledge. Lecturers' rationales for the enacted curriculum, compared with aspects of the intended curriculum, reveal underlying assumptions and influences that drive design and implementation decisions about IS RM modules. These curriculum decisions help shape the research thinking of future IS researchers and by implication, the evolving identity of IS as a discipline.

It is worth emphasising that this study does not attempt to evaluate or assess the effectiveness of the intended or enacted curriculum directly. A separate study would be needed to evaluate the effectiveness of the research preparation provided in RM modules. The focus here is on lecturers' conceptions of the curriculum and the influences driving these conceptions.

1.10 Theoretical Framing

Curriculum theory has been used to structure IS RM curricula as the phenomenon of interest into two discrete aspects, namely, the intended and enacted curricula. In addition, Lattuca and Stark's (2011) curriculum model, informed by the work of Posner (2004), has been used as an initial analytical framework in analysing the intended curriculum as evidenced in the formal curriculum documents.

Lattuca and Stark (2011) identify the following key aspects of the academic plan that require decisions by the educator:

- Purposes—the justification of the “knowledge, skills, and attitudes to be learned” (p. 4)
- Content—the “subject matter that is selected in order to convey the knowledge, skills, and attitudes” (p. 4)
- Sequence—“an arrangement of the subject matter and experiences intended to lead to specific outcomes for learners” (p. 4)
- Learners—how the plan caters for specific groups of learners
- Instructional processes—“the instructional activities by which learning will be achieved” (p. 5)
- Instructional resources—“the materials and settings to be used” (p. 5)
- Evaluation—assessing outcomes and the overall plan
- Adjustment—ongoing improvements to the plan.

The authors also construct a model of curriculum as representing the academic plan in the sociocultural context, incorporating these eight aspects as the key focus of the model and indicating a range of external and internal influences that need to be taken into account in designing and enacting the academic plan. External influences include government policy and professional associations, whereas internal influences include faculty (academics), discipline, and students.

Lattuca and Stark's (2011) model has been slightly adapted for this study by excluding the adjustment of the plan over time and by making some minor wording changes. More detailed discussion of the curriculum framework is provided in Chapter 3.

1.11 Research Design and Methodology

This study adopts an interpretive approach in seeking to understand the phenomenon of the IS RM curriculum. Methodological pragmatism (Bryman, 2006) informs the choice of research strategies and data production methods. Qualitative methods are the primary methods used. The overall design is visualised as a funnel (see Figure 1.1), starting with broad document analysis of formal curriculum documents (intended curriculum) across the South African public university sector, a virtual focus group (VFG) of all willing RM lecturers across the sector, homing in to an in-depth analysis of two universities as cases (enacted curriculum).

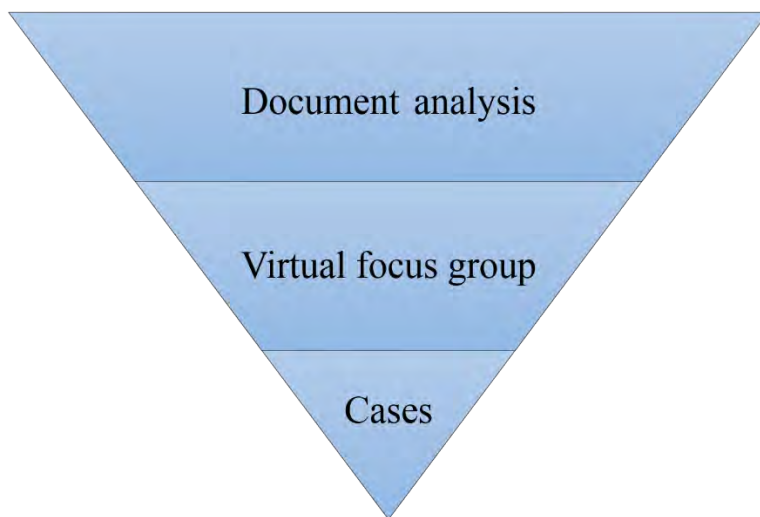


Figure 1.1. Research design funnel.

All 13 universities that offer PG IS modules in South Africa were invited to participate in the study. The lecturer(s) on the RM modules were the direct contact points as they are directly involved in planning and enacting the modules. Universities of Technology were not included in this study as research output and PG imperatives are relatively recent, and this sector has its own characteristics and is worthy of a study in its own right. Private universities have been excluded for the same reasons. The study has thus been restricted to public universities offering PG research modules on RM.

The study was implemented in three chronological phases of data production. In phase 1, official documents requested from each participating university included module templates, handbook entries, MOs, and reading lists. Document analysis of the intended RM curricula and

institutional demographic data was used to establish trends and to inform the generation of data in the later phases of the research. This analysis was also used to identify appropriate institutions to be used in detailed case analyses in order to address the question of the enacted curricula and their rationale. In phase 2, an online discussion forum of all participating RM lecturers (12 across eight universities) was run as a VFG, discussing issues of content, sequence, resources, teaching strategies, assessment, and any other topic deemed relevant by participants. This VFG enabled the sharing and discussion of content covered, assessment strategies employed, and resource material used. Principles associated with communities of practice were used to guide the operation of the VFG.

The previous phases of document analysis and the VFG were supplemented by purposively selecting two institutions as cases, based on the initial data gathered and taking into account faculty location (commerce, science, or other), PG throughput, dominant paradigmatic orientation, and best practices. The purposive choice of institutions for this final phase of data production was based on unexpected or interesting aspects that emerged during earlier phases and was also influenced by the willingness of lecturers to participate. The two cases selected for inclusion were chosen primarily because they represented best practices in different paradigms, one following a predominantly quantitative approach in the RM modules and the other a predominantly qualitative approach. Data generation strategies included seminar observation, collection of resource materials and conducting in-depth interviews with lecturers about the RM curriculum at each institution.

Data generated during the VFG sessions were captured electronically for analysis. Personal interviews were transcribed and coded. Content and thematic analysis techniques were used to identify themes in the discussion forums and the transcribed personal interviews. Qualitative research software (NVivo version 10) was used to assist with analysis of the discussion forum and personal interview data.

1.12 Ethical Considerations

The study is in full compliance with the University of KwaZulu-Natal's research ethics policy. The research design and research instruments were approved by the University Ethics

Committee. The official letter granting ethical clearance to conduct the study is attached as Appendix A.

1.13 Contribution to Knowledge

A theoretical contribution to knowledge can take a number of forms, namely extension of existing theory or building of new theory (Sutton & Staw, 1995). This study uses Lattuca and Stark's (2011) curriculum framework to structure the data analysis. Themes that were identified in the data analysis enabled extensions to the framework, adding the constructs of RM lecturer and discipline identity to the framework.

A model was developed that explains the range of influences that inform the instantiation of a specific RM curriculum at a particular university. A matrix was also developed to illustrate the relative strengths of RM lecturer and disciplinary identity in RM curriculum instantiation. These theoretical contributions may be categorised as building an initial explanation of the phenomenon of RM curriculum, using the empirical data as illustrative of the explanation.

1.14 Personal Historicality

It is usual in an interpretive study for the researcher to declare their assumptions and motivation for the study (Myers, 1997). A brief summary is provided here with greater detail available in the Epilogue. My academic qualifications include a Masters degree in English, a Bachelor of Science with major subjects Computer Science and Psychology and a Masters in Business Leadership with a focus on technology management. When I was appointed as an IS lecturer at Natal University as a relative outsider to the discipline, without majors in IS, the department of IS typically emphasised preparation of students for careers in IT, with low emphasis on research.

Despite the high emphasis on preparation of students for industry, I was drawn to research, and notwithstanding my relative lack of experience of IS research, I volunteered to lecture the RM module at Honours level. Initial reliance on the prescribed textbook closely adhered to the widely accepted practices of research and assumptions about research preparation espoused by senior colleagues. This quantitative approach, using questionnaires and inferential statistical testing, closely followed the tradition of testing existing theory in new contexts. Personal exposure to alternative approaches at seminars and workshops, especially qualitative approaches, enabled

introduction of these approaches in the RM module, but largely as counters to the predominant quantitative approach in IS.

I gradually developed my research insights and experience through co-supervision of Masters and doctoral studies, learning from senior colleagues. It is noteworthy that these colleagues were from a range of disciplines – only one had a PG qualification in IS and none had undergraduate IS qualifications.

My initial motivation for doctoral study had a strong practitioner focus. Drawing on my personal experience as a RM lecturer, I wanted to survey all IS departments in South African universities and design an ideal RM curriculum. Preliminary surveys revealed diverse practices in terms of content, dominant paradigm, prescribed textbooks and methods of assessment. This diversity resulted in a move from the dominant practitioner interest towards understanding the reasons for the variations in postgraduate RM curricula in South Africa.

1.15 Overview of Chapters

The thesis comprises a prologue, 10 chapters, and an epilogue. The chapters are briefly described below.

Chapter 2 outlines in some detail the historical quests for identity reflected in the IS literature. These quests include attempts to identify common core topics, a guiding research paradigm, distinctive methodologies or theories, and debates about the importance of industry relevance. This chapter provides the specific IS history, context, and culture that inhabits and influences the phenomenon of research preparation. Chapter 3 provides a discussion of the construct of curriculum, outlining its complexity while adopting a pragmatic definition for this study. The framework for curriculum developed by Lattuca and Stark (2011) is discussed in some detail, and the organizing constructs of the intended and enacted curricula are explained and their choice justified.

The next chapter, Chapter 4, explores the notion of a RM curriculum and the broadly related literature on the topic, with particular reference to IS. Aspects discussed include a general push towards methodological pluralism, relevance to industry and relative silence of the critical

voice. Trends such as evidence-based practice and adaptation of the systematic literature review in the IS RM literature are complemented by advocacy of alternative paradigms to positivism.

The research approach and methodology used in the study are described and justified in Chapter 5. The planned approach is compared to actual implementation of document analysis, interviews, VFG discussion, and seminar observation. The concomitant limitations of the methodology and research choices are also discussed. Chapter 6 reports on the descriptive analysis of the intended curriculum across the public university sector. Document analysis of MOs is used to identify initial trends and themes as well as to flag unusual perspectives and practices. The thematic analysis of the intended curriculum across the public university sector is continued in Chapter 7. Themes such as paradigmatic and pedagogical orientation, specialisation, relationship with IT practice, and degree of linkage of the RM module to the research project are identified as key influences on the curriculum.

Chapter 8 builds on Chapter 7, reporting on and analysing the interview, materials, and observation data from the two cases selected for detailed exploration. The comparative case analysis confirms the importance of paradigmatic orientation and degree of linkage to the research project as key influences on the RM curriculum. RM lecturer identity and agency are identified as strong influences on the design and enactment of RM modules within the constraining influence of disciplinary structure.

The various themes from chapters 6, 7, and 8 are crystallised into four key themes in Chapter 9, namely: paradigmatic orientation, pedagogical orientation, RM lecturer identity, and discipline identity. Theoretical links between these themes and the RM literature (Chapter 4) are also discussed in leading to proposed extensions of Lattuca and Stark's (2011) curriculum framework. Chapter 10 synthesises the previous chapters in identifying two core, overarching themes, namely RM lecturer identity and disciplinary identity. These themes are used as key constructs in developing an identities-in-dialogue model and a RM structure-agency matrix, which provide an explanation for the form and nature of specific instances of RM curricula. RM curricula are argued to have identities that influence and are influenced by the disciplinary identity of IS. Limitations of the research and suggestions for future research are outlined at the end of the chapter.

1.16 Concluding Remarks

This chapter has introduced the study, providing the purpose and rationale, an overview of the context, research questions and objectives, the theoretical framework, and the research design followed. An overview of chapters concludes the chapter.

The next chapter provides a detailed consideration of IS as an emerging, applied discipline, organized around several different quests in the IS academic literature to provide the background and context of concerns about the identity and legitimacy of the discipline. It is the first of three chapters which review literature on the discipline of IS, curriculum theory leading to the choice of a theoretical framework for this study and the scholarship of RM curricula. These chapters complement one another in framing the study.

Chapter 2

The Discipline of Information Systems as Applied, Emerging and Interdisciplinary

2.1 Introduction

In the previous chapter, a broad outline of the study and its context was provided. An understanding of IS as a discipline was drawn from the 2010 ACM computing curriculum document as described by Topi et al (2010), which indicates that IS focuses on the information dimension whereas IT focuses more on the technology. This simplistic yet helpful distinction will become important in consideration of where IS should focus its research endeavours—is the technology central or is the information produced by the technology of greater research interest or do both apply?

IS research continues to be influenced by research trends and issues that are reflected in both the evolution of and also the discourse on disciplinary identity. RM curricula, which prepare students to be IS researchers, exist within this historical context. Thus, an appreciation of the history of IS will inform the analysis of current RM curricula and may provide partial explanations for their diversity. Literature was limited to IS journals and conferences due to the focus on IS as a discipline. Sources that focused on both CS and IS were included due to the historical links between the two disciplines. Due to the focus on the origins and identity of IS as a discipline, no articles were excluded on date of publication.

This chapter explores the complex nature and form of IS as a discipline, charting its origins and the range of internal debates around issues of identity and legitimacy. The objective is to capture the rich complexity of IS as evidenced in journal conversations and arguments about issues such as the following:

- Is IS a discipline?
- What distinguishes IS from other disciplines?
- What is the essence of IS as a discipline?

The key themes in these debates revolve around a range of quests which took place within IS to convince both itself and the wider academic community of its status and value as an academic

discipline. The quests included searching for core concepts, defining theories, quintessential paradigms, and methodologies that are internally agreed within the discipline and externally convincing to the academic community. The primary focus of these quests was on the nature and form of IS research and knowledge generation as these are critical indicators of academic legitimacy and identity (Boland & Lyytinen, 2004).

These debates are characterised by a series of recurring dichotomies, including focus–diversity, internal–external, discipline–interdisciplinary, science–management, theory–practice, and technology–social. Quite often, the conversations argue strongly for one side of the dichotomy, for example, that IS should focus on core research topics as a means of self-definition (Orlikowski & Iacono, 2001). Responses often take the opposing position, for example, arguing that diversity and pluralism are IS’s strengths and defining character (Robey, 2003). More recently, voices have been raised in favour of inclusive approaches rather than the previous polarising views, for example, arguing for both focus and diversity as appropriate for applied disciplines (Taylor, Dillon & van Wingen, 2010). These tensions surface in the various debates discussed in this chapter, and they are central to gaining an understanding of IS as a discipline.

The chapter is organised as follows. The initial sections outline the origins of IS as a discipline and its current status, providing the context for the debates around identity as well as setting the scene for the rest of the thesis. This is followed by an outline of various approaches to conceptualising an academic discipline in general. The fragile nature of early quests is captured in an analysis of the debates on the identity crisis in IS and the prevalent anxiety discourse. This is followed by discussion of the various quests for identity definition, including the debates around core IS concepts, guiding paradigms, general IS theories, defining methodologies, and the notion of relevance versus rigour. The chapter ends with some concluding remarks.

2.2 Some Defining Moments in the History of Information Systems

The history of a discipline provides the context within which current debates and research directions are framed. The history of IS as a discipline seeking to define and distinguish itself from a number of related disciplines resonates in current research practices. This section sketches the historical context that informs current research agendas in IS.

The origins of the discipline of IS can be traced back to the 1960s, when a need arose to understand and implement the application of computers in organisations (Hirschheim & Klein, 2012). Existing disciplines that addressed this need included CS, operations research, organisational studies, accounting, and management science, but each of these provided only a narrow perspective on the broader problem of developing and implementing computing systems for organisations. System development aspects drew most strongly on CS, whereas implementation linked rather with the commercial, management and organisational disciplines. Even at this early stage of the evolution of the discipline of IS, the interdisciplinary space created between CS with its technical focus, and the social and organisational disciplines presages later debates on rigour versus relevance, scientific method versus interpretive approaches, and also academic versus practitioner focus.

Technology changes and the corresponding mind shift are identified as the primary markers in the evolution of the discipline by Hirschheim and Klein (2012). Major technology developments such as the introduction of the personal computer, networking, the Internet, and social media sparked new directions in schools of thought, research themes, and methodologies. A comprehensive account of all these technological and intellectual shifts is beyond the scope of this thesis, but a brief overview is required, as the evolution of the intellectual landscape forms the context and foundations of current IS research.

Initially named management information systems (MIS) in US business schools and informatics in Europe (Avgerou et al., 1999), the emerging field drew on hard systems theory in the US (Churchman, 1971) with its technical focus, whereas in the UK soft systems methodology (Checkland, 1981) with its social focus had a strong following. Predominantly experimental approaches were used in the Minnesota experiments in the US by Davis and colleagues, forming the basis for the emergence of the sub-field of decision support systems, showing strong links with practitioners (Hirschheim & Klein, 2012). Different emphases and ways of thinking between US and European academics were already evident.

The first International Conference on Information Systems (ICIS) was held in 1980 and the first journal, *Management Information Systems Quarterly (MISQ)*, was established in the same year. Curriculum guidelines for MIS were developed in the US by the CS-oriented ACM and independently by the UNESCO-driven International Federation for Information Processing (IFIP)

in Europe (Kaplan, Truex, Wastell, Wood-Harper & DeGross, 2004). The foundations of the academic discipline of IS were in evidence, although with different emphases in the US and Europe, and international fora such as journals and conferences provided platforms for debate. Seminal IFIP conferences under Working Group 8.2, with specific emphasis on RM (Manchester 1984), ran largely in parallel to ICIS, initially with limited intersections (Kaplan et al., 2004). The Manchester IFIP conference of 1984 had included early calls for “intensive research methods” (p. 35), such as case studies, ethnographies, and hermeneutics, in contrast to the predominant ICIS concerns with testing theory in large organisations (Sawyer & Crowston, 2004).

According to Klein and Hirschheim (2010), technology developments in the 1980s gave rise to group decision support systems as a research topic of interest, approached from an engineering worldview and with a practitioner focus at the University of Arizona and a social science approach at Minnesota. These contrasting paradigmatic orientations used different methodologies and methods, providing an early instance of the diversity within the emerging discipline. Harvard Business School research colloquia identified research methodologies in IS as a subject needing attention, resulting in the publication of three volumes on research (dealing with qualitative RM, experimental RM, and survey RM) in the late 1980s (Klein & Hirschheim, 2010). It is significant that a volume was devoted to qualitative RM at this early stage in the emergence of IS as a discipline.

Another sub-field of IS that emerged in the late 1980s was that of user acceptance and adoption of technology. Fred Davis developed the technology acceptance model (TAM) in 1989, drawing heavily on existing psychological theories such as the theory of reasoned action and the theory of planned action (Davis, 1993). TAM provided the starting point for several extensions to the theory, namely extended TAM (Venkatesh & Davis, 2000) and the unified theory of adoption and use of technology (UTAUT) (Venkatesh, Morris, Davis & Davis, 2003), but some IS scholars claimed that this basket of theories were not inherently IS theories as they drew heavily on the reference discipline of psychology (Hirschheim & Klein, 2012). Other IS scholars disagreed with this view, arguing that TAM and UTAUT were theories native to IS (Straub, 2012).

The decade of the 1990s saw IS developing further important indicators of being a discipline in its own right. The *Information Systems Research* journal was launched in 1990, focusing on both empirical and theoretical research. Several leading journals emerged in Europe,

including the *Journal of Information Technology (JIT)*, the *European Journal of Information Systems (EJIS)*, and the *Journal of Information Systems*. In 1994, the Association for Information Systems (AIS) was established as a global association with three branches in America, Europe, and the combined Africa, Asia and Pacific regions (Klein & Hirschheim, 2012). In 1997, collaboration between ACM and AIS resulted in the release of a comprehensive curriculum guide (IS97) for UG studies at tertiary institutions (Davis, Gorgone, Couger, Feinstein & Longnecker, 1996). IFIP's research methods conference in Philadelphia in 1997 declared the end of the paradigm wars and continued advocating "intensive research methods" (p. 35) from the interpretive stable as a complement to the predominant positivist emphasis on larger organisations at the ICIS conferences (Sawyer & Crowston, 2004).

The emergence of the interpretive approach to research as a viable alternative to the dominant positivist tradition is evidenced by the range of European IS academics, such as Walsham and Galliers, writing in the major IS journals. Social theories such as Giddens' structuration theory, Latour's actor-network theory, and Habermas' critical social theory were increasingly adopted for use in PG studies and journal research. The sub-field of ICT for development (ICT4D) emerged with a focus on technology use and adoption in the developing world context with topics that demanded consideration of context (Unwin, 2009).

Furthermore, specialist journals began to emerge with focus on particular sub-fields of IS, such as e-commerce, strategic IS and ICT4D. According to Klein and Hirschheim (2012), the number of journals with a specific or indirect focus on IS increased substantially, leading to the publication of the Senior Scholar's Basket of Journals, chosen by leading IS academics as the core IS journals. The journals that were consensually voted as core to IS were *MISQ*, *Information Systems Research (ISR)*, *JAIS*, *Information Systems Journal*, *EJIS*, and *Journal of Management Information Systems (JMIS)*, although *JIT* and the *Journal of Strategic Information Systems* were also identified as equivalent and worthy of inclusion (Hirschheim & Klein, 2012). *MISQ* had already established itself as the gold standard for publication of articles in IS, but the audience was now increasingly IS academics rather than the practitioner community (Introna & Whittaker, 2004). *MISQ Executive* was established in 2002 with a specific focus on executive managers. ACM followed this trend by establishing *Communications of the ACM* with an exclusive focus on short, practitioner-oriented articles. However, these practitioner journals were quite clearly something of

an after-thought as recognition within academia depended primarily on publication in the academic journals—acceptance by peers trumped acceptance by the IS practitioner community (Introna & Whittaker, 2004).

In 2004, yet another sub-field emerged with Hevner, March, Park and Ram's seminal article in *MISQ* on the practice of design science research (DSR). Hevner et al. (2004) argued for a fourth paradigm in the form of DSR, where research involves the design, development and prototyping of an IT artefact, defined very broadly to include models, methods, constructs, and software instantiations. DSR builds on earlier traditions of focusing on the development of IS systems, but adds an engineering emphasis of specific rigour while broadening the notion of what is developed beyond a specific software product or system.

This selective history of IS provides the context for discussion of the quests for identity by IS scholars below. The historical background is not intended to be comprehensive, but provides some examples of the multiple strands and diversity that characterise IS. Technology is a core element, yet IS has typically included the following sub-fields: design and development of the software (CS residue), acceptance and use in organisations, specific types of systems (decision support systems, group decision support systems), and social impact (social sciences). Variations in emphasis across continents as well as diverse interests within institutions characterise the discipline. The predominant positivist tradition operates alongside more recent interests in interpretive, mixed method, and critical approaches. A primary focus on academic acceptability is offset by concerns to address industry-relevant topics and to acknowledge the industry as part of the audience of research.

2.3 Current Status of Information Systems

The academic discipline of IS is relatively young. Originally closely linked with CS, IS has been characterised as a socio-technical, applied discipline with possible locations in science, commerce, or even the social sciences and as a discipline well suited to interdisciplinary research (Sawyer & Crowston, 2004). Research in IS reflects this diversity, with a historically and currently dominant quantitative tradition and an emerging qualitative and critical research paradigm (Chen & Hirschheim, 2004).

IS has established itself as an academic discipline (Hirschheim & Klein, 2012) with a global presence. Hirschheim and Klein describe the extensive presence of IS in North America and the United Kingdom and its strong representation in Europe, the Scandinavian countries, Australia, New Zealand, and South Africa. According to Hirschheim and Klein, IS has been widely adopted as the discipline name although variations such as informatics are still used in various institutions. The discipline has a global professional association (AIS), with regional committees and conferences in the various regions and a membership of thousands. A wide range of journals publish articles on IS topics, including the highly regarded *MISQ*, *ISR*, *JMIS*, and *J AIS* in the US and *EJIS* and *JIT* in Europe. According to Topi et al. (2010), a globally recognised UG curriculum, IS 2012, has been constructed with widespread academic input on the foundations of earlier global curricula published in 1997, 2002 and 2005).

Is it, perhaps, lack of presence in the top ranked universities that has led to an ongoing preoccupation with the identity and legitimacy of IS? Alternatively, does the explosively dynamic nature of technology contribute to a sense of instability in a discipline that focuses on the design and development of software systems, as well as their adoption, use and impact? Does this volatility evoke a need for the definition of a coherent core (knowledge, theory, methodology, or paradigm) that will offer stability to IS academics? Or is it the grey nature of the interdisciplinary space between the technical aspects of technology and its social application and use that creates a sense of being ‘between’ rather than being somewhere? Or is it perhaps a combination of all these factors? These questions about academic identity permeate the history of IS, but need to be contextualised within the construct of an academic discipline.

2.4 Conceptions of an Academic Discipline

General conceptions of the construct of an academic discipline have undergone substantial changes over the past few decades. Barnett (2009) captures the essence of this change from disciplines seen as “powerful ways of knowing the world” (p. 6) in the early twentieth century to recent debates about generic skills, student voice, and vocational influences. Disciplines are thus always “in-the-making” (Barnett, 2009, p.7). Leary’s (1992) conception of an academic discipline as a family of local metaphors captures this sense of flux within a relatively coherent framework of metaphors.

Donald's (2002) generic understanding of an academic discipline is helpful in linking disciplines to knowledge production. She constructs the meaning of a discipline as comprising an accepted body of theory, generally agreed research strategies and techniques for replicating and validating knowledge. This understanding focuses exclusively on the cognitive dimension, and Donald outlines a cognitive framework for disciplinary thinking, including concepts, conceptual structure, methods of inquiry, and processes for validating knowledge. In later work, Donald (2009) still argues for the primacy of cognitive structure in identifying academic disciplines but increasingly acknowledges the sociological dimension, including the relative power or status of the discipline in the institution and the degree of social convergence within the discipline.

Becher and Trowler's (1989) classic text on academic disciplines uses the metaphors of tribes and territories to characterise disciplines. They establish a structural typology of disciplines along continua of hard or soft and pure or applied, based on typical knowledge forms, providing a simple mechanism to classify disciplines. IS, it could be argued, falls into the applied quadrant, with a more contested placement in the hard-soft continuum. Some IS departments aspire to the methods and rigour of the hard quadrant (seeking universal laws, largely quantitative, causal, and objective), while others would claim a home in the soft quadrant (qualitative, acknowledging contextual specifics and subjective). However, Becher and Trowler's essentialist typology also includes a social dimension in the disciplinary practices of the tribes. Academic disciplines can be classified as convergent or divergent, based on their practices (Becher & Trowler, 1989); convergent practices are reasonably uniform, are widely accepted as standard and are claimed to strengthen the tribe.

The earlier structural emphasis has been extended by foregrounding the role played by context in Trowler's (2008) socio-cultural approach. Trowler's construct of teaching and learning regimes (TLR) provides a more nuanced way of looking at the practices of the tribes than that afforded by the convergent/divergent axes. In addition, the interplay between structural aspects and the agency of academics is emphasised. Thus, Trowler's eight "moments" (p. 185) of TLRs provides a powerful metaphor of the interplay between the deterministic forces of the structures on the one hand and individual agency on the other. He acknowledges the agentic power of academics in interaction with disciplinary culture; lecturers thus have their own disciplinary and personal identities, influenced by their academic training, PG study, work experience, and

supervision record, which interacts with institutional and disciplinary culture. Some of Trowler's TLR moments would also have an individual aspect, including tacit assumptions, implicit theories and recurrent practices. These notions of disciplinary and personal TLRs will play an important role later in the thesis where specific institutional RM curricula are explored.

An associated construct is Hounsell and Anderson's (2009) ways of thinking and practicing (WTP), which is based on the socio-cultural approach. According to Hounsell and Anderson, specific disciplines are characterised by particular WTPs; these WTPs inform and inhabit the delivery of disciplinary subject content, often in an implicit and assumed rather than explicit form. In the discipline of IS, for example, the UG curriculum is generally delivered as a body of knowledge, a set of skills, and a collection of procedures and processes to be mastered in readiness for application in industry (Byrne & Lotriet, 2007). According to Byrne and Lotriet (2007), in the South African UG curriculum, minimal attention is given to critical engagement with these WTPs nor is there any attempt to engage explicitly with the body of empirical research that underpins the disciplinary knowledge. They aver that the introduction to research and research thinking at PG level affords the opportunity for students to engage, for the first time, with the research thinking that has been used to construct the body of IS knowledge. Northedge and McArthur (2008) argue that academics in the discipline have a duty to guide students into the WTPs of the discipline; ideally, this should occur throughout the UG and PG curricula but should at the least be an integral part of the research curriculum. Northedge and McArthur describe this as providing support for students as they participate in the disciplinary discourse and notes that it comprises cognitive, intuitive, and ethical dimensions. The teaching challenge is to make the implicit thinking processes explicit for students, to make them "interim practitioners" in order to engage with these WTPs (McCune, 2009).

A different conceptualisation of IS as an academic discipline is provided by Boland and Lyytinen (2004). They argue that a discipline's identity continually evolves from the research choices made by researchers, and that this disciplinary identity simultaneously influences the research thinking of novice researchers through the existing body of research knowledge, being influenced in turn by the research choices of current IS researchers. By implication, novice researchers are introduced to the WTPs of research in IS and inducted into the TLRs of the

discipline in RM curricula, influencing the research that they will conduct in future and thereby shaping the future identity of the discipline.

The various conceptions of the construct of an academic discipline (cognitive, structural, and socio-cultural, that is TLRs and WTPs) and the claims of Boland and Lyytinen (2004) form a general backdrop to the consideration of IS as a specific instance of a discipline. The structural perspective categorising IS as applied or pure, convergent or divergent is limited. The cognitive and sociocultural perspectives offer glimpses of the evolving nature of the discipline, as the WTPs and TLRs are in dynamic interaction with current research practices. In this regard, Boland and Lyytinen's emphasis on the myriad research choices of researchers across the discipline indicates the shaping influence of current research practices on the discipline's identity. RM modules play a role in informing these research choices, especially those made by novice researchers.

The history of the discipline and its several quests to assert its identity are indicators of some of the TLRs and WTPs that inhabit research thinking and research preparation in IS. As the evolution of the intellectual landscape forms the context and foundations of current IS research, an overview of the various identity debates is required.

2.5 The Case of Information Systems

The identity debates in IS have been characterised as an identity crisis. This negative perspective forms the context of the various quests for identity in the history of the discipline and is discussed in the next section.

2.5.1 The identity crisis in information systems and the anxiety discourse

Banville and Landry's (1989) classification of IS as a "fragmented adhocracy" (p. 56) is a significant milestone in the discipline's self-reflective dialogues about identity. According to Banville and Landry's taxonomy, disciplines could be rated accordingly to three factors. The first factor, strategic dependence, refers to the extent to which researchers rely on each other for recognition, rewards, and reputation. The other two dimensions are strategic task uncertainty (conceptual coherence) and functional dependence (technical and procedural cohesion of methods). Banville and Landry rated IS as low on all the categories. The somewhat negative connotation of the classification as a fragmented adhocracy, used to describe a specific phase in the emergence of a discipline, may have been internalised by the IS community of scholars and

used as a spur to identify a unifying thread to counter the haphazard disjointedness evoked by the classification. This thread ranges from epistemological aspects, such as research topics, core concepts, methodology, paradigm, and practice (i.e. the cognitive conception of a discipline; after Donald, 2002) to political dimensions such as stakeholders and audience, echoing Trowler's TLRs (2008) and Hounsell and Anderson's WTPs (2009).

The seminal article by Orlikowski and Iacono (2001), published in the premier IS journal *MISQ*, exemplifies the prevailing anxiety, albeit humorously, by making reference to a popular television series in the title "Desperately Seeking the 'IT' in IT Research". Firstly, choosing to refer only to IT research reveals one dimension of the identity issue, that is, distinguishing IS from the broader field of IT. Secondly, the article claims that IT research lacks a conceptual anchor and proposes the IT artefact as this core, unifying construct. According to Orlikowski and Iacono, any system or product that relies on IT in any way qualifies as an IT artefact; IT research should thus focus on the design, development, use, and impact of these IT artefacts and not stray into peripheral, non-IT focused topics.

Benbasat and Zmud (2003) extended Orlikowski and Iacono's (2001) proposed conceptual anchor, but used the phrase "identity crisis" in their journal title. The authors proposed a classification system to monitor the boundaries of IS as a discipline, aiming to minimise errors of inclusion and exclusion. Their article sparked a multiplicity of responses, supporting, opposing, and redirecting the suggested classification, and it signalled the start of the 'great conversation' about identity within the global IS academic community. In 2006b, King and Lyytinen published a collection of articles representing this conversation in a book entitled "Information Systems—The State of the Field", and *Communications of the AIS (CAIS)* ran a series of articles on the issue of the core of IS in 12 response and commentary papers. The underlying anxiety is captured in excerpts from some of the titles: "Crisis in the Field?" (Hirschheim & Klein, 2004), "Nothing at the Centre?" (Lyytinen & King, 2004), "Climbing the Tower of Babel" (Klein & Hirschheim, 2006), and "Cleaning the Mirror: Desperately Seeking Identity" (Robey, 2006). The "anxiety discourse" (King & Lyytinen, 2004, p.539) had begun. Special issues of *J AIS* in 2006 and *MISQ* in 2008 continued this discussion.

The following sections focus on the various specific quests in the literature for core concepts, a guiding paradigm, distinctive methodologies, IS-specific theories, diversity, and

relevance, as bids to define the discipline and quell the abiding anxiety discourse. Each of these quests is directly related to aspects of research and knowledge generation, thus providing the necessary context for the focus on research preparation in this study. Table 2.1 summarises the various identity quests rooted in research.

Table 2.1	
<i>Summary of Quests for Discipline Identity</i>	
<u>Quest</u>	<u>Research Focus</u>
Common core	Research topics built within clear boundaries
Guiding paradigm	Acceptance of predominant research paradigm
Distinctive methodologies	Basket of accepted research methodologies
IS-specific theories	Theories developed by researchers within the discipline
Diversity	Acceptance of diverse research topics rather than quest for common core concepts
Relevance	Industry and societal relevance as unifying feature of research

Some of these quests are in opposition to each other, for example, seeking a common core and encouraging diversity whereas others appear to be complementary, for example, guiding paradigm and distinctive methodologies.

2.5.2 The quest for core concepts

One IS identity quest focuses on identifying core concepts or constructs that can be agreed by the IS community as defining the discipline. These core concepts would define the boundaries of the discipline, distinguishing research that falls within and without the discipline, as well as differentiating the discipline from other disciplines. The focus is on concepts or constructs that uniquely define IS (Donald, 2002).

The concept of the IT artefact (Orlikowski & Baroudi, 1991) was the first major attempt at discipline definition using a core concept. They define the IT artefact somewhat vaguely as “those bundles of material and cultural properties packaged in some socially-recognisable form such as hardware and/or software” (p. 19). Despite or perhaps because of this vagueness, the definition suggests that the IT artefact is more than simply a technological product and hints at the cultural

aspects that may be embodied in the technology. According to these authors, any research that focuses on the design, development, use or impact of an IT artefact would fall within the discipline of IS. The range of dimensions is broad and diverse, including technical and social aspects, but they claim that the central focus on an IT artefact serves as the conceptual anchor.

Orlikowski and Iacono (2001) later identified five views or conceptions of the IT artefact, using grounded theory to extract these perspectives from a decade (1991-1999) of *ISR* journal articles. These views, although dated, have strong echoes in the current research approaches in IS. The tool view regards the IT artefact as an unproblematic ‘black box’ that performs a task, for example, productivity software; the proxy view focuses on a specific, surrogate aspect, for example, user perceptions of the technology, rather than the technology itself; the ensemble view emphasises the interaction between people and technology, taking a broader view of the system of organisational, individual, and social aspects of the IT artefact; and the computational view comprises the design and development of algorithms and code dimensions, with strong CS roots. Finally, in the nominal view the technology is absent or peripheral, for example, looking at Chief Information Officer compensation. Orlikowski and Iacono were concerned that too much so-called IT research strayed into the nominal category.

The arguments of Orlikowski and Iacono (2001) were extended by Benbasat and Zmud (2003) who argued for a nomological net around the IT artefact as a means of avoiding errors of inclusion (including non-IS forms of research) and errors of exclusion (excluding core IS research studies) in research. Their primary intention was to define a clear boundary between IS research and non-IS research as a means of identity definition, in order to resolve the so-called identity crisis in IS. Thus the IT artefact is more specifically delineated, including design and development (managerial, methodological, and technological practices and capabilities), use, and impact of the central artefact. As Benbasat and Zmud express it, an “intimate” (p. 56) relationship with the IT artefact is a non-negotiable requirement.

The rather esoteric notion of a nomological net had the effect of eliciting a range of varying responses from the IS academic community. Alter (2003) proposed “work systems” (p. 499) as an alternative conceptual anchor. This far broader conceptual anchor had the effect of widening the boundaries of IS to include research topics at the periphery of Benbasat and Zmud’s (2003) boundary. Saunders and Wu (2003) proposed a compromise position with “IT systems in

organisations” (p. 560) as the conceptual anchor, once again narrowing Alter’s proposed boundary. They identified three broad strands of enduring research areas in a) the development, implementation and use of IT, b) strategic IS, and c) group decision support systems. Iivari (2003) represented a Scandinavian perspective in advocating IS development to be the distinguishing feature of IS as a discipline, seeing other proposed core concepts as transitory, in keeping with the dynamic nature of technology.

The difficulty in settling on a common core unifying concept to define the discipline was recognised by Klein and Hirschheim (2008), who noted that a variety of sub-fields had each developed their own common research interests and approaches, generally operating in research silos at conferences and in journals. Klein and Hirschheim acknowledged the need to recognise these sub-fields, in contrast to previous attempts to find a single conceptual anchor that cut across them. They argued for an IS body of knowledge (BoK) as the unifying foundation of the discipline, comprising an integrated conception of the various silos, their so-called Rosetta stone for understanding IS. This BoK, modelled loosely on Iivari’s (2003) software engineering BoK, included technical, normative/ethical, theoretical, and applicative knowledge. Klein and Hirschheim also identified the relative weakness of normative and applicative knowledge in IS as a major concern; most IS research was predominantly positivist, focusing on technical or descriptive/explanatory theory. Their advocacy of the importance of relating theory to practice recognises the applied nature of the discipline and negates the common view of applied research as “unacademic” by the more traditional academic disciplines (Klein, 2003, p. 10) Furthermore, Hirschheim and Klein claimed that the dominant positivist research approach in IS had failed to deliver any general, unifying theory. They pointed out that theories commonly cited as IS theories, such as TAM (Davis, 1993) and UTAUT (Venkatesh et al., 2003) borrow heavily from the reference discipline of psychology as well as belonging only to the sub-field of user perceptions, in other words, taking Orlikowski and Iacono’s (2001) proxy view.

Some IS academics argue that the common core research topics in IS can be identified in the widely accepted computing curricula (George, Valacich & Valor, 2005). This would ostensibly form an IS BoK, but the substantial disconnects between the ACM UG curriculum 2012 and the research focus of major journals have been well documented (Hirschheim & Klein, 2012). Other authors have used journal publications as an indicator of stable research sub-fields. Sidorova,

Evangelopoulos, Valacich and Ramakrishnan (2008) applied latent semantic analysis (a form of factor analysis) to all articles published in *MISQ*, *ISR*, and *JMIS* in the period 1986–2006. They identified five stable sub-fields, namely, how IT systems are developed and the interactions between IT and the individual, group, organisation, and the market. The sub-fields are more generic than those identified by Saunders and Wu (2003), but clearly development of IS and IT interactions in groups and organisations are common to both studies' findings. Taylor et al. (2010) widened the journal net to include all IS journals in the period 1986 to 2005 and conducted co-citation analysis to identify stable research terrains. Their results show a focus on development, implementation, and use of information systems, IS strategy and business outcomes, as well as group and decision support. This confirms the findings of Saunders and Wu. In addition, Taylor et al. identified two emerging research domains in the form of IS education and IS as a discipline. They indicated a decline in technical focus from a positivist perspective in both domains and a concomitant increase in an emphasis on social aspects of IS, largely from an interpretivist perspective.

In summary, early quests to define IS in terms of a common core concept such as the IT artefact have given way to perspectives that, while acknowledging the diversity of research topics, attempt to find multiple research streams or sub-disciplines that more accurately represent the discipline. Recent studies of journal publications focus on what the practice is rather than arguing for normative ideals to strive for.

2.5.3 The quest for a guiding research paradigm

The second quest in the search for identity entailed identifying and adopting a guiding paradigm for research. IS research has traditionally been positivist in nature, drawing substantially on its origins in CS. For example, a typical journal article in the 1980s by Baroudi and Orlikowski (1989) analysed the problem of statistical power in management information systems. Furthermore, a seminal article by the same authors in 1991 identified positivism as the dominant research approach across all journal articles published in *MISQ* from 1983 to 1988, while significantly arguing for the value of diverse paradigms in IS, specifically advocating interpretive and critical approaches as complementary to positivist approaches. Chen and Hirschheim (2004) followed Orlikowski and Baroudi's (1991) methodology but widened their approach to analyse

publication trends in *MISQ*, *ISR*, and *JMIS*. The overall trend still showed quantitative studies as predominant (60%), especially in North America, with qualitative articles at 30% (relatively strong in Europe) and mixed approaches at 10%. Landry and Banville (1992) classified IS researchers into three broad categories: mainstream navigators who fitted into the dominant positivist stream; unity advocates, who were also primarily positivist but were seeking some form of unifying core concept or theory; and the knights of change, who were advocating alternative approaches such as interpretivism. The authors concluded that mainstream navigators enjoyed legitimacy within the dominant paradigm, which offered widespread acceptance and scientific credibility in the form of the scientific method. The minority knights of change, although few in number, were influential in terms of reputation and status within the discipline.

The interpretive cause was initially advocated by Walsham (1995a, 1995b, and 2006), writing from Judge Business School in Cambridge in a series of papers that argued persuasively for the value of the approach as well as providing practical implementation advice. This work resulted in many paradigm war responses. A seminal article in *MISQ* by Klein and Myers (1999), entitled “A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems”, confirmed general acceptance of interpretive approaches within the IS academic community. Several subsequent journal analyses charted the increased proportion of interpretive approaches (Chen & Hirschheim, 2004; Klein & Myers, 2001). In addition, key articles by Mingers (2001, 2003) took up the cudgels for multiple methods as an appropriate approach for IS researchers. More recently, in 2011, Myers and Klein published an article in *MISQ* advocating the critical approach, using a similar process of outlining core principles as in their earlier interpretivist manifesto (Klein & Myers, 1999). These principles for following a critical approach in IS research formalised a number of earlier studies that exemplified cases using a critical approach. Trauth (2006) and Howcroft and Trauth (2008), representing some of the latter day knights of change, had earlier published a series of studies using a critical feminist approach. The philosophy of critical realism has also been advocated as a possible alternative to the dominant positivist and emerging interpretive paradigms in IS research (Dobson, 2002; Mingers, 2004; Mingers, Mutch & Willcocks, 2013). In *MISQ*, Zachariadis, Scott and Barnett (2013) argue for a critical realist approach to mixed methods, and Wynn and Williams (2012) outline principles for conducting critical realist-based case study research in IS. The debate rages on.

In summary, disciplinary identity in IS has largely been vested in the positivist paradigm, with predominantly quantitative studies which test, confirm, and extend existing theories such as TAM and UTAUT. Widespread acceptance and derived legitimacy characterise this paradigm, the scientific method requiring little or no justification. The knights of change have advocated the legitimacy and relevance of qualitative studies, mixed method approaches, and an emerging critical perspective, but the powerful journal bastions continue to favour traditional quantitative research. Publishing traditions are typically slow to change but perhaps they accurately reflect positivism as an abiding common thread of research in IS.

2.5.4 The quest for distinctive methodologies

As expected, research methods widely used in IS research broadly align with the various paradigmatic shifts in research thinking discussed in the previous section. Experiments were common in the early days of IS research and surveys were widely used as a substantive part of the positivist approach (Chen & Hirschheim, 2004). Case studies were advocated as the research method of choice in the initial stages of the interpretivist surge of interest (Cavaye, 1996; Walsham 1995b) and remain popular today. Action research is another methodology that enjoyed periods of advocacy (Baskerville, 1999) as representing applied research in tandem with practitioners. In general, IS has borrowed generic research methods and methodologies from the research methods basket in broad alignment with the paradigmatic approach being used.

Nevertheless, Nandhakumar and Scarbrough (2011) claim that research methodologies and methods are not sufficient in themselves to define the discipline of IS. Several authors make the point that methodologies and methods should be chosen according to the nature and form of the research question (Paul, 2002). In this way, the discipline would be characterised best by the “problems that we study” (Paul, 2002, p. 175). The reverse of this is noted by Baskerville (2008) in his critique of the dominant positivist tradition in IS; thus research problems are often chosen in accordance with the basket of research methods ‘approved’ by the leading journals. Researchers thus constrain their choice of possible research questions in order to achieve an improved chance of publication (Baskerville, 2008). Rigorous use of widely accepted methods such as surveys and detailed statistical analysis are the touchstone of publishability, irrespective of the research problem being tackled (Davison & Martinsons, 2011). It appears that obsession with rigour is a common characteristic of disciplines that are trying to prove themselves to others as the research

methods aligned with the positivist tradition have been refined and strengthened in terms of statistical rigour over time.

The tendency of IS research to be “monistic” or “methodologically inclusive” (p. 289), that is, to use a limited set of research methods, mainly from the positivist paradigm, is critiqued by Davison and Martinsons (2011). They claim that this methodological monism limits the possibility of significant contributions being made by research to the rich complexity of organisational computing. They advocate methodological pluralism but locate the use of multiple methods in a team context rather than in individual research. In their view, although senior IS scholars espouse the value of the full range of methods, actual practice is characterised by a relatively narrow use of primarily positivist methods. Davison and Martinsons identify the training of IS researchers and editorial policies as contributing to the narrow use of research methods. They maintain that positivist methods are well established, safer, and often quicker to execute than interpretivist or critical approaches. Acknowledging that each research method has its own strengths and weaknesses and that a specific research method will reveal certain aspects of the phenomenon while simultaneously concealing others, they advocate a holistic approach, using multiple methods on the same research phenomenon in the context of team research. They also acknowledge the difficulty in building a culture of methodological pluralism, citing the reality of tenure, journal editorial policies, historical dominance of positivist methods, and recruitment and training challenges. They acknowledge that it is unreasonable to expect researchers to be expert in all possible methods, but suggest that, at least, all PG training should include detailed coverage of the strengths and weaknesses of the full range of methods available.

The notion of methodological pluralism as advocated by Davison and Martinsons (2011) explicitly involves the use of multiple methods from approaches other than traditional positivism. Similar arguments were made for multi-method approaches by Mingers (2003), also with the explicit intention of considering methods from interpretive and critical traditions. Venkatesh, Brown and Bala (2013) address the issue of mixed methods approaches in IS, more precisely defining mixed methods research as the use of a range of methods from both quantitative and qualitative approaches. They develop detailed guidelines for conducting mixed methods research in IS, including consideration of when this approach is appropriate as well as how to draw and validate meta-inferences from both paradigmatic approaches in developing theory. As with

previous *MISQ* manifestos on the interpretive approach (Klein & Myers, 1999) and the critical approach (Myers & Klein, 2011), a framework of principles and procedures for best practice of mixed methods research has been formulated by Venkatesh et al. for discussion and implementation.

In a different vein, Iivari (2007) identified DSR as potentially an IS-unique methodology. Hevner et al. (2004) and Gregor and Hevner (2013) argue that DSR represents a new paradigm of research. However, Hassan (2014) critiques DSR as a script that is followed in the execution of the research rather than a methodology that is adapted and guided by the specifics of the research problem.

In summary, the quest to find a defining methodology for IS has been a muted one. IS scholars generally agree that a specific methodology or basket of research methods is insufficient to define a discipline. Claims for DSR as a defining IS methodology or paradigm form an exception. By contrast, strong claims for methodological pluralism as an ethical, appropriate strategy in tackling complex research problems in the technology–organisation–social intersection argue for improved relevance and usefulness.

2.5.5 The quest for information science-specific theories

The fourth quest in the search for identity entailed defining IS in terms of the theories that have been developed specifically in the discipline. In 2003, a series of editorial opinions by Weber, as editor-in-chief of *MISQ*, focused attention on issues of theoretical contributions made by journal articles. Weber (2003b) claimed that IS articles generally extended and tested theories instead of building IS-specific theories. He noted, moreover, that many research articles focused attention on new technologies and their implementation challenges, topics which were often of short-lived academic interest, rather than identifying deep, substantive, generic IS problems that could be used as anchors in the research landscape. He also identified excessive theory borrowing from reference disciplines such as management, organisation science, and psychology as a practice which undermined the development of novel, IS-specific theories, claiming that IS theories could contribute to strengthening the identity of IS as a discipline.

As a leading influence on the form and nature of IS research via *MISQ*, Weber (2003b) conceptualised a theory as an account that attempts to explain or predict the relationships between

constructs associated with the perceived research phenomenon. He further argued that the phenomena or research topics engaged with were critical to establishing a distinct IS identity, thereby gaining academic legitimacy from the broader academic community (Weber, 2003a). He also claimed (2003a) that these research topics should be IS-specific, regarding the various calls to focus topics on the IT artefact (Orlikowski & Iacona, 2001; Benbasat & Zmud, 2003) as too generic. In his view, the scope and nature of the research problem being tackled directly impacted the form and nature of the contribution to knowledge, as well as the broader issues of academic identity and legitimacy (Weber, 2003c). Weber (2003b) also acknowledged the tenuous nature of theory due to contestation about underlying paradigmatic assumptions and the variations in formality of theory forms, ranging from highly mathematical to rich stories. He acknowledged his own positivist training and orientation to research as a possible limitation to his thinking and language but urged researchers to strive towards ever greater parsimony of formal expression of theories. Rich stories that are deeply located within the research context (qualitative studies) were regarded by Weber (2003c) as powerful starting points in the eventual evolution of a concise, elegant expression of a more generic theory. He called for greater emphasis on purely conceptual, theoretical articles as part of the thrust to build a theoretical core for IS. Weber (2003b) listed specific ways that authors could contribute to theory building and development in journal articles, including introducing new or refining existing constructs, articulating new or refining existing associations between constructs, and articulating boundary conditions of new or existing theories.

King and Lyytinen (2006) provided a respectful though robust response to Weber (2003a) in their *JAIS* 2006 editorial, aiming to seek a compromise position on the role of theory building as a means to strengthen IS disciplinary identity. They disagreed with Weber's view that a theoretical core is a necessary condition for identity and legitimacy, and they raised a number of contentious issues around ownership of theories adapted from other disciplines and the IS discipline as potentially comprising multiple sub-disciplinary theories rather than general, underlying theories. They reiterated their earlier position (see King & Lyytinen, 2004) that strong, empirical results that are salient to IT practice should be the immediate and medium term goals of researchers in the discipline and that theories would evolve naturally from these strong results.

These opposing yet potentially complementary positions on the role of theory in relation to identity made normative claims about the intellectual routes that researchers should follow. By

contrast, Gregor (2006), working in the Australian IS community, analysed the structure or ontology of the various theories actually used in IS. According to Gregor, theories in IS could be classified into three broad categories: a lens to view and explain the world (e.g. frameworks), a statement of relationships between constructs that can be tested (e.g. TAM), and prescription for practice (e.g. models for development of software). The first two broad categories correspond to traditional notions of theory associated with the interpretive and positivist paradigms, but the third touches on the form of theory related to an applied discipline attempting to inform practice. Gregor further distinguishes between meta-theories (theory of theories), grand theories (i.e. sweeping, general, substantive theories needed for identity), and mid-range theories (limited application in specific context, often appropriate for an applied discipline). IS had no meta-theories and few grand theories (arguably Davis's TAM, 1989; Delone and McLeans's (1992) IS success model, 1996), with the majority being mid-range. Gregor also notes that the choice of a specific type of theory for a study has paradigmatic and epistemological implications in terms of research methodologies and methods and forms of analysis; thus, working towards extending TAM as an explanatory and predictive theory would require survey methods and probabilistic analytical tools.

A related study by Hovorka, Germonprez and Larsen (2008) explored explanation types in IS research, using a decade (1991-2001) of *ISR* and *MISQ* journals articles as data. The authors identified five distinctive types of explanation used in IS research:

- Descriptive / structural, including frameworks and models;
- Covering laws—covering all cases deductively;
- Statistical relevance, with probabilities dominating the explanation of correlation and causal relationships;
- Pragmatic, related to application of technology in practice; and
- Functional, covering specific products/outputs of research.

Although it could be expected that the last two categories would dominate in an applied discipline, Hovorka et al. found that statistical relevance was the dominant form of explanation in the journals analysed, with relatively limited use of pragmatic and functional explanation. The authors characterise the dominant form of explanation as an explanation sketch, where a few selected variables are analysed in relative isolation, using probabilistic statistics to validate claims. This

implied criticism of much published research also confirms Weber's (2003b) concerns that many articles made limited, piecemeal contributions rather than building general, grand theories and thus made no substantive contribution to identity building.

The initial plea by Weber (2003b) was for researchers to generate substantive, general IS-specific theories as the disciplinary cupboard was bare. Other IS scholars have argued that there are already substantive IS-specific theories in existence. For example, Straub (2012) in an *MISQ* editorial argues the existence of a number of "native" (p. iii) theories, including TAM (Davis, 1993, adaptive structuration theory (DeSanctis and Poole, 1994), the IS success model (Delone & McLean, 1996, and the task-technology fit theory (Goodhue & Thompson, 1995). These theories belong only to Gregor's (2006) explain and predict type. Straub defines a native theory as explaining a specifically IS phenomenon, even if theories from other disciplines such as Giddens' structuration theory are supplemented with IS-specific constructs.

Weber (2003b) had also expressed concern about the wholesale borrowing and use of theories from the reference disciplines of psychology, sociology, organisational science and management. Nevertheless, a number of scholars have theorised principles whereby this borrowing of theories and constructs is conducted reflexively and with mutual benefits to IS and the 'lending' discipline. Truex, Holstrom and Keil (2006) and Tams (2010) suggest principles for the borrowing of theories from other disciplines. The latter analyses examples of theory borrowing that have yielded positive payback to the contributing discipline, mostly drawn from management, noting that the most notable example of positive contribution to original theory is the substantial extension of Rogers's diffusion of innovation theory in an IS context (Tams, 2010).

In summary, the quest for a theoretical core was mainly initiated by Weber's (2003a) editorial and subsequent inputs, in particular the plea to develop IS-specific theories rather than borrowing from the reference disciplines. A range of IS scholars have argued for less ambitious shorter term goals such as strong empirical results (King & Lyytinen, 2006a) and principles for mutually beneficial borrowing of theory (Holmstrom & Truex, 2011; Tams, 2010; Truex et al., 2006). Other scholars have avoided the identity and legitimacy discourses, instead theorising around the nature of theory in IS, including structure (Gregor, 2006), explanation (Hovorka, 2005), causality (Gregor & Hovorka, 2011), and generalisability (Lee & Baskerville, 2003). In most cases, arguments have revolved around cognitive conceptions of an academic discipline, after

Donald (2002). Interest in actual practices (after Hounsell & Anderson, 2009; Trowler, 2008) rather than normative cognitive prescriptions can be seen in the groundswell of support for diversity or pluralism in IS as its defining feature.

2.5.6 The quest to embrace diversity

In direct opposition to the various perspectives that have attempted to identify or define some common core concepts, paradigms, methodologies, or theories, a number of IS scholars have argued that research diversity is the essence of IS and its defining characteristic. They generally perceive fragmented adhocracy as a strength rather than a weakness. For example, Robey (2003) argues against Benbasat and Zmud's (1999) nomological net around the IT artefact, calling for a "mutable identity" (p. 353) and "adaptive instability" (p. 354). He contends that IS has to be adaptable in order to continually realign with technological developments and their impacts on the discipline. Similarly, King, Myers, Rivard, Saunders and Weber (2010) argue for "harmonious pluralism", where sub-fields of the discipline accept each other and the diversity of research topics, paradigms, methodologies, and theories are celebrated. They consider pluralism to include the problems addressed, the theoretical foundations, and the methods used.

King and Lyytinen (2004) propose characterising the quest to celebrate diversity in terms of three dimensions, namely, salience, plasticity, and strong results. Salience refers to the relevance of the research problems undertaken; plasticity not only captures the flexibility and malleability of the discipline to research existing problems with varied approaches but also, and more importantly, agility in responding to new technologies and their application in a range of dynamic contexts; finally, strong results refer to findings that are significant to the various stakeholders and that exhibit rigour in whatever paradigm or methodology is employed. King and Lyytinen thus identify the relevance and rigour in the strong results rather than specific research topics or theories as staking the claim for identity and legitimacy. In King's (2013) view, these characteristics of IS research will enable researchers to participate and be accepted in the "marketplace of ideas" (p. 192), as the silent hand that regulates the impact and significance of research outputs, to use the economics metaphor of supply and demand.

A number of authors classify this acceptance and celebration of pluralism as the inevitable outcome of the trans-disciplinary or interdisciplinary nature of IS (Galliers, 2003). Representative

of a strong European perspective on issues of disciplinarity, Galliers argues against Benbasat and Zmud's (2003) attempts to erect boundaries around IS as a means of definition. He acknowledges the diversity as manifested in the multiple interaction points between IT and its various stakeholders, contexts, and links with other disciplines. Rather than staking out the boundaries, Galliers argues that the identity of IS will evolve as the interdisciplinary spaces between disciplines and technology's dynamic expansion continue to be explored. In this perspective, change in focus is celebrated and deemed natural rather than reflecting a weak identity. In support, Whinston and Geng (2004) argue for "strategic ambiguity" (p. 149) in admitting boundary research problems, in contrast to the exclusionary nature of Benbasat and Zmud's boundary walls.

A further dimension of the view that celebrates pluralism and opposes attempts to delineate the discipline can be seen in Bryant's (2006; 2008) claim that IS scholars should focus on "thinking informatically" (p. 695) as the unifying characteristic. Drawing on Foucault's construct of discursive formations and Bauman's construct of liquid modernity, he argues that the discursive rules of practice that are "immanent in the practice" (p. 102) constitute a continually evolving but identifiable centre of gravity for the discipline. In this view, constructs and theories explaining IS phenomena are necessarily transitory as existing explanations are continually jettisoned and replaced by improved or different explanations informed by changing interactions between technology and social forces. Bryant identifies the recurring, residual discourse of IS as an engineering discipline with management overtones as constraining the natural evolution of ideas. He argues that future orientation should think differently about the research problems and self-image of IS rather than attempt to legitimise what is currently known. Bryant describes IS "as a flawed discursive formation, constantly engaged in the Sisyphean task of justifying its existence" (2006, p. 16) through debates about common cores and legitimacy. In contrast, he argues for the need for IS to move beyond the conception of a discipline as erecting boundaries and to remain permeable, not only open to the pull of influences from other disciplines but also ready to push new ICT and ICT-enriched borrowed constructs and models into the marketplace of ideas.

Entering the conversation about IS identity and future trajectories by aligning himself with calls for plurality and rejecting notions of a dominant paradigm, Walsham (2012) adds emphasis concerning ethical and critical goals:

This agenda emphasises the need for a focus on ethical goals, increased use of critical approaches, welcoming other disciplines with open arms, widening our field of study to many non-traditional settings and rejecting a dominant methodological paradigm. (p. 1)

Walsham favours the notion of IS as interdisciplinary, but acknowledges the challenges of conducting interdisciplinary research. Furthermore, he acknowledges the complexities of attempting to use ICTs to create a “better world” (p. 87), his ethical quest, but argues that the difficulties involved should not deter attempts to achieve these goals. Although supporting the flexibility and plasticity of a diverse discipline, he attempts to create alignment or coherence of IS research in terms of future, ethical goals as captured in the title of the article—Does ICT create a better world?

In summary, a groundswell of claims to celebrate diversity as the common core, primarily emerging from European scholars, evidences greater focus on actual practices than normative injunctions. This socio-cultural approach acknowledges the practices of research communities without seeking to identify an essential core that defines the discipline.

2.5.7 Focus and diversity

Earlier sections of the study have focused on IS quests for some common, unifying characteristics for the discipline, including core concepts, research areas, paradigms, theories, and methodologies. The previous section highlights the various arguments and forms in favour of embracing diversity and celebrating the various pockets of commonality (sub-fields) that exist. This section discusses arguments in favour of the seeming paradox that IS should pursue both focus and diversity.

Klein and Hirschheim (2008) acknowledge the need to find a form of balance between the perspective that argues to embrace the diversity and pluralism in IS and the multiple, internal attempts to find common ground. They focus on the construct of communities of practice (CoP), previously introduced in IS debates by DeSanctis (2003), as a lens to view the diversity across IS and to argue for “porous boundaries” (p. 283), in opposition to Benbasat and Zmud’s (2003) nomological net. Klein and Hirschheim extend the construct to the more specific communities of practice and knowledge (CoP&K), which recognises specific research communities with preferred

research topics and problems, methods, and practices of knowledge production. They provide some examples of CoP&Ks in IS including human–computer interaction, development of IS systems, user perceptions, ICT4D, design science, and paradigmatic groupings aligned with interpretivist and critical approaches. These CoP&Ks are identifiable in the many special interest groups of the AIS, the conference streams at AIS and IFIP conferences, and the special interest journals that have developed around each CoP&K and are characterised by their distinctive discourses. Echoes of Orlikowski and Iacono’s (2001) five views of technology and the core concepts identified by Sidorova et al. (2008) and Taylor et al. (2010) can be heard.

Klein and Hirschheim (2008) discuss the discipline of IS in terms of its community structure. They identify the academic–practice divide as the primary structural division, followed by a broad paradigmatic division (positivist, interpretivist, and critical) under which a network of largely independent CoP&Ks exist. According to Klein and Hirschheim, the paradigmatic streams run across several knowledge areas and CoP&Ks, but each CoP&K is a distinctive, voluntary association that forms around a specific knowledge area. The authors further argue that the diversity across CoP&Ks is a valuable and defining characteristic of the IS discipline in general but that some form of cross-silo communication and cross-pollination of ideas is necessary to build a more integrated discipline. Klein and Hirschheim’s quest for some integration includes acknowledging a common history and continuously updating this history (after Land, 2010) and dialogues involving “fundamental criticism” (p. 281) across CoP&Ks. This fundamental criticism is seen as necessary interrogation of a CoP&K’s assumptions from outside the community. Klein and Hirschheim acknowledge IS as a multi-paradigm science and resist attempts to reach some form of forced consensus, positing instead cross-CoP&K critique and challenge as a necessary step in the further evolution of the discipline. These boundary spanning activities will foster identity formation in the form of a “network of interacting CoP&Ks” (Klein & Hirschheim, 2008, p. 281).

More recently, the binary positions of seeking the core or embracing diversity have evolved towards the possibility of the simultaneous quest for both. Taylor et al. (2010) used co-citation analysis of patterns across all IS-related journals and identified three stable sub-fields in a) development, implementation, and use of IS systems, b) strategic and business outcomes and c) group decision support systems. Significantly, they identified substantial diversity within and

outside these sub-fields, claiming that the discipline of IS, as a “healthy applied discipline” (p. 647), had evolved to being a polycentric state in Banville and Landry’s (1989) enduring classification system. According to Banville and Landry’s taxonomy, strategic dependence (extent to which researchers rely on each other for recognition, rewards, and reputation) had initially been rated as low. Taylor et al, however, identified citation patterns as clearly indicating that strategic dependence is high, moving the overall rating away from the fragmented adhocracy category. The other two dimensions, namely, strategic task uncertainty (conceptual coherence) and functional dependence (technical and procedural cohesion of methods) both remain low. IS thus seems to be a polycentric state, which has far more positive connotations than a fragmented adhocracy. Taylor et al. claim that the category of a polycentric state is appropriate for an applied discipline, which has ideally to meet the dual demands of an academic community (conceptual focus and theoretical emphasis) and the practice community (responsiveness to the diversity of socio-technological innovations). They identify as a limitation for the discipline that patterns of co-citation occur largely within the silos of the sub-fields and advocate greater cross-silo citation in order to build a more integrated body of IS knowledge. Significantly, they identify conference proceedings as a fruitful data source for further co-citation analysis to identify trends in these ‘cutting edge’ research fora.

Although co-citation analyses make the assumption that the conceptual nature of a discipline is best represented in the citation patterns between key authors, clearly journal preferences, reviewing criteria, and editorial policies would be a factor influencing these citation patterns. Notwithstanding these reservations, the previously prevalent anxiety discourse seems to have given way to a more balanced, self-accepting discourse for IS. Early attempts at exclusively cognitive self-definition of IS in terms of concepts, methodologies, and theories have evolved towards greater recognition of socio-cultural practices. The ultimate socio-cultural divide between the worlds of academia and IT practice is the subject of the final vexed question in the quests for an IS identity, that is, the relative importance of rigour in research, relevance of research, or a form of balance between the two.

2.5.8 The quest for relevance

The context of the quest for relevance is formed by the competing demands between academia and practice as the primary audience of research in IS. Distinct audiences of IS research

include fellow academics in IS, the broader academic community, IS students, IS practitioners, or IS executives. In this context of multiple audiences and multiple narratives (Westrup, 2012), the choice of the primary audience has implications for other audiences.

The seeds of the debate about the relative importance of relevance to practice in IS research were sown by Keen, firstly as the keynote speaker at the first ICIS conference in 1980 and later in a seminal article in 1991. A strong case was made for the importance to the discipline of being relevant to practice: "Until relevance is established, rigour is irrelevant" and "IS research in danger of talking about itself to itself" (Keen, 1991, p. 47). Keen saw the pursuit of rigour in research in an applied field, a key factor in the quest for acceptance by other academic disciplines, as secondary to the importance of producing research that addressed problems of interest to IS practitioners and was published for their benefit rather than a closed, in-house academic conversation.

This problem of relevance was unpacked by Benbasat and Zmud (1999) in *MISQ*. They outlined the causes of the relative neglect of relevance in IS research (journal policies and practices, tenure and recruitment practices) and proposed a number of principles and specific interventions to address the problem. They argued that journal articles in IS needed to be interesting, suitable, and accessible to IS practitioners. These principles, they concluded, spoke to the choice of topic (drawn from problems and issues in practice rather than only from the academic literature) as well as the nature and form of the representation of articles (written in accessible language rather than 'academese' and focusing on solutions and implications for practice rather than emphasising the academic literature, prior theory and methodology). An immediate response to the Benbasat and Zmud article was made by Lyytinen (1999), presenting aspects of the European perspective, as well as by Davenport and Markus (1999). Both responses endorsed the cry for relevance, but Lyytinen also identified a number of shortcomings (for example, lack of focus on what was meant by practice and on textbooks as a neglected avenue of communication with practice) and opposed the call for a simplification of writing. By contrast, Davenport and Markus claimed that Benbasat and Zmud had not gone far enough in their recommendations, and they called for fundamental changes in practice. They argued that IS should seek to emulate established professions, such as medicine and law, rather than benchmark itself against business disciplines only. In addition, they argued that the research work done by IS consultants should not be rejected

out of hand as lacking rigour but that academics needed to work with and learn from consultants in strengthening the rigour of practice-oriented interventions. The relevance–rigour debate in IS had begun.

One view of the relationship between research and practice was put forward by Baskerville and Myers (2006), who argue that “fashion waves” (p. 647) in IS research are largely driven by the world of practice. Academics are thus often the followers of fashion, researching the effects of technological innovations and their organisational and management implications rather than leading the way. The authors note that lengthy publication review processes contribute to this follower role and also result in practitioners perceiving the research as being dated. Mostly, however, IS scholars saw a widely acknowledged disconnect between academic research and the world of practice, echoing the concerns raised by Benbasat and Zmud (2003). A common thread was that academic research over-emphasised rigour in terms of methodology in studies on topics that were often outdated or of no practical use to the industry (Lange, 2005; Pearson, Pearson & Shim, 2005). Variable-centred research was targeted because, while it demonstrated strong scientific method in reducing problems to the investigation of selected variables, this reduction created perceptions of piecemeal, isolated results that ignored the complexity of organisational life (Ramiller & Pentland, 2009). Practitioners generally perceived IS academic research to be of limited practical value (Pearson et al.), and most indicated that they did not read published IT research or were unable to find such studies; they also reported finding the language used inaccessible. Academics generally paid little attention to the community of practice in published research (Davenport & Markus, 1999), and the abiding goal of the researcher was to be published in journals accredited by the academic community. The top tier IS journals such as *MISQ* and *ISR* emphasise rigour in all their practices, especially reviewing, and it has been claimed that academics self-impose the regime of rigour rather than seeking relevance in their own research (Hassan, 2011).

The multiple audiences of IS research were identified as key aspects of the disconnect between academia and practice by Alter (2003) in a concluding response to the extensive debate on the core of IS in *CAIS*. He distinguishes managers from practitioners, UG IS students from PG IS students, academic journals from practitioner publications and tenure committees from teaching programmes, categorising the varying needs of these audiences. Alter notes that placing a high

value on academic research rigour is related to academic dimensions such as tenure, top journals, and PG programmes in contrast to the lower value on rigour required by the IS industry, UG teaching programmes and practitioner publications. Thus according to Alter, the discipline is characterised by UG teaching programmes that prepare students directly for industry, using practitioner publications and textbooks that prescribe methods and procedures, without extensive reference to the body of academic research; by contrast, academic careers are characterised by tenure requirements that involve publication in top tier journals with their rigorous focus, and the socialisation practices of the PG ‘academics-to-be’ mirror this.

Alter (2003) has also pointed out that while many journals’ editorial policies indicate the importance of being relevant to practice, academia is effectively treated as the preferred audience. Journals geared to a primarily practitioner audience such as *CAIS*, *MISQ Executive*, *Sloan Management Review*, and *Harvard Business Review* are not ranked among the top tier IS journals, and tenure processes and the academic community regard them as ‘second best’; publication in practitioner magazines such as *CIO*, *ComputerWorld*, and *Datamation* are generally not recognised as making an academic contribution (Alter, 2003). Conference review processes also generally favour rigour over relevance (Rosemann & Recker, 2009). Overall, the academic system of tenure, publication, conference participation, and internal recognition discourages, perhaps indirectly, the active pursuit of relevant research written for a practitioner audience (Benamati, 2007). Benamati in fact makes the even stronger claim that the current IS model “encourages irrelevance” (p. 657). Furthermore, these powerful signals of what is valued and not in the IS academic community become part of the culture of IS research as academics self-impose the value of rigour over relevance (Hassan, 2011).

Thus it would seem that in general the discipline of IS regards itself as primarily a science and only secondarily as an applied discipline (Agarwal & Lucas, 2005; Power, 2003). King and Lyytinen (2003) capture the tensions of a discipline that “straddles intellectual inquiry and practical application” (p. 1) and the inevitable trade-offs between rigour and relevance. They describe the “pendulum swings between the Scylla of theory and the Charybdis of practice” (p. 3), although in the case of IS, the pendulum would appear to be inclined more towards Scylla than Charybdis. Nevertheless, some IS academics have argued that claims of an imbalance are part of the anxiety discourse rather than based on empirical evidence (Straub & Ang, 2008). They cite

examples of persistent IS topic areas such as IS strategy and IS development as contributing strongly to practice. Straub and Ang also point out the multiple channels for transference of knowledge from academia to practice, including textbooks, students, and courses.

Somers (2010) has argued that IS needs to be cast as a profession in order to function as a means of integrating academic research, IS education, and IT practice. His use of the lens of the theory of professions suggests opportunities for integration, but these are predicated on clear acceptance, both within and without, of jurisdictional claims to specific areas of knowledge. However, a pluralistic identity would allow competing fields to lay claim to some of these specialised knowledge areas, undermining the claim to be a profession (Somers, 2010). Thus, it would seem that the discussion has come full circle, back to the Sisyphean quest for a common core. Furthermore, the theory of professions has additional requirements of strong accreditation boards for the socialisation of IS professionals into the discipline, an aspect which IS lacks in comparison to medicine and engineering.

In summary, the rigour–relevance debate includes analysis of reasons for the perceived lack of relevance of IS research to practice, a relatively small counter-claim that research is fairly relevant to practice and a number of prescriptions for improving research relevance. Some of these prescriptions are incremental in nature (for example, applicability checks and relevance indices) whereas others require radical change (for example, IS as a profession). The common thread, in line with the discussion of the other quests for a common core, guiding paradigm, defining methodology, and disciplined diversity, is the multiplicity of perspectives and views.

2.6 Concluding Remarks

In the context of rapidly changing technology, the IS discipline has a surface appearance of calm. A global organisation (namely, AIS), extensive UG and PG teaching programmes, international curricula, established international conferences and landmark journals create a sense of permanence and stability. However, beneath the surface calm an undertow of competing currents and eddies reflect an alternative view of flux, uncertainty and ineffable change. Characterising this undertow are the polarities across continents (Europe–North America), relevance versus rigour, and focus in contrast to diversity. Even within the quests for common concepts, paradigms or theories, there appear to be prevailing polarities: the core of the IT artefact

claimed versus systems in organisation; the plurality of paradigms versus the dominance of positivist approaches; and theory borrowing, adaptation, and testing versus theory building.

Raymond (1999) used the metaphors of the cathedral and the bazaar to capture the tensions between proprietary and open-source software. These metaphors can also be used to suggest the overall tensions within IS as a discipline. Thus, idyllic quests for a grand cathedral with its concomitant unquestioned faith in a single God confront the reality of the bazaar where several minor merchants peddle their wares, needing continually to convince and persuade sceptical buyers. As the polarities appear, disappear, and re-appear in waves of thesis and antithesis, the calm stability is at best a constructed image. In this polycentric state called IS, what are the nature of curricula that prepare students to do IS research? What forms and nature do modules in RM take? Do they approximate the calm surface image of IS as an established discipline or do they reflect the turbulent undertow? To what extent do RM curricula influence knowledge generation in IS and the shaping of the discipline's identity? To what extent are these tensions reflected in the planning and enactment of IS RM modules?

The next chapter discusses issues of curriculum and curriculum frameworks in an attempt to construct a helpful lens through which to address these issues.

Chapter 3

Matters of Curriculum–Constructs and Frameworks

3.1 Introduction

In Chapter 2, an account of the historical, cultural, and disciplinary nature of IS was constructed in order to frame the discussion of RM curricula. The construct of curriculum now needs to be explored, building an understanding of some of the scholarship of curriculum and motivating for the conception of curriculum and the framework that will be used in this study. This framework will directly inform the discussion of the scholarship of RM in Chapter 4.

The formal process of preparing PG students to undertake research typically includes coursework, supervision, and supplemental workshops or courses of instruction. A substantial body of research exists on the nature of research and the research project as well as the supervision of research. However, the specific role of formal coursework in research preparation is relatively under-researched, and RM and methods modules are generally treated as discrete, serving functional purposes of providing the knowledge and skills that are required to conduct research.

This study focuses on the formal coursework aspect of research preparation, appropriating the term RM curriculum to refer to the range of curriculum activities/dimensions that constitute this formal coursework. A curriculum framework is used as a lens to explore the formal RM coursework aspect of research preparation as a system. A clear understanding of curriculum is thus needed in order to analyse the formal coursework aspects of RM modules in the discipline of IS. The previous chapter explored the nature of IS as an emerging discipline, and the chapter that follows this one engages with the literature on the RM curriculum, especially in IS. This chapter is thus a crucial link in constructing an understanding of the compound construct of the PG IS RM curriculum, as reflected in the title of the thesis.

This chapter accordingly reviews the existing literature on curriculum and its central relevance to this thesis. The complexity of the construct is discussed, including the multiple conceptions of and perspectives on curriculum. The conception of curriculum adopted for this study is explained and justified and the dominant curriculum frameworks informing the study are discussed. The chosen dimensions of curriculum used in this study are also motivated. The literature on curriculum, in particular design, was included in this chapter. Key authors were

consulted in the quest to find a curriculum framework that fitted the specific requirements of the research problem and questions.

The chapter is organised as follows. The initial section discusses the construct of curriculum and the international and national contexts of its study. The challenges in defining curriculum are then discussed, leading to the conception adopted for this study. An argument is made for considering RM preparation as a special instance of a curriculum, the choice of the intended and enacted curriculum as perspectives are motivated, and the decision to focus primarily on the perspective of the educator is justified. The terminology relating to research preparation, including research training, research education, research preparation, and research learning is then discussed, leading to the choice of the construct RM curriculum as the most appropriate and descriptive term for this study. The chapter ends with a summary and some concluding remarks.

3.2 Understanding Curriculum

This section explores the complex construct of curriculum, contrasting everyday use of the term with its multiple understandings and complexities in the school and tertiary sectors. These different meanings reflect changes in perspective and focus that are significant in understanding curriculum. Jackson (1992) cautions that choosing a specific conception of curriculum is an essential part of the overall argument being made in any study. Thus the choice of a specific perspective sharpens focus on certain aspects of the construct while simultaneously blurring or concealing other dimensions.

3.2.1 Towards a definition for this study

In common parlance, the term curriculum is generally used as meaning the formal subjects or modules offered to students as part of a qualification. The term is commonly associated with the planned programmes of learning for students, as reflected in public documents. Thus public debates about curriculum change generally focus on the content of the modules. Ross (1999) captures this notion of curriculum as “what needs to be learned” (p. 6). This focus on content implies two possible actors, namely, the educator selects the material that needs to be learned, and the student learns it.

However, this narrow understanding of the curriculum by academics as synonymous with the module outline or syllabus, with the dominant emphasis on the content to be covered and learned, is critiqued by Fraser and Bosanquet (2006) as a narrow (mis)perception. Furthermore, Bitzer and Botha (2011) claim that the construct curriculum is “unstable and has vague boundaries” (p. 17). Reynolds (2003) characterises some of the metaphors used to characterise curriculum as “lines of flight” (p. 24) and “several streams flowing through the system” (p. 25), suggesting the need to consider its multiple nature and avoid simplistic reduction. Ellis (2014) describes the construct as amorphous, capturing its strengths of fluidity and richness, yet indicating possible ambiguities and complexity. Jenkins and Healey (2009) describe curriculum as an Ouija board with the multiple pushes and pulls of competing forces. The amorphous nature of the construct results in the need to use modifiers to more sharply constrain the term (Ellis, 2014). Thus, constructs such as the planned curriculum (focus on the designers), the implemented curriculum (focus on the educator), and the experienced curriculum (focus on the student) attempt to gain traction by sub-dividing the broad concept of curriculum into components (Marsh, 2009). Modifiers such as official, intended, planned, written, and published (all reflecting the institutional perspective), the implemented, enacted, and delivered (all reflecting the teacher perspective), and the received, experienced, attained, and lived (all reflecting the student perspective) will be discussed in more detail in a later section. Some of these may appear to be synonymous, but most introduce a slightly different perspective. For this study, the primary focus is on the institutional and teacher perspectives on curriculum with the student perspective as an influencing factor.

The various understandings adopted by scholars of curriculum reflect the complexity and the range of different possible perspectives on curriculum (Marsh, 2009). Longstreet and Shane (1993) identify three primary perspectives on curriculum, namely, knowledge-, student- and society-oriented, with the added possibility of an eclectic mixture of the three perspectives. They suggest that the knowledge dimension emphasises disciplinary content whereas the student orientation focuses more on the development of the student. Society-oriented perspectives emphasise the role of curriculum in preparing students for participation in the broader society. Clearly, these perspectives have areas of intersection, but the primary emphasis shifts the focus onto one dimension with a lesser focus on the other dimensions.

For this study, Barnett and Coate's (2004, p. 3) understanding of curriculum as the "design of spaces for engagement of students" provides a helpfully broad perspective. In this conception, curricula are designed in advance, emphasising the plans and intentions of designers, but ideally they are designed for engagement of students. This conception suggests the relatedness between the designer and the students so that students are in the mind of the educator during design. More specifically, the conception includes educator design of specific sessions or activities as the pre-planned curriculum is translated into actual implementation. Barnett and Coate elaborate further by referring to curriculum as a "set of organised processes and materials that intentionally and unintentionally are put before the student" (p. 23). This elaborated conception adds the element of structure or organisation of the processes and materials, as well as suggesting that some elements may not be deliberately planned or intended. The primary focus is on the educator as the initiator of the engagement. This focus on the educator accords with the primary focus of this study on the RM lecturer as the designer, intender, and enactor of the curriculum. The critical importance of the student in this dyadic relationship is in no way undervalued, but in this study the research question of why IS RM curricula are the way they are is best answered from the primary perspective of the lecturer.

Another useful approach is that of Lattuca and Stark (2011), who, writing in the context of the college curriculum in the US, provide a concise conception of curriculum as "academic plans in context" (p. 16). They argue that this pragmatic conception of curriculum as an academic plan emphasises the decision-making process and key decision points in designing and enacting a curriculum. Their conception firmly locates these decisions in a broad sociocultural context, including external influences (such as, society, policy, the market, and professions) and internal influences (such as, the institution, the department, the lecturer, and the student). Like Barnett and Coate (2004), Lattuca and Stark focus on the educator who makes the decisions in designing and enacting the curriculum. However, the latter emphasise the "informed and intentional choices" (p. 21) made in devising the academic plan with specific students in mind, with less focus on the unintentional. These two broad understandings are thus mutually supporting, with the more philosophical designing of spaces of Barnett and Coate rooted in practical terms in the academic plans of Lattuca and Stark.

3.2.2 Refining our understanding of curriculum

As indicated in the previous section, a range of modifiers have been applied to the construct of curriculum in the literature. A discussion of these modifiers will assist in outlining the full complexity of the construct and lead to a justification for the choice of the notion of the intended and enacted curriculum to structure this study.

As far back as 1987, Grundy distinguished between curriculum as product (a document), process (implementation), and praxis (socially constructed), and these categories provide a useful starting point. Curriculum as product emphasises a tangible artefact that captures the essence of the construct. This could be a written or published document such as a syllabus or module description. The document would typically include explicit description of the content to be covered, the methods that would be used, the assessment tasks planned, and the materials to be consulted (Fraser & Bosanquet, 2005). As noted above, curriculum scholars have used a range of modifiers to capture some of these aspects of the product: the written, published, prescribed, explicit, formal, overt, manifest, official, planned, and intended curriculum. Any of these could simply be regarded as synonymous due to the obvious overlaps, but there are some useful distinctions that capture important perspectives. Several of these modifiers specify the form of the product, written, published, or formal. These modifiers are associated with the institutional perspective on the curriculum. The published curriculum suggests a strong link with the official curriculum, a written form that is officially sanctioned rather than simply being a written contract between educator and student. The modifier prescribed also suggests a formally approved curriculum that is mandatory, but may also suggest textbooks that are formally approved. The planned and intended curriculum is primarily written and explicit, but the possibility of unwritten intention or plan exists. These modifiers may be grouped under the construct institutional curriculum since the institution is the primary agent in its construction.

The range of modifiers specifying the product has also yielded scholarly consideration of the opposite or complementary aspects. There is thus the range of concepts such as the unwritten, tacit, informal, covert, hidden, latent or unofficial curriculum. The hidden curriculum is the most widely used term referring to aspects of the educational space that are not specifically listed. Critical theorists such as Margolis (2001) have discussed the hidden curriculum in the context of

values, beliefs, and ideology that that are implicitly or unintentionally reinforced and instilled in students. For example, values such as obedience, compliance, timeousness, and competition are argued to represent fundamental tenets of capitalism. Jackson (1992) indicates that the term hidden implies a hider, and claims that the values and beliefs that underpin educational activities may be consciously designed and perhaps unknowingly transmitted. The concept of the null curriculum has also been used to indicate those possible aspects of content and method which were not included in the planned curriculum. In this case, certain topics and skills have been deliberately excluded. These absent topics and skills may be further categorised as justifiably omitted (for example, irrelevant to the curriculum) or less justifiably omitted (for example, politically sensitive).

Grundy's (1987) notion of curriculum as process has similarly yielded a range of perspectives and dimensions associated with various modifiers. These include the implemented, delivered, taught, tested, practised, enacted, and embodied curriculum. Although commonalities exist in terms of being process-oriented, the various underlying assumptions are significant. The concepts of the delivered, implemented, taught, and tested curriculum place focus on the teacher as deliverer or implementer, with minimal consideration of the students. Enactment and embodiment are less focused on the educator and less behavioural in emphasis. Enactment or embodiment of the plan allows for, and requires, consideration and participation of students, for example.

Some writers have satirised aspects of the curriculum as product and process to expose the assumptions behind a curriculum plan that is prescribed and needs to be implemented or delivered 'as is' by educators. They refer to the teacher-proof or student-proof curriculum (Connelley, 1980; MacDonald, 2003), often using the metaphor of the teacher as a conduit for transmitting or delivering the curriculum. These metaphors refer to attempts to provide a curriculum as the complete package for direct implementation without the teacher changing any of the purposes or content. These assumptions specifically exclude both the teacher and student from any agency in the implementation of the curriculum. Toohey (1999) inverts this notion of a curriculum that can be transmitted without 'interference' from teacher or student in positing the notion of a curriculum-proof teacher. The power and agency is shifted to the teacher who is able to engage students

without being hamstrung by the official curriculum. The central importance of the teacher in the interpretation and adapting of the curriculum to best meet the needs and context of the student is strongly emphasised.

Grundy's (1987) notion of curriculum as praxis shifts the focus to the socially constructed nature of curriculum. Curriculum is not simply a product to be implemented or delivered but is mutually and socially constructed by educators and students. March and Willis (2007) refer to the experienced curriculum; other authors such as Kridel (2010a; 2010b) and Hoadley and Jansen (2009) use terms such as the received, attained, and lived curriculum. While the common focus is on the student perspective on curriculum, these terms still provide a range of differences. The received curriculum suggests a passive ingestion of the transmitted material whereas the lived and the experienced curriculum place the student with far greater agency. The attained curriculum seems to lie somewhere in between, with the implication of its being measurable and capable of being demonstrated.

Posner (2004) makes the point that the range of complementary understandings of and perspectives on curriculum is concurrently present, and they should all be taken into account in studying the curriculum. In his terminology, the official or written curriculum, the operational (taught and tested) curriculum, and the hidden, null, and extra curriculum operate simultaneously. He suggests that the official and the operational curricula will be largely similar, although differences are to be expected as the teacher makes choices based on the actual context of the teaching. The hidden curriculum will operate as an undercurrent of the official and operational curricula with the possibility of subtle differences as the teacher introduces additional implicit or tacit value or belief systems in operationalising the written curriculum. The null curriculum will remain as that which is not taught but may be different for the written and operational curricula as the teacher adds or subtracts from the written curriculum, perhaps building the extra curriculum. The full complexity of attempting to do justice to these multiple, finely textured strands is clear. Reynolds's (2003) metaphoric description of curriculum as "lines of flight" (p. 6) is particularly apt, capturing the multiple possibilities that exist simultaneously.

Grundy's (1987) three dimensions of curriculum and the host of complementary and supplementary concepts discussed above thus need to be seen as mutually present in full consideration of the curriculum. Speaking of 'the curriculum' is thus a misnomer as the reality is multiple, concurrent curricula. Barnett and Coate (2004) use the concepts curriculum-as-designed and curriculum-in-use as complements in discussion of the curriculum. Marsh (2009) uses the terms planned, enacted, and experienced curriculum to categorise the three dimensions of curriculum. The planned curriculum refers to initial design by educational authority, the enacted curriculum is the negotiated and adapted plan as enacted in the classroom, and the experienced curriculum emphasises the centrality of the student's experience of the enactment. Hoadley and Jansen (2009) use the complementary terms intended curriculum and enacted curriculum with due acknowledgment of the ongoing dialogue between the two dimensions. This study has a primary focus on the role of the educator in curriculum and has thus adopted the terms intended and enacted curriculum for their inclusive simplicity yet clear acknowledgment of the probability of differences between what is intended and what is enacted.

The choice of the notions of the intended and the enacted curriculum to frame this study will now be discussed, motivated and justified.

3.2.3 Intended and enacted curriculum

Kridel (2010a), in the *Encyclopedia of Curriculum Studies*, provides a useful description of the curriculum as "conceiving and configuring experiences that potentially lead to learning" (p xxix), a description that aligns well with the conceptions of curriculum adopted for this study. Kridel's description introduces the possibility of three interacting actors: one conceives the experiences, a second configures the experiences, and a third, the learner, influences both the conceiving and configuring, as well as being central to whether the potential is realised. Thus, according to Kridel, governments and education authorities may conceive national curricula, then schools and teachers would configure these plans to their specific contexts, and the learner would be an active recipient. In the higher education context in South Africa, Bridges (2000) claims that university curricula are largely self-determined (with the exception of those strongly influenced by professional bodies) so the conception and configuring of curricula within institutions can be located in the domain of the individual lecturer. Thus, in the context of higher education, Kridel's

description succinctly captures the dimensions of planning and arranging experiences by the lecturer that create the opportunities for students to learn. The lecturer is cast as the primary planner and initiator of learning activities, with an explicit framing of this planning and initiation as the learning opportunity for the student. This study aligns strongly with Kridel's conception and focuses specifically on the role of the lecturer as curriculum maker and enactor. While the critical importance of the student in curriculum is in no way undermined, this study places the lecturer dimension as the focus of inquiry.

Initially, what seemed to provide a neat fit to Kridel's (2010a) definition was Robitaille's (1993) threefold framework of the intended, implemented, and attained curriculum used in the Trends in International Mathematics and Science Study (TIMSS) project. However, in the TIMSS studies, the intended curriculum is conceived and distributed at education system level, and the teacher decides how best to implement this planned curriculum. Thus the agency of the teacher is somewhat constrained by the externally produced curriculum plan. The notion of the lecturer implementing the curriculum, does not capture the greater agency afforded to the lecturer in the higher education context. Nevertheless, the concept of the intended curriculum does have the implicit assumption that what is intended may not be realised in practice. Alternative conceptions of the intended curriculum include the planned, the formal, the written, the published, and the documented curriculum, but these terms provide less of an acknowledgment that the formally written plan may be implemented differently.

An even stronger conception is the official curriculum, which Kridel (2010b) describes as "what is formally sanctioned" (p. 212), carrying overtones of even less agency for the lecturer. The official curriculum contains elements of prescription (Hoadley & Jansen, 2009) spawning the range of curriculum concept counterpoints, including the covert (conscious though not explicit), hidden (probably unconscious), and null (what is taught by omission; Kridel, 2010b) with their nuanced differences. In contrast with all these alternatives, Robitaille's (1993) intended curriculum has the softness of possibility that best fits the higher education context. However, a concept that carries greater agency for the lecturer than the implemented curriculum is needed.

As discussed earlier, Grundy (1987) distinguished curriculum as product (intended plan) from the process in the classroom and the praxis of what is constructed by all involved, including teachers and learners. Hoadley and Jansen (2009) use this notion of the curriculum as practice in

adopting the concept of the enacted curriculum. Thus, the enactment of the intended curriculum is influenced by the lecturer's experience, creativity, taste, knowledge of the topic, knowledge of the learners, available resources, and institutional ethos, amongst others (Hoadley & Jansen, 2009). As the authors describe it, the enacted curriculum may and will differ from the intended curriculum, either consciously or unconsciously. The stronger sense of lecturer agency makes the term a good fit in the higher education context.

Possible alternative terms for the enacted curriculum include the attained, lived, experienced or embodied curriculum, each with its own nuanced meaning. The attained curriculum focuses on the measurable achievement of the student. The experienced curriculum aligns with the idea of curriculum being constructed in practice by lecturers and students, but the term seems to lean slightly more towards the student experience. It has some consonance with the notion of the received curriculum. The lived or embodied curriculum does not have a dominant student orientation; it suggests a broader, more inclusive notion of being lived by both lecturers and students. Lecturers live the curriculum in conceptualising and configuring of potential learning experiences whereas students live the curriculum by engagement or not with the potential learning activities. Kridel (2010a) captures this inclusivity aptly in describing the "lived experience of teachers [a]s an indwelling between the planned curriculum and the curriculum as lived with students" (p. 212).

For this study, which aims to explore various dimensions of curriculum from the lecturer's perspective, the concept of an enacted curriculum fits best. The lecturer is the enactor who interprets, re-shapes, and reconfigures their initially intended curriculum into potential learning activities for students. This enactment serves as the stimulus for students to experience, engage, and live the curriculum.

3.2.4 Ways of thinking about curriculum

The wide range of different and competing sub-categories of curriculum discussed above reflects the complexity of the notion of curriculum but may also result from different theoretical perspectives on curriculum. These different perspectives or views of curriculum will inevitably result in differently designed and enacted curricula (Scherman & du Toit, 2008). Marsh (2009) puts it slightly differently, emphasising that choosing to teach in a certain way involves some

personal theory or model. These different theoretical perspectives, personal theories or mental models of curriculum require further discussion.

Scholars have identified a range of perspectives on the curriculum. Thus, complementary to Grundy's (1987) three broad dimensions and the range of textures and colours within the three dimensions, Posner (2004) has identified five primary theoretical perspectives on curriculum and refers to these as "curriculum conscience" (Posner, 1998, p. 268) as they represent value propositions. These are presented as "broad families of approaches to curriculum" (2004, p. 45) with inevitable simplification and intersections across different approaches. However, they offer useful thinking tools and metaphors in considering curriculum. The five families of approaches are as follows:

- Traditional—driven by the question, "What are the most important aspects of the cultural heritage that should be preserved?" (2004, p. 47). Content is a primary consideration, conceiving the mind as a storage area for facts and principles. The epistemological assumption is based largely on transmission by lecturers and relatively passive consumption by students.
- Structure of the disciplines—answering the question, "What is the structure of knowledge in the disciplines?" (2004, p. 47) Academic disciplines determine the content and the structure of the content to be transmitted. This perspective has similar assumptions to the traditional perspective, but the focus is more on disciplinary knowledge.
- Behavioural—focusing on the question of what learners should be able to do on completion. This foregrounds skills and measurable performance. Epistemological assumptions include the need to focus on observable behaviours that are broken down into a linked series of components that are technically and rationally aligned in attaining the destination behaviours.
- Constructivist—answering the question, "How can learners learn to make sense of the world and to think more productively?" (p. 47). The focus is on the process of building competences and capacity in learners than on content. The epistemological assumption is that learners actively construct meaning, building their understanding from current understandings.
- Experiential—answering the question, "What experiences will lead to the healthy growth of the individual?" (p. 47). The focus in design and enactment is on the individual student's development as a person and far less on the content to be covered.

A similar typology of perspectives was used by Toohey (1999) in examining course design in higher education, primarily in the context of the UK. Toohey significantly included the category of the socially critical, introducing the dimension of the societal aspect that is missing from Posner's typology. Both of these typologies focus on the perspective of the course planner or designer and are thus appropriate for this study. They will be used in categorising the pedagogical orientation of the RM modules in Chapter 7.

3.3 Curriculum as Academic Plan in Context

The previous sections have built on Lattuca and Stark's (2011) understanding of curriculum as "academic plans in context" (p. 16), adding a range of modifiers to categorise the curriculum and culminating in the theoretical perspectives discussed above. Further pieces of the jigsaw of curriculum as construct are supplied by the various curriculum frameworks discussed in the literature. The approach adopted here is to not provide an exhaustive account of all possible frameworks but to focus on those most pertinent to this study.

A detailed framework and model for the academic plan in context conception of curriculum have been developed by Lattuca and Stark (2011). This framework has some similarities with Posner and Rudnitsky's (1994) curriculum design and Posner's (2004) work on a curriculum framework for analysing the curriculum, but Lattuca and Stark's model is preferred for this study due to its primary focus on the planning or intended phase. Their framework provides a useful model of how academic plans for curriculum interact with the multiple contexts of society, institution, student, and personal belief systems of the lecturer. Lattuca and Stark specifically motivate their approach as providing a useful lens on the several decision points in designing and enacting a curriculum. The lack of a universally agreed understanding of curriculum influenced their choice to focus on specific decisions that need to be made by the educator within the multiple contexts mentioned. Lattuca and Stark present their model as a practical tool that is applicable to all levels, including a single lesson, a single course, a programme comprising several courses, and the overall curriculum of a university as a whole. The framework thus aligns with the focus on RM modules in this study; they are often stand-alone modules but are sometimes conceived as a programme for research preparation, spanning different years.

Lattuca and Stark (2011) have identified the following key aspects of the academic plan that require decisions by the educator:

- Purposes—the justification of “the knowledge, skills, and attitudes to be learned” (p. 4)
- Content—the “subject matter that is selected in order to convey the knowledge, skills, and attitudes” (p. 4)
- Sequence—an “arrangement of the subject matter and experiences intended to lead to specific outcomes for learners” (p. 4)
- Learners—how the plan caters for specific groups of learners
- Instructional processes—“instructional activities by which learning will be achieved” (p. 5)
- Instructional resources—“the materials and settings to be used” (p. 5)
- Evaluation—assessing outcomes and the overall plan
- Adjustment—ongoing improvements to the plan.

These eight decision points clearly have mutual influences, for example, purposes, content, and sequence are closely linked and ideally in strong alignment. The repeated use of the term instructional in two of the aspects is noteworthy. The primary focus is on the instructor, which aligns with the focus of this study, but the terminology of instruction may suggest a traditional or behaviourist perspective of transmission. This terminology is commonly used in the US, but for this study the terms instructional process and instructional resources will be substituted by teaching and resources, respectively.

Lattuca and Stark (2011) have also constructed a model of curriculum (see Figure 3.1 below), representing the academic plan in a sociocultural context and incorporating the eight aspects listed above as the key foci as well as indicating a range of external and internal influences that need to be taken into account in designing and enacting the academic plan. The wide range of tangible and intangible influences from without and within confirm that curriculum design and enactment may not be simple, rational, conscious processes, but the model attempts to articulate some of the influences.

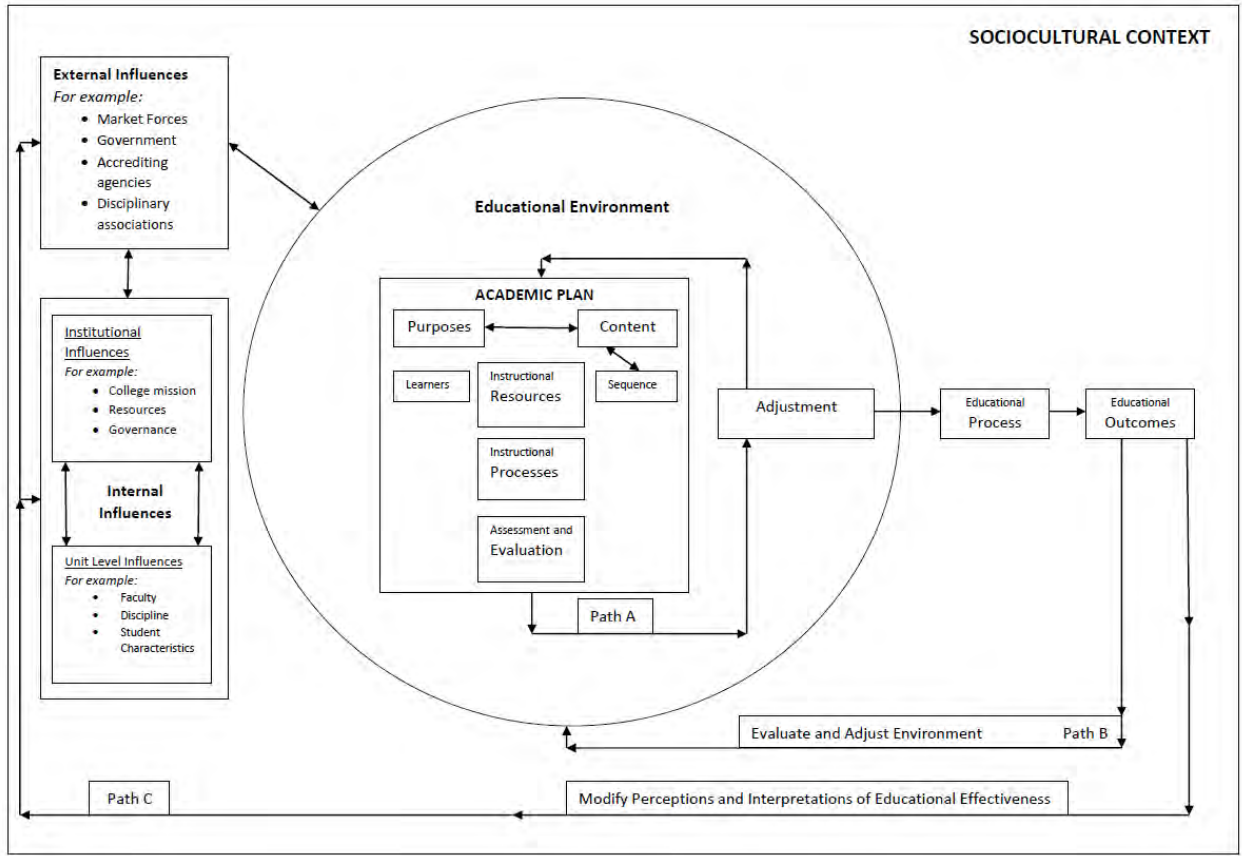


Figure 3.1. Lattuca and Stark's model of curriculum (2011, p. 5)

The model recognises a range of external influences, including market, policy, and regulatory requirements and professional or disciplinary associations. Internal influences include those of the specific institution as well as the more immediate context of the faculty (academics) and discipline. Student characteristics are specified as an internal influence. The model also indicates three feedback loops or paths whereby the academic plan self-adjusts (Path A), shapes the immediate educational environment (Path B), or influences the range of external and internal factors (Path C). The curriculum as academic plan in context model is predicated upon a contextual filters model (Lattuca & Stark, 2011), which posits that all decisions regarding the plan are influenced by a range of internal and external aspects as well as being filtered through a range of contextual factors. Thus, for example, content is directly influenced by the course designer's faculty experience and views of the discipline and purposes of education but is less influenced by materials, and sequence of activities.

Lattuca and Stark (2011) adopt a pragmatic perspective in viewing the curriculum as an “academic plan in context” (p. 16). The framework draws together several dimensions into a holistic academic plan, an aspect that is claimed as a strength (Hooper et al 2011). The framework also recognises the mutual influences of purposes, content and sequence in a curriculum, but the other ontological categories such as instructional processes, resources and assessment are presented as stand-alone. Furthermore, learners as an influence on curriculum are placed to one side in the model, either foregrounding their significance or more likely minimising their centrality. Instructional resources and processes, and assessment are represented in a direct line, perhaps emphasising the primary focus on the lecturer perspective, but there is no sense of the relationships between them. For example, the choice of a textbook is directly associated with assumptions about pedagogy and vice versa. Assessment methods would also influence and be influenced by choices of teaching approaches and resources required. Furthermore, personal characteristics of the lecturer strongly influence choice of content, textbook and the sequence followed. Academics are depicted in the model as an external influence whereas students are included within the circle of the curriculum. Despite these weaknesses of the framework, the categories identified serve as a useful structuring device for this study.

Lattuca and Stark’s (2011) curriculum framework has been adopted and adapted as an organising tool for this study, drawing also on the work of Posner (2004) and Hoadley and Jansen (2009). The framework used in this study is as follows, with the elements which have been altered indicated in italics:

- Purposes—the justification of “the knowledge, skills, and attitudes to be learned” (Lattuca & Stark, p. 4)
- Content—the “subject matter that is selected in order to convey the knowledge, skills, and attitudes” (p. 4)
- Sequence—“an arrangement of the subject matter and experiences intended to lead to specific outcomes for learners” (p. 4)
- Learners—how the plan caters for specific groups of learners
- *Teaching*—the *teaching* activities by which learning will be achieved
- *Resources*—the materials and settings to be used
- Evaluation—assessing outcomes and the overall plan.

The framework is used in organising the review on the literature on research methods education in Chapter 4 as well as in the descriptive analysis of the intended curricula in Chapter 6.

One of the powerful internal influences on the academic plan or curriculum is the academic discipline, which will influence purposes, content, sequencing, and instruction. Dressel and Marcus (1982) provide five useful components of an academic discipline, namely:

- Substantive, including concepts, principles, and assumptions that influence the questions asked and inquiries that are undertaken; this is referred to by Donald (2002) as the conceptual structure of the discipline
- Symbolic, comprising the language and discourse specific to the discipline
- Syntactical, referring to the ways of seeking and validating knowledge, including data collection and organisation
- Values, which are embedded in ways of viewing the world and influence decisions on what is worth studying as well as the way in which it should be studied
- Organisational, referring to the relationship of the discipline to other disciplines.

This categorisation is relevant to this study's focus on RM as preparing students to conduct research within their discipline. Donald's (2009) generic conception of an academic discipline was discussed in Chapter 2, with regard to linking disciplines to knowledge production. She defines a discipline as comprising an accepted body of theory, generally agreed research strategies and techniques for replicating and validating knowledge. Her cognitive framework for disciplinary thinking contains concepts, conceptual structure, methods of inquiry, and processes for validating knowledge.

Furthermore, Trowler's (2008) socio-cultural approach, as discussed in Chapter 2, foregrounds the role played by context, reinforcing its importance in Lattuca and Stark's (2011) model. Trowler's construct of teaching and learning regimes' (TLR) eight "moments" (p. 185) include tacit assumptions, implicit theories, recurrent practices, conventions, discursive repertoires, and power relations, all forming part of the contextual influences on course designers' curriculum choices. An associated construct is Hounsell and Anderson's (2009) ways of thinking and practicing. Specific disciplines are characterised by characteristic WTPs which inform and

inhabit the delivery of disciplinary subject content, often in an implicit and assumed rather than explicit form (Hounsell & Anderson, 2009). Trowler (2008) also acknowledges the agentic power of academics in interaction with disciplinary culture. Lecturers thus have their own disciplinary and personal identities, influenced by their academic training, PG study, work experience, and supervision record, which interacts with institutional and disciplinary culture. The influences and contextual factors thus operate in dialogical ways. A further contextual influence on curriculum is the legal, policy, or regulatory context. The regulatory context provides the general requirements of qualifications at all levels, but at PG level some of the requirements have direct reference to the design of the RM curriculum. For example, understanding of the research process and concepts is emphasised at the Honours level whereas at the Master's level conducting research and at doctoral level making an original contribution to knowledge are specified as requirements. The specific regulatory framework and context of RM curricula are discussed next.

3.4 Regulatory Framework for Postgraduate Qualifications in South Africa

The specific South African regulatory and policy framework of RM curricula directly influences designers and enactors of the curriculum. This section provides a description of the specific regulatory requirements as formulated legally at the different levels of qualifications, specifically the Honours degree, the Master's, and the doctorate in IS. In South Africa and some other countries, such as Australia, an Honours degree is a year-long qualification that follows an UG degree and serves as a bridge to a Master's degree. This regulatory framework sets the immediate context of the RM curricula for all PG research qualifications and is obviously of application to the IS RM qualifications as well.

The Higher Education Act (101/1997) formalised the Higher Education Qualifications Framework (HEQF) for implementation in January 2009 in South Africa. The HEQF provides a single framework that integrates all qualifications and enables articulation between qualifications; it also establishes common parameters and criteria for qualification design, but these can be differentiated in local contexts (SAQA, 2012). Level descriptors document the parameters at the most generic level of qualifications; they are "broad qualitative statements against which specific learning outcomes can be developed" (p 11). Levels 5 to 7 refer to UG qualifications while levels 8 to 10 specify PG descriptors. The HEQF specifies minimum credits for each level, which

provides a measure of the volume of learning required. One credit is deemed to represent 10 notional hours required to achieve the learning outcomes specified for the qualification.

The HEQF policy document on PG research (SAQA, 2007) provided an initial framework within which RM modules were designed and implemented. This early version of the descriptors for the Honours level (8), specifies that Honours programmes must “prepare students for research based PG study... [and] develop research capacity in the methodology and techniques of that discipline” (p 25). These generically worded requirements are given more concrete, detailed specificity when it is stated that the programme “must include conducting and reporting research under supervision, worth at least 30 credits” (p 25).

The current version of the HEQF level descriptors was published by the South African Qualifications Authority (SAQA) in 2012. The current document specifies a range of aspects at each level, including the scope of knowledge, knowledge literacy, methods and procedures, problem solving, ethical aspects, information management, and the production and communication of information. Selected requirements for the Honours and Master’s levels are briefly summarised in Table 3.1 below.

Table 3.1

Extracts from HEQF Sub-Framework (SAQA, 2012)

<u>Level</u>	<u>Scope</u>	<u>Literacy</u>	<u>Method and Procedure</u>	<u>Problem Solving</u>	<u>Information Management</u>	<u>Communication</u>
Honours (8)	Understand theories, research methodologies and techniques and understanding of how to apply knowledge in particular contexts	Interrogating multiple sources of knowledge and evaluating knowledge and the processes of knowledge production	Understand complexities of selecting and applying standard procedures	Use a range of specialized skills to identify and analyse abstract problems	Critically review information gathering, synthesis and evaluation procedures	Present and communicate academic ideas
Master's (9)	Critique of current research or practices as well as advanced scholarship or research	Evaluation of current processes of knowledge production as well as choosing an appropriate process of enquiry	Design, select and apply appropriate methods	Identifying, conceptualising, designing and implementing methods of enquiry	Conducting a comprehensive review of leading and current research	Defending ideas that are products of research

For level 8 (Honours), the emphasis is on understanding of the research processes rather than actual performance. This represents a change from the 2007 version where more emphasis was placed on conducting research at the Honours level. For level 9 (Master's), a far stronger emphasis on conducting research is captured in the action verbs used (such as, evaluate, conceptualise, design, implement) by comparison. For level 10 (doctoral), expertise and critical knowledge at the forefront of knowledge creation, and the conceptualising of new research initiatives dominate the framework of requirements. Emphasis falls on creation of new knowledge and contribution to scholarly debate about theories of knowledge and processes of knowledge production. Developing new methods and procedures and the application of knowledge and theory in “creative ways to address complex practical and theoretical problems” (p. 12) are complemented with an emphasis on independent judgment and publication.

In summary, the regulatory framework provides the broad context within which RM modules are designed and enacted. At the Honours level, the framework requires mainly understanding of the research process and knowledge production, with minimal emphasis on the need to conduct research. Research design and implementation choices are emphasised at the Master's level, with the further requirements of conceptualising and generating new knowledge at doctoral level.

3.5 Naming the Research Phenomenon

The use of terminology and naming conventions are important aspects in the discussion of any domain of knowledge. This importance is enhanced in a situation where the domain of knowledge is emerging and multiple constructs compete for dominance. Moreover, neophyte constructs are often not defined explicitly as they are still emerging. These constructs are often left vague and malleable, further complicating the terrain. Aspects of the formal coursework and curriculum related to RM occupy such 'no-man's land' and have been variously labelled research training, research education, research pedagogy, research methods education, and research learning. Some clarity on the distinctions between the various constructs and their connotations is needed as well as justification for the nomenclature adopted for this study.

Research preparation is a broad construct that encompasses all formal and informal activities and processes that are involved in preparing students to conduct research (Badger, Daly & Clifford, 2012). Research preparation as a construct includes formal coursework, less formal workshops, and seminars as well as informal peer discussion groups, independent learning, and supervision and mentoring interactions. Both academics (RM teachers, supervisors, and discipline lecturers) and students (peers) are implicated in the construct. The construct's breadth and comprehensive inclusiveness would be a weakness in the context of this study, where the focus is on the formal coursework and not the less formal activities.

Research training (Pearson & Brew, 2002) shifts the focus onto academics as trainers with students as recipients. The construct emphasises the requirement of the trainer to impart certain knowledge and skills to students. The knowledge and skills are often conceived as a required package or set, for example, training in the use of statistical software such as the Statistical Package for the Social Sciences (SPSS), textual analysis software (NVivo or Atlas TI), research tools such

as EndNote, library databases, or even application software (word processing, project management, or spreadsheets). The training can be provided as part of formal coursework but is more commonly provided in less formal workshops or seminars that focus on the specific knowledge and skill set required.

By contrast, the construct of research education (Dowling & Brown, 2012; Manathunga, 2005) avoids the connotations predominant in research training, emphasising the more general process of inducting students into the world of research. The term is less focused on the trainer, and the knowledge and skills implied are of a less precise nature. Ethics and attitudes towards research would form part of research education. The construct is akin to the term research preparation in including both formal coursework and less formal (supervision, workshops, and seminars) and informal learning activities but is inclusive of the entire research process. Research preparation suggests a phase in the early stages of a research career where foundations are being laid—the student will move on to later phases, the research proper, whereas research education could occur throughout the entire research process. The inclusiveness of the notion of research education is once again not entirely appropriate for use in this study, which focuses on the preparatory phase.

Research learning as a construct shifts the focus onto the learner (Jansen, Herman, Pillay & Soobrayan, 2004) rather than foregrounding the trainer, educator, or supervisor (research supervision). Deem and Lucas (2007) advocate increased focus on the student's preconceptions and changing conceptions of research and research methods. Several studies focus solely on student conceptions of research and challenges in research learning (Murtonen, Rautopuro & Vaisanen, 2007) and student experiences of learning research (Robertson & Blackler, 2006). The focus on the learning dimension is important as teaching and learning are integrally linked like the different faces of a common prism, but this study explores the formal coursework that is set in order to enable research learning to occur. The RM lecturer is the primary unit of analysis.

Recent use of the construct research methods education (Earley, 2014) offers a slightly different perspective. The construct of research education is included but with a specific focus on research methods. The construct of research methods education was first used by Garner, et al.

(2009) in their editorial introduction to a book on teaching research methods. They use other constructs, such as research pedagogy, research methods teaching, and research methods pedagogy, more or less synonymously. Research methods education was used as the name of a track at the 2011 European Conference on Information Systems (ECIS) and was subsequently used by Earley in his review of all literature related to the teaching of research methods in the social sciences. Subsequent ECIS conference tracks moved to more general research methods nomenclature, such as research methods in 2013 and research methods and philosophy in 2014. Thus, the focus on RM education was largely limited to a single presentation track at a single conference of ECIS. Furthermore, the implied emphasis on research methods is potentially limiting to a set of methods or techniques rather than more encompassing issues of research approaches and methodologies.

The existing scholarship of curriculum provides a useful lens to sharpen the focus on the phenomenon of the education of research students in the philosophies, methodologies, methods, and thinking of research. Drawing on Kridel's (2010a) conception of the curriculum as "conceiving and configuring experiences that potentially lead to learning" (p. xxix), in the context of higher education, the focus is on the lecturer's planning and providing experiences that create the opportunities for students to learn. The curriculum is an "academic plan in context" with several decisions that the lecturer needs to make about the plan and its enactment (Lattuca & Stark, 2011, p. 16). Therefore, for the purposes of this study, the construct RM curriculum has been chosen as the descriptive term. RM suggests consideration of paradigms and approaches, as well as methods. This aligns with Cecez-Kecmanovic's (2011) understanding of research RM as "an overall strategy of conceptualising and conducting an inquiry, engaging with the phenomena studied, and constructing and justifying knowledge claims" (p. 7). Curriculum, as discussed above, acknowledges the formal, structured dimension of courses and the planning and design decisions of lecturers. The construct RM curriculum also aligns with the construct research methods education which has been used previously to characterise the field.

3.6 Concluding Remarks

This chapter has developed an argument for the use of the construct of curriculum as a lens to understand the formal research preparation system comprising RM modules. A wide range of

different conceptions of curriculum was considered, culminating in the adoption of a blended understanding for this study, which is drawn from Barnett and Coate's (2004) conception of curriculum as "the design of spaces for student engagement" (p. 3), complemented by Lattuca and Stark's (2011) functional definition of curriculum as "academic plans in context" (p. 16). The complexity of the construct of curriculum was explored by looking mainly at the range of sub-categories of curriculum used in the literature, culminating in the adoption of the intended and enacted curriculum as the broad framework for this study. This complexity was further developed by consideration of various ways of looking at curriculum, using a blend of Posner (2004) and Toohey's (1999) understandings as the primary sources. The construct of RM curriculum was discussed in relation to other related research preparation constructs and its adoption for this study was motivated. Lattuca and Stark's contextual filters model of curriculum was described in some detail as the primary theoretical framework that will be used in analysing the academic plans that comprise the RM curriculum in South African public universities. The regulatory framework for PG research in South Africa was also outlined as a specific context for the RM curricula.

The understanding of curriculum that has been adopted and the conceptualisation of the intended and enacted curriculum, as well as Lattuca and Stark's (2011) model of the curriculum as academic plan, all place a primary focus on the educator as the designer and enactor of educational spaces. The student is a critical consideration in the design, but the study does not focus on the curriculum as perceived or received by the student. Primary data collection is thus located in the academic plans designed by the educator and the educator's perspective and actions in enacting the plan.

The next chapter explores the wide range of the literature related to research methodology curricula in IS. The adopted curriculum framework will be used to categorise the existing scholarship on RM as a distinctive form of curriculum, which will inform the data generation instruments and will be brought into dialogue with key themes identified in the data analysis chapters in Chapter 9.

Chapter 4

Research Methodology Curricula and Information Systems

4.1 Introduction

Chapter 2 has provided the historical context of the discipline of IS's quests for identity. Chapter 3 has identified the conceptual tools of curriculum needed to conduct a review of the scholarship of RM, which is the focus of this chapter. This triad of chapters, covering three distinctive bodies of literature, namely, on the IS discipline, on the thinking tools of curriculum, and on the RM curriculum, operate together to frame the study.

This study focuses on the formal coursework aspect of research preparation, appropriating the term RM curriculum to refer to the range of curriculum activities or dimensions that constitute this formal coursework. The previous chapter explored the construct of curriculum in general terms, settling on the conception of curriculum as an academic plan (Lattuca & Stark, 2011). The more specific notion of a RM curriculum as a special instance of curriculum was explained and justified and the terminology clarified. The curriculum lens is now used to structure the discussion of the literature related to RM curricula in general and IS RM curricula in particular.

This chapter reviews the existing literature on the RM curriculum, locating specific IS RM curriculum aspects within the general RM literature. It provides a discussion of findings, claims, and debates around issues of RM curriculum, setting the context for the study. Literature on the RM curriculum in IS is relatively limited. The domain of research methods education and training is not an established field of study (Earley, 2014), but within and across disciplines there is a diverse range of literature. Literature for this review was accordingly sourced across a range of disciplines, although priority was given to disciplines that are cognate to IS in some way. Thus, by way of example, criminal justice RM literature reflects aspects of an emerging discipline, social work is a discipline grappling with status as a profession, and education echoes issues of PG work as preparation for the world of practice. A further conscious choice was to foreground RM for the social and applied sciences, although some general aspects of RM curricula for the natural sciences are covered in the general reviews of literature across disciplines.

In order to provide structure to the discussion, the curriculum analysis framework drawn from the work of Posner (2004) and Lattuca and Stark (2011), as discussed above in Chapter 3, is

used to organise the literature into initial themes. This framework assists in identifying general themes that exist within the RM curriculum literature. These themes will be explored further in Chapters 6 and 7, which report on a sectoral analysis of PG RM curricula in IS, and Chapter 8, using two specific instances of the IS RM curriculum as illustrative cases.

The chapter is organised as follows. Two recent reviews of the broader research methods education literature are summarised as an overview of the field, followed by a review of the general research methods literature, using the curriculum analytical framework to structure the discussion. The literature on RM specifically related to IS is then reviewed against the backdrop of the more general discussion on research methods curricula. The chapter ends with a summary and some concluding remarks.

4.2 Overview of the Literature on Research Methods

An international collection of chapters on the teaching of RM in the Social Sciences was compiled by Garner et al. (2009). The authors claim to be the first to address this issue formally and emphasise the aim of building a pedagogical culture around RM teaching. The book provides a comprehensive source of claims and positions on the topic with the advantage for this study that some limited empirical work is therefore available. The wide range of aspects covered include the relationship between theory and practice, the integration of apprentice models into an RM course and the dangers of the hegemony of Western research practices (Preissle & Roulston, 2009).

A recent review of the literature on general research methods education by Earley (2014) identified 89 research studies on the topic (excluding conference proceedings). He noted three key themes across the various disciplinary perspectives on research methods teaching and learning, namely the characteristics of the students, how to teach RM courses or topics within courses, and the content of RM courses. Gaps identified in the literature include the assessment of RM and the way that students learn RM. Earley also underlines the complexity and inter-relatedness of research and how teaching RM would need to reflect this interconnectedness, where research choices have multiple impacts. In addition, he notes that it is extremely rare that training in the teaching of RM education is provided. This recent synthesis of the research literature on RM education is significant in identifying the relatively low number of publications on the broad topic as well as the relatively superficial nature of the general trends in the findings in these articles.

An earlier study by Wagner, Garner and Kawulich (2011) entitled “State of the Art in Teaching Research Methodology—towards a Pedagogical Culture”, had reviewed 195 articles from 61 journals over a 10-year period, focusing on topics and gaps. The study identified seven broad themes as follows, with their more specific findings briefly summarised in parentheses:

- RM teaching in general (very few articles)
- Teaching qualitative RM (many on using software)
- Teaching quantitative RM (many on teaching statistical methods)
- Teaching mixed methods (mainly within disciplines)
- Techniques for teaching RM (focus on course implementation)
- Teaching RM in disciplines (majority from Education [10], followed by Social Work [8], Psychology [6], and Political Science [5])
- Teaching ethics in research (2 articles).

Wagner et al. note an absence of pedagogical culture, with a predominance of “how to” articles but very little on curriculum design and RM teaching methods. Other gaps identified include the role and characteristics of a RM teacher, challenges in teaching and learning about specific RM topics, and the commonalities and differences in teaching RM across disciplines. Another gap is the issue of RM courses providing coverage of research knowledge, skills, and values in upfront coursework in preparation for actual research.

The approach of front-loading students with key initial skills (Winch & Clark, 2003) is identified and discussed in the applied fields of vocational and teacher education. The approach aims to provide students with transferable knowledge, skills, concepts, principles, and theories in preparation for actual work experience and emphasises the teaching of propositional knowledge (Berliner, 2000). Doyle and Carter (2003) identify the assumptions behind this approach, namely, that knowing precedes doing and that propositional knowledge is the highest form of knowing. The predominant focus is on the learning as a product (Hager, 2004) that is regarded as prerequisite to performance in the field. Similar issues confront RM education, and this concept of front-loading will feature substantially in the analysis chapters.

These studies have provided an overview of the research methods education 'field'. More detailed consideration of specific aspects of the RM literature, using the adapted curriculum framework to organise the discussion, is provided in the next section.

4.3 General Literature relevant to the Research Methodology Curriculum

The adaptation of Lattuca and Stark's (2011) curriculum framework was discussed in some detail in Chapter 3. The detailed adapted categories, summarised below, provide a useful framework for organising the review of the literature on the RM curriculum:

- Purposes
- Content
- Sequence / organisation
- Learners
- Teaching
- Resources
- Evaluation.

Each of the categories will be discussed below in relation to available literature and guided by its implications for IS RM curricula.

4.3.1 Purpose(s) of research methodology

The general RM literature identifies broad purposes of RM for the student as

- consuming research (Murtonen & Lehtinen, 2005)
- being a researcher (Earley, 2009; Murtonen & Lehtinen, 2005)
- building research self-efficacy (Unrau & Beck, 2004)
- being inducted into the research practice of the discipline (Sundt, 2010)
- being inducted into the research practice of the profession (Hardcastle & Bisman, 2003).

As would be expected, the stated purposes of curricula in RM education in the literature are several and varied. Murtonen and Lehtinen (2005) summarise the multiple purposes of RM courses as "to understand, consume, handle and produce scientific information" (p. 217). This encompassing description of purpose includes two key themes; these are the PG student, firstly, as a critical consumer of existing research and, secondly, as the research practitioner, handling and producing

scientific information. Other scholars note that these two themes are often regarded as a binary choice (Hardcastle & Bisman, 2003) rather than an inclusive range (Whiteman & Oliver, 2008). Debates focus on which approach is superior rather than seeing the purposes of consumer and producer as mutually complementing (Ball & Pelco, 2006).

Earley (2009) argues that RM courses should develop “reflective practitioners” (p. 103) who are equipped to make research choices appropriate to the research context rather than simply incorporating the usual focus on skill development. He sees the research process as a series of overlapping, iterative processes that require research choices; RM courses should develop these decision-making competencies in building the mindset of a researcher. He urges the purposeful inclusion of Schön’s (1987) notions of reflection-in-action as well as reflection-on-action in RM courses as reflection on choices enables ongoing evolution as a researcher. Preissle and Roulston (2009) also advocate socialisation into the “culture of research” (p. 7), echoing Eisenhart and DeHaan (2005), as the primary purpose of RM courses.

A related perspective on the purpose of an RM curriculum is offered by Unrau & Beck (2004), building on Bandura’s (1986) more general construct of self-efficacy and claiming that a primary purpose of any RM curriculum is to develop research self-efficacy. Self-efficacy can be defined as belief in one’s own capabilities to perform; these are not actual skills, but beliefs or perceptions about skills (Murtonen & Lehtinen, 2005). Thus, the RM curriculum should be designed to provide opportunities for students to build positive self-efficacy in their research knowledge and skills.

Another key dimension of the purpose of RM curricula was introduced by Hardcastle and Bisman (2003), who refer to inducting the PG student into the methodology of practice. Writing from the perspective of social work as an emerging profession, they claim that socialisation into the professional discipline is of paramount importance. Sundt (2010) offers a similar perspective from the vantage point of criminal justice RM education, where RM courses are designed to challenge students into new ways of thinking and knowing. RM courses thus induct students into the disciplinary ways of using methodological tools to critically evaluate evidence and claims. Wagner (2009) takes a stronger position on the importance of real world practice as she articulates the influence of Mode 2 type research in the claim that RM courses should be taught to reflect the

needs of the social world and knowledge industry. In her view, RM courses should prepare students for the “real world of research” (p. 836) rather than focusing only on preparation for further academic study or an academic career. This perspective downplays the importance of disciplinary knowledge.

In summary, distinct purposes for RM modules in general have been identified, including the development of students as critical consumers, research practitioners, and reflective practitioners, as well as their being inducted into the methodology of a practice or discipline. These various purposes can be seen as intersecting and complementary rather than binary choices for the course designer.

4.3.2 Teaching

The research methods education literature generally focuses on teaching or learning separately, seldom considering the two as inter-related aspects. The predominant emphasis is on the teaching approaches used in RM courses (Deem & Lucas, 2007), while others focus on the mode of delivery or student engagement. Thus, Birbili (2002) covers what should be taught and how in social science RM courses, while Metz (2001) explores the complexity of teaching RM and how to tackle epistemological and technical aspects, and Booth and Harrington (2003) advocate the use of a variety of teaching approaches, including the experiential, practical, critical, and reflexive.

The predominant mode of the teacher can be categorised into five distinct groupings:

- Transmission (Boud & Lee, 2005)
- Preparing the student for future performance (Whiteman & Oliver, 2008)
- Mentor/model to an apprentice researcher (Breuer & Schreier, 2007; Dowling & Brown, 2012; Roth, 2009; Whiteman & Oliver, 2008)
- Discipline-based (Sundt, 2010) and inducting students into the discourse (Whiteman & Oliver, 2008)
- Practice-based (Whiteman & Oliver, 2008).

To a certain degree, these categories align with the purposes discussed above in section 4.3.1. Thus, for example, the mentoring role, discipline, and practice-based approaches correspond with the purposes of developing a researcher, induction into the discipline, and practice respectively.

As far back as 1995, Brew and Boud identified three models of RM teaching: the transmission of research material (often using a textbook), the strong influence of departmental culture, and the personal research learning of the teacher. The main focus in the literature has been on the first two types, with traditional modes of delivery such as transmission as the default mode in many RM courses (Toohey, 1999).

More recently, from a UK Education perspective at the Master's level, Whiteman and Oliver (2008) outline three broad approaches to the delivery of an RM course, namely the practical, critical, and practice-based approaches. The practical approach is fairly traditional, focused on preparing students to undertake empirical work in the subsequent dissertation, using course readings on methods, examples of completed research as illustration, and use of completed dissertations as resource material. Typically, the research proposal forms a substantial component of the summative assessment. Whiteman and Oliver characterise the form of student engagement as rehearsing for a future performance. They contrast this with the critical approach, which focuses on mastering academic and methodological language, using journal articles as sources for close critique of language. Students are expected to demonstrate fluency in the use and critique of the language of research as a necessary preparation for research work; direct preparation for the research project is not covered (Whiteman & Oliver, 2008). The critical approach specifically addresses the challenge for novice researchers in mastering the academic discourses of research, in general, as well as the specific nuances of research discourses within disciplines (Preissle and Roulston, 2009).

The final approach covered by Whiteman and Oliver (2008) is the practice-based, perhaps indicating the authors preferred mode. Initially conceived as a possible reconciliation between the practical and critical approaches, this approach is described as focusing on developing the student as a researcher; problem-orientation and strong emphasis on reflection on research activities underscore the practitioner aspect of the approach, linking with the earlier discussion of Earley's (2009) reflective practitioner. Roth (2009) has similarly advocated teaching research as the

approach of praxis where the student and researcher collaborate in a form of cognitive apprenticeship. He critiques all forms of formal research methods courses and textbooks as creating additional, unnecessary distance between the theory and practice of research.

A disciplinary perspective is provided by Sundt (2010) in a detailed illustration of a teaching approach that implements Middendorf and Pace's (2004) "decoding the discipline" (p. 1) teaching approach in criminal justice RM education. A seven-step procedure is outlined whereby the teacher models disciplinary thinking and decision-making at various stages of the research process. The teacher's role in this procedure is to make explicit the way that research problems are solved in the discipline, modelling expert disciplinary thinking that generally questions assumptions, identifies limitations, interrogates evidence, and questions claims. According to Sundt, novice researchers often tend to seek to support claims rather than to question, a possible result of UG modes of teaching and learning.

Breuer and Schreier (2007) raise paradigmatic questions in their discussion of pragmatic versus paradigmatic approaches to teaching research, specifically in the context of qualitative research methods. They contend that qualitative research methods cannot be taught pragmatically as a cookbook of recipes. Preissle and Roulston (2009) also reject the recipe-approach to RM teaching but argue that a form of cognitive apprenticeship is required. This has some intersections with Sundt's (2010) notion of modelling expert disciplinary thinking as well as Whiteman and Oliver's (2008) practice-based approach. Individual supervision is espoused by Breuer and Schreier as the ideal form of cognitive apprenticeship, but a measure of apprenticeship is suggested in the other two approaches. Roth's (2009) apprenticeship by praxis has strong resonance with this approach.

Finally, in one of the few studies that report on empirical data, Strayhorn (2009) gathered data from 33 Master's and doctoral students at one US institution in order to characterise the nature of RM teaching. The findings indicated that textbook and lecture-driven courses were the most common but the least effective from the perspective of the students. Equally ironically, critique of research articles was highly rated, but the least used.

In summary, a range of teaching approaches are found in the field, including practical, critical, and practice-based approaches (Oliver & Whiteman, 2008). Disciplinary induction (Sundt,

2011) is another variation. Delivery modes include transmission (widespread though perceived by students as ineffective), article critique (least used though perceived by students as most effective), predominant departmental or institutional culture approaches, and personal learning modes of the lecturer.

4.3.3 Learning

The literature in this section focuses less on the specific research knowledge and skills that should be acquired in RM modules and more on how such knowledge and skills can be constructed. An important perspective is on lecturers' conceptions of learning and how best to engage students with the RM curriculum.

The complexity and inter-related nature of research and the concomitant challenges in reflecting this complexity in an RM course are noted by Earley (2014). Several studies explore the differing conceptions of research held by academics (Åkerlind, 2008; Brew, 2001), supervisors (Kiley & Mullins, 2005), and students (Murtonen & Lehtinen, 2005) and point to gaps and potential mismatches between the various players in the research process.

Various authors focus on student learning. Thus, Grossman (2005) points to the procedural and conceptual transformations required of students in mastering research knowledge. She uses the example of random sampling as a concept that students generally battle to grasp in order to illustrate how a seemingly simple concept (choosing a sample from the population in a random way) is transformed from its everyday meaning into a complex statistical procedure that is critical to the validity and generalisability of the study. She notes that textbooks often present such concepts as definitions to be learned and that the challenge to instructors is how to make the transformation of the concepts explicit to students; the default learning style is to learn the definition 'by heart' in a rote fashion in the belief that somehow the essence of the concept will be acquired by repeated use. The process of transforming knowledge is also discussed by Sundt (2010) who acknowledges her neo-positivist orientation in describing this transformation as first remembering, then understanding, and finally applying a concept.

Conceptions of research and the research process of teachers of RM are also explored in the literature. Kawulich (2009) argues that an RM course should ideally build on, change, and extend student's initial research conceptions as well as correcting misconceptions. Breuer and

Schreier (2007) contend that, in the context of teaching qualitative research methods, teachers must have a theory of how qualitative research is learned. They further argue that this theory should be explicit, in contrast to the often implicit theories of how quantitative research is learned. Joyes and Banks (2008) echo this concern, asserting that teachers of RM need to be continually reflecting on how knowledge about research and research methods can be constructed and how the range of cognitive models can be used to put the necessary scaffolding in place for students.

In summary, the literature emphasises the complexity of teaching and learning RM due to the inter-related and iterative nature of research. This is further complicated by the often diverging conceptions of research by academics, RM lecturers, supervisors, and students. A strong case is made for RM lecturers to have explicit theories about how research skills and knowledge are best learned.

4.3.4 Content

The key issues in the general RM literature revolve around

- adopting a specific paradigm (Breuer & Schreier, 2007) for the course or covering multiple paradigms and methods (Wagner, 2009)
- whether to present a generic RM course (Roulston, Preissle & Freeman, 2013) or to situate the RM course within the discipline (Roulston, Preissle & Freeman, 2013; Sundt, 2010)
- to what extent discipline theories should be included in RM courses (Kawulich, 2009)
- whether ethics is a stand-alone topic or embedded throughout the course (McAuliffe, 2009)
- the centrality of a literature review, which is widely supported (Boote & Beile, 2005)
- the degree of emphasis on Mode 1 or Mode 2 research or a combination of both (Wagner, 2009).

A common thread across disciplines relates to debates about the respective merits and appropriateness of quantitative, qualitative, and mixed methods research approaches. In the past, “teachers of research have faced strong pressures to polarize into a qualitative and quantitative dichotomy” (Taylor, 2007, p. 80). Many scholars advocate a particular approach, for example, mixed methods (Onwuegbuzie, Johnson & Collins, 2009; Onwuegbuzie & Leech, 2005; Tashakkori & Teddlie, 2003). However, these debates are often not related to the teaching of RM but are discussed in more general terms related to their relevance and appropriateness to the

discipline. Indirectly, such debates could be construed to refer to whether one of these approaches was preferred in RM teaching or whether a form of paradigmatic pluralism was the ideal.

Three possible forms of RM courses are identified by Wagner and Okeke (2009): a) predominantly or solely quantitative, b) predominantly or solely qualitative, and c) a systematic combination of quantitative and qualitative. They warn of the danger of unexamined assumptions in selecting a model for the RM course and advocate the need for making explicit the assumptions and considerations in choosing. They question whether universities can afford to offer mono-method research courses in the face of the divergent demands for methodologies and methods in practice. Furthermore, they critique so-called “two-track courses” where qualitative and quantitative approaches are presented separately, mirroring many research textbooks, as “training for schizophrenia” (p. 68).

Wagner’s (2003) PhD research on the teaching of RM in psychology found that doctoral theses frequently replicate the predominant paradigm and methodology emphasised in RM courses. The choice of paradigm and methodology thus has weighty implications for students’ methodological emphases as well as their future research. Wagner and Okeke (2009) agree with Silverman (2011) and Polkinghorne (1992) that the choice of method should depend on what one is trying to find out. Thus, RM courses should equip students to make informed research choices rather than to be “good practitioners of methodologies” (p. 69). Wagner and Okeke (2009) argue for methodological plurality in RM courses, based on critique of all research approaches used. Indeed, methodological pluralism is widely supported as appropriate for the social and applied sciences. Wisker, Robinson, Trafford, Creighton and Warnes (2003) argue that educational researchers should not be too strongly tied to a specific paradigm. Tashakkori and Teddlie (2003), advocating widespread use of mixed methods approaches, claim that methodological pluralism is required in order for research, in general, to be useful to society. A distinction must be drawn here between the construct of methodological pluralism and the mixed methods paradigm. The latter refers to deliberate use of multiple paradigms and their related methods in a single research study (Creswell, 2013) whereas the former is a less paradigmatically oriented construct entailing familiarity with and use of a variety of research methodologies and methods in a single study (Mingers, 2003). Overlaps and intersections exist between the two terms, but they are not synonymous, although sometimes used synonymously.

Several other authors reiterate the claims for methodological pluralism (for example, Braumoeller, 2003; Wagner & Okeke, 2009) in social research. Coronel Llamas and Boza (2011, p. 79) argue for “a high degree of methodological sophistication and flexibility” in educational researchers in order to appropriately choose research methodologies for educational research problems. Wagner’s (2009) advice for future RM courses in the social sciences includes suspending recurrent quantitative-qualitative debates, blurring disciplinary boundaries, cultivating transdisciplinary thinking, and developing pragmatic mindsets towards mixing methods. She acknowledges other influences on the content of RM courses, such as personal epistemologies, the structure of textbook, and research funding requirements that privilege quantitative approaches but advocates the goal of pragmatic methodological pluralism.

A second aspect of the content of RM curricula is related to the debate between generic and disciplinary-based RM courses. Proponents of generic RM courses (Leedy & Ormrod, 2005; Sekaran & Bougie, 2003) argue that research training on methodologies, methods, and analytical tools can be presented independently of disciplines. The challenge to teachers of generic RM courses is to deal with the variations in terminology and inconsistent use of the same terms across disciplines by providing coherent scaffolding for novice researchers that can articulate with disciplinary discourses at a later stage (Preissle & Roulston, 2009). Preissle and Roulston contrast these with traditional disciplinary RM courses that present research skills and knowledge within the context of the discipline, using specific disciplinary theories and preferred methodologies and methods as an induction to disciplinary research skills. The aim in traditional disciplinary courses is congruence between the subject matter of the discipline and its knowledge production (Preissle & Roulston, 2009).

A related aspect of content is the issue of theory in RM courses. Kawulich (2009), from the perspective of qualitative research in educational leadership in the US, argues for the centrality of theory in designing RM courses and advocates coverage of the core disciplinary theories early in the course. She claims that all disciplines have core theoretical frameworks that are either explicit or implicit and that these theories have powerful influences over all aspects of the research process, including the research questions, data collection methods, data analysis, and interpretation of results. From this perspective, research is thus largely theory-driven, with some arguable exceptions such as grounded theory, and, according to Kawulich, these theoretical assumptions

need to be made explicit early in RM courses. Clearly, this strong advocacy of theory coverage would require RM modules to be intimately related to and offered by specific disciplines, rather than being generic.

With regard to ethics as a topic in RM courses, McAuliffe (2009) focuses on the need to embed ethical dimensions and decisions throughout courses instead of maintaining the traditional one-session coverage which is often mirrored in textbooks. According to McAuliffe, research choices at various stages of the research process should be presented within an ethical context in place of the normative delivery of ethical ‘dos’ and ‘don’ts’ common to many RM courses.

Another key issue of content is the relative importance of the literature review. A seminal article by Boote and Beile (2005) in the context of doctoral preparation for education research argues for the centrality of the literature review as a key topic in RM courses. The article makes a strong case for extensive coverage of the skills required in reviewing the literature as an integral part of an RM course. The authors bemoan the perfunctory, routine treatment of the literature review in many RM textbooks, journal articles, and RM courses and argue for the merits of a thorough, scientific literature review as a prerequisite for the selection and refinement of the research topic and related choice of methodology, methods, and analytic methods. The abstract makes the case for focal and extensive literature review preparation in RM courses:

Acquiring the skills and knowledge required to be education scholars, able to analyze and synthesize the research in a field of specialization, should be the focal, integrative activity of predissertation doctoral education. Such scholarship is a prerequisite for increased methodological sophistication and for improving the usefulness of education research. (Boote & Beile, 2005 p. 3)

A predominant focus on issues of methodology and method in textbooks, journal articles, and RM courses is identified as resulting in poorly conceived and written literature reviews. Boote and Beile argue for dissertation and journal research to contribute in building communal knowledge but that this requires prerequisite attention to building the skills of thoroughly interrogating and critiquing existing literature.

The strong advocacy of the literature review as central to the RM curriculum is echoed by a number of articles in the IS research methods literature (Levy & Ellis, 2006). Furthermore, a number of articles propose using the systematic literature review methodology in IS (Okoli & Schabram, 2010). These ideas will be discussed in greater detail when the IS RM curriculum is considered in sections 4.7.2 and 4.7.3 below.

4.3.5 Organisation

Two key issues are found in the literature:

- Within a module, to what extent, if at all, is the actual research project developed?
- To what extent is research preparation covered at UG levels?

Posner's (2004) construct of curriculum organisation includes consideration of macro structures of a curriculum (vertical and horizontal) as well as micro considerations (sequence within subjects). A macro focus would consider designed linkages between different levels of research methods education. Saville (2008) exemplifies such a macro focus in psychology, where an introductory module at UG level may be followed by more specialised RM courses in statistics and design at PG levels. Alternatively, a spiral approach is adopted with an introduction to all aspects of research in initial courses, followed by more in-depth coverage in advanced courses; aspects are revisited in subsequent courses, but this is with the intention of an ever-deepening of understanding and complexity (Posner, 2004).

Pascal and Brown (2009) provide a detailed description and justification of a complete research programme in social work at La Trobe University in Australia. The research curriculum is spread over four years, the last three years of the 4-year UG degree and one year at the Honours level. Year 2 focuses on the philosophical concepts of ontology and epistemology, discussing embedded assumptions in approaches and illustrating these concepts with students' previous experience. Qualitative and quantitative approaches to research are similarly explored. Year 3 focuses on critical thinking, using research articles to build skills of critique and reinforce the concepts from Year 2, followed by aspects of literature reviewing. In the final year of the UG degree, students move from the previous phase as critical consumers of research to starting knowledge production. Research proposals for a future independent research project are

developed, followed by a section on ethical aspects of research. The independent research project is completed in the Honours year. This account highlights the principle of introducing research concepts in phases across the UG degree as well as the choice to focus on philosophical and methodological concepts in the first year of offering. By contrast, the majority of methods courses across disciplines, with some notable exceptions such as psychology and sociology, are offered for the first time at PG level (Saville, 2008).

Possible disjunctures between UG and PG programmes may also contribute to the challenges of RM curriculum choices. Kiley, Boud, Manathunga and Cantwell (2011) report on the challenges for students of switching from the predominant UG goals of knowledge acquisition to increased emphasis on knowledge production in selected Honours programmes in Australian universities. Honours programmes are common in former British colonies and clearly form an important focus of this study. Australian Honours programmes are “primarily a pathway to PG research” (p. 2) and are described as “moments of transition” (p. 6). The authors present empirical evidence which identifies an uncomfortable mix of courses emphasising knowledge acquisition in tension with research methods and research projects modules that attempt to inculcate knowledge production. They argue for greater integration of and alignment between courses within the Honours programmes, as well as introductory research coverage at UG level.

At a micro level, intra-module organisation is the focus. Benson and Blackman (2003) advocate a RM course structure in a UK business school that includes eight weeks of front-loaded theoretical material, with the rest of the course comprising practical, hands-on tutorials applying the theory to specific research topics. The authors indicate that the split design of the course was a direct response to the predominantly theoretical emphasis in previous RM courses: this course prepares students for the subsequent research dissertation and was redesigned to emphasise increased experiential, active learning by students, with supervisors of the dissertation research being formally included in the practical, tutorial aspects of the RM course (Benson & Blackman, 2003). The notion of front-loading theoretical material suggests a predominantly transmission mode of delivery and a largely absorptive mode of learning, especially in the early stages. Despite the emphasis on active learning strategies in the article, a substantial part of the course is characterised as front-loading. An alternative intra-module structure is to present the RM module as tightly integrated with the research project, covering RM concepts and skills as needed by the

unfolding research. Preissle and Roulston (2009) assert that “practical engagement in field-related exercises and authentic research activities is integral to discussion of theoretical issues” (p. 16). In addition, individual and group supervision are integrated into the RM course, providing a range of learning possibilities.

In summary, research methods curriculum organisation varies across disciplines and even within the same discipline across institutions, from at one extreme distribution across UG years (Pascal & Brown, 2009) to at the other extreme concentration in a semester or year module at PG level. Sequencing of material varies similarly; for example, philosophical concepts may be dealt with first (Pascal & Brown, 2009). Textbooks show a wide range of sequencing. A common structure is to separate qualitative and quantitative coverage (Wagner & Okeke, 2009), although the limitations of this approach have been highlighted. In general, IS RM courses follow the pattern of a concentrated introduction to research at PG level with no coverage at UG level (Byrne & Lotriet, 2007). Sequencing of topics in actual cases of IS RM curricula will be discussed in greater detail in Chapter 8.

4.3.6 Resources

Typical discussions of resources focus mainly on textbooks, journal articles, quality of Internet sources, and more broadly the role of technology in accessing and managing resources. The primary topics in the literature include

- textbooks (Breuer & Schreier, 2006; Hassan & Nutov, 2014; Roth, 2009; Strayhorn, 2009)
- technology (Buckley, Brown, Olsen & Carter, 2015; Nind, Kilburn & Luff, 2015; Nunes, 2009; Scott Jones & Goldring, 2015; Silver & Woolf, 2015; Strayhorn, 2009).

Strayhorn (2009) provided empirical evidence that textbook reading was the most common teaching strategy yet rated by students as the least effective. Hazzan and Nutov (2014) argue that qualitative research textbooks provide a useful baseline for discussion, but that the onus is on the lecturer to supplement and complement the textbook. The textbook is likely to be the dominant resource in a transmission–consumer mode of RM teaching and learning (Whiteman & Oliver, 2008). However, Roth (2006) questions the value of textbooks, specifically as part of the RM curriculum for qualitative research. He claims that textbooks do not reflect the complexity of research as context is often removed in abstracting the essence of research methodologies and

methods. He critiques general textbooks that aspire to provide general principles and techniques of research, claiming that they actually distance readers from the practice of research. He accuses authors of “ventriloquizing” (p. 3) the experiences of others, making strong claims of lack of authenticity. He makes a more general point about the problem of learning about research—understanding research (methods and methodologies) requires some prior knowledge and understanding about research. Thus the problem for novice researchers is the gap between theoretical plans or recipes and the situated reality of research practice (Breuer & Schreier, 2007). Roth (2009) illustrates the gap between what is learned, largely from textbooks, and what is needed to do research, claiming that students need to “learn to do research by doing research” (p. 114). He argues for a “praxis of method” (p. 111) whereby research education is based on the situated, context-laden stories of actual research projects, a form of cognitive apprenticeship.

Technology is another potential resource. Nunes (2009) argues for the increased use of technology, in particular ICT, in the teaching of RM. He focuses on information retrieval and data analysis as the two primary aspects where technology is currently useful, allowing for expanded technology support in future. According to Nunes, RM courses should include training on library research tools for searching and sourcing key articles on the research topic. Furthermore, he claims that training in the use of research tools, such as reference managers, citation databases, and citation tools, should be an integral part of the RM course and their use mandatory.

Other scholars have critiqued over-reliance on software as a research tool (Buckley, Brown, Olsen & Carter, 2015; Scott Jones & Goldring, 2015; Strayhorn, 2009). Silver and Woolf (2015) identified the challenges of teaching Computer Aided Quantitative Data Analysis (CAQDAS) in a manner that emphasises the software as useful tool enabling deeper consideration of methodology. Nind, Kilburn and Luff (2015) also identify the need to teach the use of software for data management in RM modules.

In summary, Nunes (2009) outlines some current technology aspects that should be included in RM training and predicts increasing integration of ICT with research preparation. Other scholars caution against over-reliance on software. IS as an applied technology discipline would certainly endorse these recommendations, and the specific uses of IT as a resource in RM modules is further discussed in Chapter 6. With regard to the more traditional textbook as resource,

Roth (2009) points to the gaps between the potential research learning from the material generally included in prescribed textbooks and the actual research knowledge and skills required in the field. The possible implications of this will be touched on below in considering assessment in RM modules.

4.3.7 Assessment

Assessment has often been claimed to be the primary driver of the received curriculum, since what is assessed counts (Prosser, Ramsden, Trigwell & Martin, 2003). One of the primary assessment tasks in many RM modules is the research proposal (Lei, 2010; Whiteman & Oliver, 2008). The research proposal has a unique status in the RM module as summative to the module while it is formative to the research project (Benson & Blackman, 2003).

As an illustrative example of best practice in RM assessment, James, Ward, Dickson-Swift, Kippin and Snow (2009) describe their RM course in public health at La Trobe University in Australia. Research preparation is an integral part of their UG programme with a research aspect in each year of study. The focus of the assessment is to enhance student learning, and it includes the following general principles:

- Course design and assessment tasks based on professional body competencies
- Learning objectives directly linked to assessment
- Balancing assessment of theory and practice
- Balancing assessment of individual and group project work
- Developing assessment that builds on previous knowledge (James et al., 2009).

The emphasis on competencies required by professional bodies is in keeping with the field of public health, ensuring that research topics are related to practice. As an applied discipline, similar to IS, the primary focus of the assessment is on the practical application of the theoretical knowledge, for example, conducting an in-depth interview. Most of the principles are fairly generic rather than being specific to the challenges of preparing PG students for research.

In summary, the general RM literature on the specific topic of assessment in RM modules is relatively limited. The generic principles advocated by James et al. (2009) are applicable to any course design, but sections below on the assessment of RM in IS provide more specific RM-focused principles.

4.3.8 Summary of key decision points in research methodology curricula

The following challenges and choices in the RM curriculum for designers and RM lecturers have been identified and are listed here as a summary:

- Choosing between Mode 1 or Mode 2 research or including both (Wagner, 2009)
- Methodological pluralism as the new hegemony (Wagner, 2009) or following mono-methods
- Previous experience of students as foundation for research learning as opposed to an abstract focus on theoretical knowledge (Murtonen et al., 2007)
- The gaps between theory and the context of research practice (Roth, 2009)
- Disconnects between UG and postgraduate programmes (Byrne & Lotriet, 2007).

The next section narrows the focus to curriculum issues raised in the business research literature. The focus will be on raising key curriculum issues in thematic order rather than using the curriculum categories to organise the discussion. The issues raised in this section form an important backdrop to the focused discussion of RM curriculum specific to IS and, even more specifically, IS in SA, which follows.

4.4 Business Research Methods Curriculum Issues

The field of business research has been recognised as a separate field of study with its own journals, textbooks, and conferences. Business disciplines such as management, organisation studies, and IS are included under the broad banner of business research. More specifically, the European Conference on Business Research Methods has been running annually since 1990, and the associated journal, *European Journal of Business Research Methods* started publishing in 1994. Both have a specific focus on research methods within the broader field of business research. The business research methods literature reveals a fundamental division over introducing students to a single methodology in detail as opposed to more common calls for methodological pluralism.

4.4.1 Mono-method approach

This approach emphasises the need to present a clear, focused introduction to research by using a single methodology. It is starkly exemplified by the RM by numbers approach (Myers, 2011), presented as a general RM module for all UG commerce students at the Durban University of Technology in South Africa. The compulsory module follows a step-by-step sequence, driven by assessed assignments with extensive tutor support, which delivers a paper as final product using a purely quantitative approach. Individual steps are choreographed into a fail-safe formula that lead students through the practical steps of ‘doing’ a research project. Myers (2011) claims that the approach has been adopted to minimise the complexities of research for novices and has been adopted as standard practice for all universities of technology in South Africa.

4.4.2 Methodological pluralism

By direct contrast, Knox (2004), bemoaning the tendency of textbooks to present quantitative and qualitative approaches separately for clarity of explanation, advocates a version of methodological pluralism. Thus, methods are not tightly coupled with philosophical or paradigmatic perspectives but are drawn upon in relation to the needs of the research question. Knox argues for an “elective affinity” (p. 119) between methods and theory rather than the tightly essentialised position that certain methods are solely quantitative and others qualitative. He critiques the well-known Saunders, Lewis and Thornhill (2003) research onion for presenting research choices as binary decisions that move through an inexorable algorithm of elimination to arrive at the appropriate method(s) to use for a particular research problem. The research onion’s strengths as a clear explanatory diagram are thus compromised by the reduction to binary decisions that belie the complexities of these research decisions.

A similar case for methodological pluralism as opposed to methodological conservatism is made by Trauth (2011), in the context of gender studies and IT and emphasising real world research problems. According to Trauth, the primacy of the research question in influencing the form and nature of the research requires flexibility in the range of methodological tools that can be used, in turn requiring students to be introduced to methodologies as a range of choices along a continuum. Remenyi (2002) presents an argument that focuses on the similarities rather than differences between traditionally separated qualitative and quantitative approaches, although he also emphasises the research question as key in guiding the researcher to choosing the most

appropriate method or combination of methods to answer the research question. There is a corollary to these calls for methodological pluralism and Cameron (2009) highlights the need for researchers to be proficient in a wide range of research methodologies and methods, including quantitative, qualitative, and mixed methods approaches, with obvious implications and challenges for RM curricula.

4.4.3 Relevance as common purpose of research

Trauth's (2011) advocacy of business research as primarily responding to real world problems is supported by scholars such as Venable and Baskerville (2012). Writing in the context of universities of technology in Australia and from an IS perspective, Venable and Baskerville claim that business research has to respond to three primary challenges. These challenges are to explain and understand existing business practices, to design and evaluate new business practices, and to critique existing practices. They claim that the first challenge is relatively well covered by the qualitative and quantitative studies in the literature but that aspects of design science and critical research are relatively under-represented.

4.4.4 Aspects of content

Earlier discussion has implied the necessity to include certain topics in business RM curricula. Mixed methods approaches (Cameron, 2009), critical research (Trauth, 2011; Venable & Baskerville, 2012), and DSR (Venable, 2010) are advocated as key RM topics by various scholars.

Two additional topics are research ethics and the literature review. The case for the importance of ethical dimensions in the RM curriculum is made by Naimi (2007). She outlines a complete research ethics curriculum for doctoral students that includes ethical issues as part of each content topic instead of the traditional approach of packaging ethics as a separate chapter or topic. Preissle and Roulson (2009) report that most research textbooks include sections or a chapter on research ethics. McNamee and Bridges (2002) question the sufficiency of preparation in research ethics. Institutional ethical procedures are a useful baseline, but also need to be supplemented by consideration of ethical issues, for example sources of bias, at various stages of the research (Pascal & Brown, 2009). In particular, the complex ethical challenges that confront a student researching the organisation where they work demand nuanced discussion of the insider

researcher issue (McNamee & Bridges, 2002). McGinn and Bosacki (2004) identify the increased ethical complexity for practitioner-researchers and the challenges of multiple roles with various ethical aspects.

Arguments in favour of including systematic literature reviews in the business RM curricula are made by Armitage and Keeble-Allen (2008) with the concomitant need for systematic literature searching (Page, 2008). This topic is strongly advocated in the IS RM literature and will be discussed in more detail in section 4.6.3 below.

4.4.5 Challenges for business research methods

In addition to the plea for methodological pluralism, Trauth (2011) outlines several general challenges for business research drawn from her work in gender and IT, mainly in the US, with implications for the RM curriculum. Firstly, methodological pluralism results in a wider variety of epistemological choices, requiring a clear sense of the strengths and weaknesses and of the different goals of different methodologies. In addition, common pleas for research to address real world problems, which are often multidisciplinary, introduce the challenge of accessing and building on disparate literatures and theories. Furthermore, she argues that the traditional academic literature may be too narrow and exclusive to fully address messy real world problems, advocating inclusiveness of grey literature. Thus, the importance of articulating the researcher standpoint, even for traditional quantitative research, becomes accentuated in this milieu of real world inclusiveness (Trauth, 2011). Trauth asserts that recognition of multiple stakeholder perspectives and awareness of those that are privileged should inform research decisions. In line with her inclusive perspective, she urges the widening of conceptions of theory to acknowledge the importance of theory building as an equivalent to traditional theory testing and extension.

Thus, a key issue confronting RM lecturers is the choice between providing students with an orientation to the full complexity and messiness of the research terrain (competing and complementary paradigms and methodologies, the range of viewpoints and stakeholders, and the multidisciplinary nature of real world problems) or simplifying the research terrain to aim at mastery of a single coherent approach, methodology, and related methods. The former runs the risk of leaving students bewildered by the multiple options and dimensions at each turn whereas

the latter may result in blind adherence to the chosen approach. A more likely scenario is that RM modules would find a place along a continuum between these two polar extremes.

4.5 Research Methodology Curriculum in Information Systems

This section considers some of the key literature on RM in IS on the international stage. Two RM frameworks are presented. This is followed by discussion of some key issues in IS research that have a direct implication for RM curricula, including the paradigm of evidence-based practice (EBP) and its emphasis on the teaching of literature review as topic, as well as the emergence of the systematic literature review as a specific methodology in IS. The section ends with discussion of some useful and illustrative resources presented in the academic literature and a brief discussion of issues of assessment in RM curricula.

4.5.1 Research methodology frameworks

Cecez-Kecmanovic (2011), writing from a critical perspective in Australia, reminds readers of the prevailing dominance of positivist research in IS but also points to the spin-off concern with rigorous research methods, even in qualitative studies. She argues that critique of research in IS often focuses on the methods used and their degree of rigour to the exclusion of other considerations. This “methodological foundationalism” (p. 2) assumes that a research method’s correctness can be determined a priori and that the research results will be valid provided that the method is executed rigorously. Cecez-Kecmanovic advocates focus on the methodology of the research and conceives methodology as

a theory of inquiry that is contextually sensitive and evolving within a research project. The return to methodology would involve a continuous interplay between assumptions about the phenomena studied and the practical questions of designing research strategies and selecting and adopting research methods underpinned by the assumptions. (Cecez-Kecmanovic, 2011, p. 9)

Thus, methodology evokes the ontological, epistemological, and methodological assumptions guiding research choices but is also sensitive to and influenced by the context of the phenomenon being studied. The methodology can be adapted during the study rather than being a rigid implementation of methods. Cecez-Kecmanovic (2011) distinguishes methodology from methods:

Research methodology, as argued above is much more than a selection or combination of research methods. It is concerned with an overall strategy of conceptualising and conducting an inquiry, engaging with the phenomena studied, and constructing and justifying knowledge claims. (p. 7)

In Figure 4.1, Cecez-Kecmanovic (2011) maps the RM mindscape into three closely related layers, namely meta-theoretical, methods, and research techniques and tools.

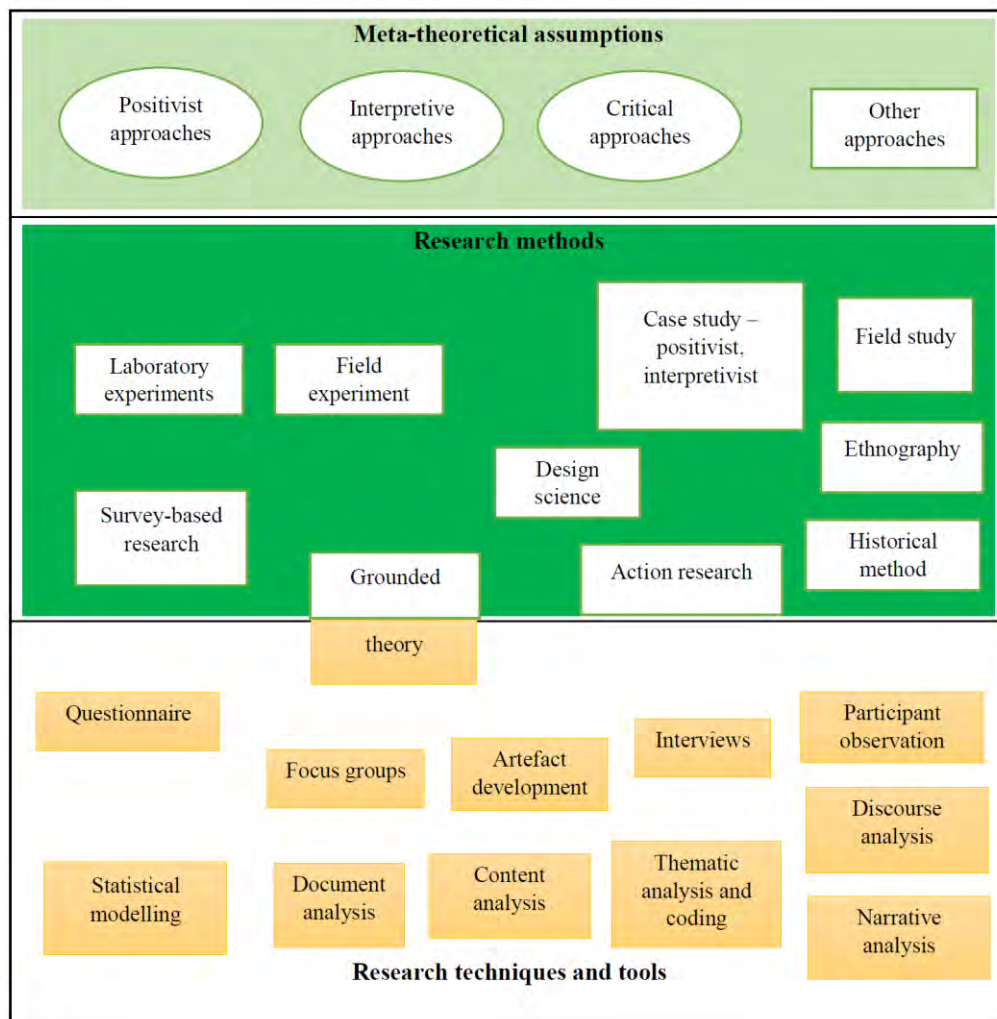


Figure 4.1. Methodology mindscape Cecez-Kecmanovic (2011, p. 4).

The meta-theoretical layer focuses on paradigmatic choices and their associated ontological and epistemological aspects. For example, a paradigm such as positivism would have a set of cognate methods and techniques that are in alignment. It is significant that the three traditional paradigms

are complemented by an “other” category, allowing for the possibility of less widely accepted paradigms such as mixed methods or DSR. However, Cecez-Kecmanovic resists strong determinism in these linkages, arguing for a flexible range of research possibilities at the bottom two levels. A research project is thus conceptualised and conducted by making choices at each level, mindful of the range of linkages between the different levels of choice. The RM mindscape is similar to Saunders, Lewis and Thornhill’s (2003) research onion used in a popular business research methods textbook and discussed earlier. Cecez-Kecmanovic groups the methods and the techniques and tools loosely, allowing for the possibility of a wide range of choices driven by the nature and form of the research problem and by the context. The boundaries between paradigms are relatively porous, allowing for the possibility of creative tensions between different paradigms and methods. In this conception of the RM landscape, the formal RM curriculum would be obligated to provide wide-ranging coverage of the various paradigms, methods, and techniques in order to enable informed research decisions.

Ellis and Levy, from the US context and over a time frame between 2006 and 2012, provide a range of teaching resources and guidelines for teachers of RM in IS. They are among the few scholars who have attempted to document and theorise aspects of the RM curriculum, and they provide a useful counterpoint to Cecez-Kecmanovic’s (2011) pluralistic approach. The Ellis and Levy (2008; 2009) problem literature data (PLD) model for the selection of research method(s) for specific study types (in IS these are experimental, correlational, grounded theory, development, case study, action research, or ethnographic) is intended to guide novice researchers. The PLD model claims that research methods are influenced by, first, the nature of the problem, second, the peer-reviewed, quality literature on the topic and methodologies used in the past, and, finally, the accessibility and nature of the data. Novice researchers are encouraged to employ methods documented and accepted in the research literature. This relatively conservative approach contrasts with Cecez-Kecmanovic’s strong emphasis on the research problem and context as being the primary influence on the choice of research methods.

Ellis and Levy (2008) expand on the problem dimension of the PLD model, introducing the construct of a research worthy problem. The emphasis on problem-based research in the PLD model is argued for, using a range of RM textbooks (Kerlinger & Lee, 2000; Leedy & Ormrod, 2005; Sekaran & Bougie, 2003), as supporting the centrality of the research problem to all aspects

of the research, especially the choice of method. Ellis and Levy rely heavily on Sekaran and Bougie's (2003) definition of a research problem as being a situation or phenomenon which is less than ideal and to which no immediate solution is known. They assert that IS research should be built around a clear problem statement that delineates the nature of the problem and justifies the need for the research. They provide a range of examples that are not research-worthy problems (comparing groups, correlations of data, yes/no questions, personal hunches) as well as scaffolding questions to assist the novice researcher in framing the problem statement. One of the pre-conditions of a RWP is that it is based on a thorough review of existing literature on the topic, an issue that will be discussed in more detail in the next section.

Ellis and Levy (2006; 2008) present a relatively traditional approach to research in IS, compared to the framework argued by Cecez-Kecmanovic (2011). The strong emphasis on a problem to solve contains elements of pragmatism typical of business research in general. Furthermore, Ellis and Levy's strong reliance on topics and methods drawn from and supported by the literature acts as a constraining influence on the researcher. The implications for RM curriculum are that strong reliance on one of the traditional textbooks, supplemented by checklists and guidelines, is the safe approach. The authors are silent on the issue of methodological pluralism in RM modules, by implication leaving this decision to the lecturer.

4.5.2 Literature review as key topic

In general, the process of reviewing the literature has traditionally been a topic in RM modules. In 2002, Webster (Queen's University, Canada) and Watson (University of Georgia, US) wrote a lengthy editorial for *MISQ* identifying the lack of review articles as one of the contributors to the slow development of theory in the discipline of IS. The editorial included a number of guidelines (sourcing relevant literature and use of a concept matrix to build concept-centred reviews) and suggestions for writing review articles, inviting such articles for publication in the *MISQ* Review. The authors identify two broad types of review article. These types are, first, a synthesis of the literature on a mature topic followed by a conceptual framework indicating how the research can be taken forward and, second, the development of a conceptual framework for an emerging topic. In both cases, the intent is to take the research into the future. The upshot of the editorial was to spark fresh interest in the topic of the literature review, spilling over into RM modules.

Levy and Ellis (2006) extend Webster and Watson's (2002) ideas by adding the concept of a systems approach (input, process, and output) to the literature review. Furthermore, they add Bloom's cognitive categories (describe, interpret, classify, synthesise, and evaluate) to the process dimension:

An effective review must describe the major points contained in an article, interpret those points, classify the article's position in the BoK, explain the importance of the article, compare and contrast the findings and position of the article with other articles from the BoK, and evaluate the findings of the article in light of the rest of the BoK (Levy & Ellis, 2006, p. 205)

Some of the practical guidelines provided include using an annotated bibliography to document the literature comprehensively and Toulmin's theory of argument for writing the review using claims, evidence, and warrants.

4.5.3 Evidence-based practice and systematic literature reviews

Oates (2011) advocates evidence-based practice (EBP) as a useful paradigm to address the perennial IS debate about relevance in research. EBP has two key aspects, namely, the use of systematic literature reviews (SLRs) and the dissemination of research within the practitioner community. The traditional use of an SLR in medicine is to perform a summative, statistical review of all empirical studies on a specific topic, thus providing a quantitatively supported summary of effective interventions (Oates, Edwards & Wainwright, 2012). These positivist associations have often been regarded as too limiting and inappropriate for qualitative research, but a number of scholars have adapted the SLR methodology to suit less positivist uses. Oates presents an adapted 8-step SLR process, drawing on a pair of articles by Kitchenham et al. (2009; 2010) on the use of SLR in software engineering. This approach to using an SLR in IS research has an explanatory emphasis rather than the traditional summative focus. The use of adapted SLRs in dissertation writing at the Master's level was explored in earlier work by Oates and Capper (2009). Students were required to complete and submit an SLR as a prerequisite for developing the research proposal. Armitage and Keeble-Allen (2008) present a detailed SLR approach, named the rapid systematic literature review. A more developed and generic model of SLR for use in qualitative research was presented at ICIS in 2012 by Oates et al., building on some of the earlier work.

In summary, there appears to be strong advocacy for some form of adapted SLR in IS research and PG study. Designers of RM curricula would need to weigh this relatively recent trend and decide whether to use the SLR methodology and how much emphasis to give it.

4.5.4 Thinking tools for research

This section provides an overview of a range of teaching and learning resources that are discussed in the RM literature, particularly in the context of IS research. These resources relate to one of the common challenges in designing and conducting research, namely, the alignment between various aspects such as research questions, paradigm, methodology, and methods.

As far back as 1997, Stewart documented use of Gowin’s Vee heuristic as a way for students to critique a journal article by following a series of steps that consider the various aspects that need to be in alignment. The Vee heuristic was also used by Stewart as an aid for students designing their research proposals. Stewart reported success in using the Vee with quantitative studies but limited adaptation of the heuristic to qualitative studies, which was identified as a possible future research topic. The Vee diagram is shown in Figure 4.2:

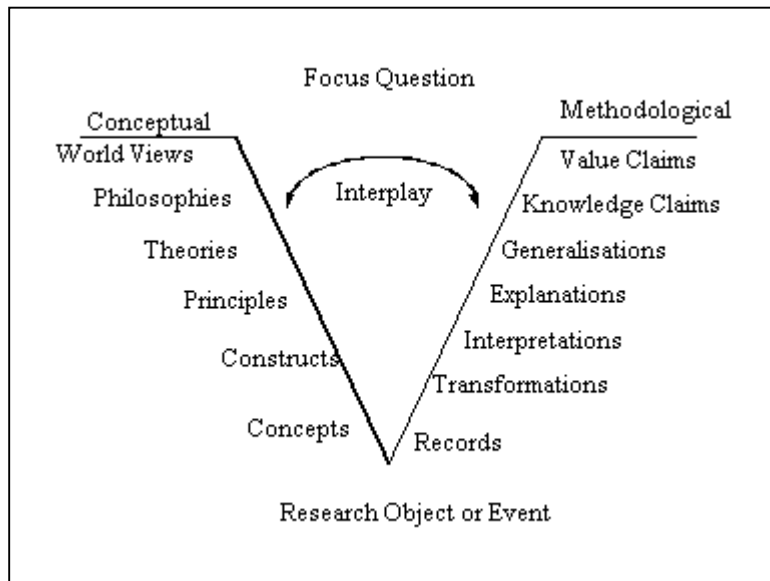


Figure 4.2. How to make sense of knowledge (from Novak, 1984, p. 34).

Fox (2007) reports successful use of Gowin’s Vee in geography RM modules that follow a social constructivist approach. The concept of the theory and focus question constraining design and data collection methods resonates with Cecez-Kecmanovic’s (2011) RM map.

Klopper and Lubbe (2012) discuss the use of matrices to scaffold novice researcher's construction of a problem statement, sub-problems, research questions, and research instrument items. They also develop Webster and Watson's (2002) concept-centric literature review matrix into an electronic spreadsheet that assists students in identifying core concepts (discussed in several references) as well as in identifying key authors and, by extension, journals. Sammon, Nagle and Finnegan (2011) extend this idea in developing a pedagogical artefact for doctoral students. The artefact is also in matrix form but includes columns for the student to assess the quality of the article, using the journal or conference source and author status to provide an indicator of quality.

In the next section, the focus narrows even further to consider aspects of RM curricula in IS discussed in a South African context.

4.6 Information Systems Research Methodology Curriculum Issues in South Africa

Inclusion criteria for articles that could be classified as dealing with curriculum issues in South Africa included the author's nationality and home institution as well as whether the article dealt with specifically South African issues. Searches of the academic literature in the South African context revealed no direct discussions of RM in IS but a number of articles that discuss research issues with implications for RM curricula. This is in line with the section on RM curriculum in IS above. The purpose in this section is to get a sense of the specifically South African issues and trends in research and RM. Trends include advocacy of alternative approaches to the dominant positivist tradition, forays into the possibilities of grounded theory, and critical realism as an alternative philosophical base, as well as identification of development work and action research as core pillars of interpretive research. A brief discussion of a framework for IS research by O'Donovan and Roode (2002) fittingly concludes this section.

4.6.1 Alternatives to positivism

An editorial by Roode in the *South African Computer Journal* in 2003 invokes the spirit of the influential IFIP Manchester conference of 1984 and the call for papers for the 2004 Manchester conference. As discussed previously, the 1984 conference was the first challenge to the standard orthodoxy of positivist research in IS. Roode reflects on IS research as still predominantly positivist, with the empirical scientific method regarded as the "natural way of doing research" (p.

1), despite the widespread acceptance of interpretive research in the academic community on a “semi-equal footing” (p. 1). He critiques the dichotomy between positivist and interpretive research, suggesting critical realism, as advocated by Mingers in 2001, as a possible middle way to include both approaches. Roode presents a manifesto for IS research, drawing on critical realism, contending

first, “that research should be neither wholly positivist, nor wholly interpretivist since both are limited in their own ways”; second, that IS research “should aim for explanation and understanding not just of how things are, but why they are as they are. It should be intensive and deep rather than extensive and shallow.” (p. 2)

The editorial is essentially a call for greater reflection on the paradigmatic bases of all research articles submitted to the journal.

In another paper, critical realism is advocated as a suitable philosophical base for IS research (Pather & Remenyi, 2005). The authors argue that critical realism reflects the multidisciplinary and socio-technical nature of IS and offers a bridge between positivist and interpretive approaches. They echo Roode in asserting that IS researchers need to be more aware of the range of methodological choices available to them and to be more reflective on their research practices. Pather and Remenyi (2005) build their argument drawing on the seminal article by Mingers (2004) that discusses critical realism as a philosophy appropriate for IS. It is clear that the implications of widespread support for critical realism as a paradigmatic base in IS research for the RM curriculum are significant. Critical realism could be presented and discussed as a fourth paradigm alongside the more traditional positivist, interpretivist, and critical approaches. Yet another alternative is to use critical realism as an overarching meta-paradigm, accommodating the traditional paradigms.

Grounded theory as a broad approach to research is used and advocated as another alternative to positivist research (Brown & Roode, 2004; de Villiers 2005; van Niekerk & Roode 2009). Grounded theory accommodates both quantitative and qualitative data (Brown & Roode, 2004) and affords opportunities to build theory from data (van Niekerk & Roode, 2009). A careful distinction is made between the Glaserian and Straussian versions of the grounded theory method by van Niekerk and Roode (2009), indicating that they have an understanding of the subtle

differences in emphasis and impact, instead of regarding grounded theory as a single approach. De Villiers (2005) argues for grounded theory as one of the three pillars of interpretive research in IS, alongside other alternatives to positivist research in action research and development work (later formalised as DSR). Each of the alternative approaches has its own set of preferred methods, techniques, and tools, with obvious implications for designers and presenters of RM curricula.

In summary, scholarly work on research in IS in South Africa has centred on exploring alternatives to the predominant positivist approach. Critical realism as an alternative paradigm or philosophical base and grounded theory, development, and action research as alternative methodologies are presented largely at the level of advocacy and initial exploratory uses rather than as established practices. These trends have implications for RM curricula in IS. Questions that RM lecturers need to answer include the following: Is the obligation on the RM curriculum to introduce students to a wide range of possible paradigms and methodologies in IS research or is the responsibility to induct novice researchers into one of the paradigms and related methodologies and methods? Is there perhaps a middle way that accommodates both of these curriculum choices? Which approach is ‘best’ for the discipline and practitioners?

4.6.2 Ontological framework for information systems research

As far back as 1997, Jones described the literature on IS as a discipline as either normative or descriptive, the former indicating that the focus of debate was on which topics or content should be included as IS research and the latter simply describing what IS academics and practitioners actually do. His call for greater awareness amongst the IS community of the forces and processes shaping the emerging discipline of IS is directly claimed as the spur for the article by O’Donovan and Roode (2002). Drawing on Guignon’s assertion that members of any academic discipline work within an ontological framework that determines the sorts of questions that are appropriate and the types of answers that will make sense, O’Donovan and Roode have devised such a framework for IS research, which was published in *SACJ*.

O’Donovan and Roode (2002) see a discipline as primarily being constituted through interactions between the context of significance and the cultural structure. The context of significance refers to the network of people and equipment (research projects, tools, academic papers) pursuing purposeful, social activities whereas the cultural structure is the shared

intellectual world of collectively accepted meanings (norms and conventions) that guide practice (O'Donovan & Roode, 2002). The authors hold that the context of significance is often the source of innovation and boundary stretching, while the cultural structure may serve as a constraint on the extent of innovation; conversely, the cultural structure is also part of a wider socio-historical context that will also introduce change and disturb the existing, seemingly stable contexts of significance. Central to the framework is this constant state of flux between consolidating around the status quo and pushing beyond it. Following Heidegger's four ways of being (consolidation, learning, disposition, and dialogue), O'Donovan and Roode conceptualise evolution of a discipline as the creative tensions between consolidating the status quo and learning beyond it, mediated by a disposition of awareness and processes of dialogue.

O'Donovan and Roode (2002) characterise IS in 2002 as loosely coupled communities rather than as a consolidated discipline, echoing many of the debates about diversity and core topics discussed in Chapter 2. They quote the IS textbook by Dahlbom and Matthiasen (1993) that "most become who we are without much reflection and then spend effort defending who we are" (p. 247), which introduces issues of academic and personal identity. O'Donovan and Roode agree with Jones (1997) that standard syllabi, professional bodies, and certification are not sufficient to define a field of enquiry as a discipline.

For this study, the O'Donovan and Roode (2002) framework provides useful constructs and processes that may help to explain current RM curriculum practices in the specific context of South African universities, located as they are within the wider global IS research preparation curriculum movements. Trowler's (2008) eight TLR moments provide a complementary, more specific texture to O'Donovan and Roode's (2002) ontological framework, which will be further developed in Chapter 10.

4.7 Concluding Remarks

This chapter has used Lattuca and Stark's (2011) curriculum framework, adapted slightly to accommodate some of Posner's (2004) ideas, to explore the range of literature linked to IS RM curricula. The initial broad lens was the international arena of research methods education, with its concerns. This was followed by exploration of the themes emerging from the business research methods literature, notably the mono-method approach to RM, problem-based research, and a push

towards methodological pluralism. Relevance to the business community was a common purpose as was the relative silence of the critical voice. More specific RM curriculum issues in IS were then discussed, including Cecez-Kecmanovic's (2011) RM framework, Ellis and Levy's research worthy problem (2008) and problem literature data model (2009), the centrality of the literature review, evidence-based practice, and the 'adapted for IS' systematic literature review. Some useful research thinking tools such as Gowin's Vee and teaching matrix tools were also discussed as aids in building alignment and coherence within research projects. Finally, the focus narrowed to specifically South African RM curriculum issues with advocacy for a range of alternatives to positivism and culminating in a discussion of an ontological framework for IS. The fact that there is a relatively limited literature on IS-specific RM curriculum has resulted in the need to draw on the more general, cognate literature to identify issues. These issues, alongside the specific IS RM themes from the literature, will be explored in the analysis of the specific IS RM curriculum documents and cases studied in South African public universities in building a more detailed curriculum context for IS RM modules.

The previous three chapters operate in concert in establishing the context and foundation for the study. The disciplinary context of IS and its quests for identity (Chapter 2) form the backdrop for the use of the thinking tools of curriculum (Chapter 3) in the overview of scholarship on the RM curriculum in this chapter. The next chapter details the research design and methodologies employed in this study.

Chapter 5

Methodology

5.1 Introduction

Previous chapters have established the context for this study of IS RM curricula in South Africa. The various themes identified in the literature provide key points of comparison for the sectoral analysis of IS RM curricula and the in-depth consideration of two selected institutions. In order to conduct this study, appropriate research methodology and methods have had to be chosen. This chapter reports on the research approach, methodology, and methods that are used. Choices are justified and the limitations and challenges experienced in conducting the research are outlined.

The chapter is organised as follows. The research questions guiding the study are repeated to contextualise the discussion and then the paradigmatic orientation and methodological approach are described, followed by an overview of the major phases of the study, showing how they address the critical research questions. Details of the research design are then discussed and justified, including the participants, delimitations, sampling strategies, and data production methods used. The RM lecturer qualification profile of participating institutions is then provided, including some methodological challenges encountered during data production. The analytical framework used and details of the process of analysis are then discussed. Discussion of limitations of the research design is followed by some brief concluding remarks.

5.2 Critical Research Questions

The following research questions were introduced in Chapter 1 and provide the guiding framework for this study. The research questions are all situated within the context of PG RM preparation in IS across the public university sector in South Africa.

RQ1 What are the intended IS RM curricula?

RQ2 How are IS RM curricula enacted?

RQ3 Why are the intended and enacted IS RM curricula the way they are?

5.3 Paradigm and Methodological Approach

The primary paradigm in this research is interpretive with an emphasis on exploring the explicit explanations and underlying assumptions of RM lecturers and their influence on the design and enactment of RM curricula. The interpretive lens, as described by Myers (1997), is based on the assumption that individuals construct their understandings of the world through social constructions, such as language and concepts, and that multiple understandings of the same external event are inevitable; interpretive research thus seeks to understand participants' understandings of the research phenomenon through their written and spoken words and their behaviours in context. Myers states that participants' understandings are produced through a range of data production methods and are presented and analysed within their sociocultural context. The researcher's assumptions and view of the world are acknowledged and embraced, unlike positivist concerns with minimising the influence of the researcher (Bhattacharjee, 2012). The interactions between the researcher and participants lead to improved understanding of the phenomenon, ideally by both parties (Myers, 2009).

The interpretive paradigm recognises multiple interpretations of phenomena while acknowledging the importance of context (Klein & Myers, 1999; Oates, 2005). The research questions listed above align with the interpretive approach. The first research question seeks to document and categorise the intended RM curricula in IS. Content analysis of documents was used to extract persistent themes from the published intended curricula while recognizing the unique contexts of each. The interpretive paradigm is also appropriate for addressing the second research question which seeks to understand the nature of the enactment of the IS RM curriculum and the multiple perspectives on this enactment held by RM lecturers. The third research question seeks to understand the reasons for the intended and enacted curricula that emerge from the content analysis. This entails exploring the multiple perspectives and explanations provided by the RM lecturers, recognizing these explanations from their individual perspectives.

Research methodologies can be divided into two broad categories, namely, quantitative and qualitative research (Henning, van Rensburg & Smit, 2004; Oates, 2005). Quantitative methodologies often use mathematical and statistical techniques to test existing theories and causal relationships, whereas qualitative methodologies focus on describing the nature of things that exist (Fitzgerald & Howcroft, 1998). Qualitative methodologies also provide "thick" descriptions

(Ponterotto, 2006); they are concerned with the discovery of patterns in research data and attempt to understand or explain such patterns (Fitzgerald & Howcroft, 1998; Henning et al., 2004; Myers, 1997). Qualitative methodologies allow immersion in real-life situations (Cecez-Kecmanovic, 2011) and are suitable for exploring situations where limited theories exist (Bhattacharjee, 2012). These methodologies aim to understand phenomena through the meanings and values that people assign to them (Creswell, 20013; Klein & Myers, 1999; Oates, 2005; Yin, 2011). A qualitative methodology is appropriate for this study as the phenomenon of interest has not been substantially theorised and the methodology is suited to analysis of RM lecturers' perceptions and understandings of the RM curriculum and their role in its design and enactment. It can be expected that the understandings and assumptions of the RM lecturers and researchers will be conflicted. Alvesson and Skoldberg (2000) affirm that "researchers themselves are prisoners of their own society and its taken-for-granted concepts, thus helping to reproduce the status quo" (p. 129). In the context of IS as an emerging discipline, trying to forge an identity distinct from its origins, trying to clarify its relationship with the IT industry, the pervasive influence of CS and its positivist orientation, and the qualification and experiential backgrounds of lecturers, multiple conflicting assumptions are expected to be exposed.

In order to identify these multiple themes and assumptions, the chosen qualitative framework for this study is the hermeneutic tradition of interpreting text (words, events, and actions). Hermeneutics is the science of interpretation and attempts to bring to light patterns and coherence in seemingly confusing or contradictory texts (Myers, 1997). Myers explains the way such interpretation takes place, drawing on Gadamer's construct of the hermeneutic circle, where attempts to interpret texts shift between the whole and the parts, leading to improved understanding of both.

Furthermore, multiple methods of data generation have been used to allow exploration and elicitation of themes from various perspectives. Methodological pragmatism (Bryman, 2006) has been embraced as the framework for organising research strategies and methods. The overarching assumption is that the most appropriate strategy and/or method should be used to generate data, irrespective of the traditional association of particular methods with specific paradigms. This pragmatism is associated with the use of multiple methods such as document analysis, focus group discussion, interviews, and observation. To some extent, the initial document analysis and online

focus group discussion influenced the purposive sampling of institutions to use as cases in the second phase. However, the use of multiple methods is not aimed at simple triangulation but recognises the possibility and probability of multiple truths. The interpretive paradigm recognizes the probability of multiple truths (Klein & Myers, 1999; Oates, 2005). Thus, individual RM lecturers will have unique perspectives on the intended and enacted curricula as well as the reasons for their particular nature and form. The use of multiple methods of data generation increases the possibility of uncovering these multiple perspectives as well as triangulating claims for credibility (Myers, 2009).

5.4 Research Design—Focus on the Planned Approach in this Study

In keeping with the interpretive paradigm, qualitative methods were the primary focus. The overall design is a funnel (see Figure 5.1 below), starting with broad document analysis of formal curriculum documents (intended curriculum) across the public university sector, continuing with a VFG, or online discussion forum, with all willing RM lecturers across the sector, and culminating in an in-depth analysis of two universities as cases (enacted curriculum).

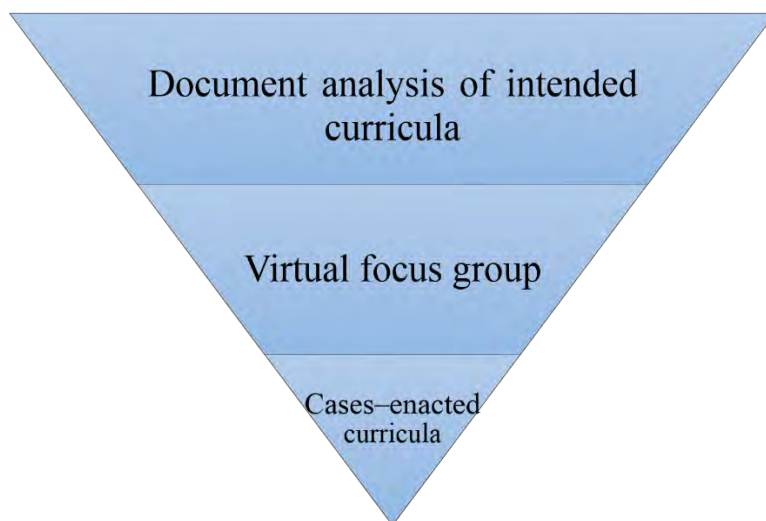


Figure 5.1. Research design.

5.4.1 Participants

All thirteen universities that offer PG IS modules in South Africa were invited to participate in the study. The lecturers on the RM modules were the direct points of contact as they are directly

involved in planning and enacting the modules. Table 5.1 lists the participating universities and the name abbreviations used in this chapter.

Table 5.1	
<i>Participating Universities</i>	
<u>Institution</u>	<u>Abbreviation</u>
University of Pretoria	Pretoria
University of the Witwatersrand	Wits
University of Fort Hare	Fort Hare
University of the Free State	Free State
University of KwaZulu-Natal	UKZN
University of Cape Town	UCT
University of Johannesburg	Johannesburg
University of Stellenbosch	Stellenbosch
University of Rhodes	Rhodes
University of South Africa	UNISA
Nelson Mandela Metropolitan University	NMMU
University of the Western Cape	Western Cape
North West University	North West

All the invited universities participated in the study to some degree. Some were full participants in all phases, some participated in the document collection and VFG phases, while others provided some form of official documentation. Universities of technology¹ have not been included in this study, as research output and PG imperatives are relatively recent and this sector has its own characteristics and is worthy of a study in its own right. Private universities have been excluded for the same reasons. The study has thus been restricted to public universities offering PG research modules on RM in IS.

5.4.2 Data production

This section has been structured according to the method of data production. The description of the three primary phases of the study are arranged chronologically. Table 5.2

¹ The university sector in South Africa comprises three broad types of universities, namely traditional, universities of technology and comprehensive universities. Prior to 2004, universities of technology existed as technikons, focusing on vocational and applied qualifications. These have been re-classified as universities of technology in a process of providing articulation between the various tertiary qualifications offered. In some cases, traditional universities merged with technikons to form comprehensive universities, offering both traditional and applied, vocational qualifications.

summarises these phases and the primary research questions that are addressed in each phase, as well as the specific methods used.

<u>Phase</u>	<u>Data Production Strategy</u>	<u>Methods</u>	<u>Research Question(s) Addressed</u>
1	Document collection	Web site search Email requests	RQ1
2	Virtual focus group	Asynchronous focus group	RQ1 and RQ2
3	Site visits	Observation Interviews Resource collection	RQ2 and RQ3

Since the three phases occurred in sequence, insights and analysis from Phase 1 informed the formulation of the focus group questions as well as the interview questions and observation schedule in Phase 3. Similarly, discussions during the VFG informed the interview and observation schedule in Phase 3. At each phase, in keeping with the general precepts of qualitative inductive research, data was analysed during production, thus informing subsequent phases (Bazeley, 2009).

5.4.3 Sampling strategies

Qualitative studies generally seek to understand a phenomenon in an in-depth manner that emphasises richness of data (Henning et al., 2004; Merriam, 2014; Silverman, 2013). Sampling strategies in such studies are thus generally purposive, seeking to gain access to participants who are able to provide the richest data on the phenomenon (Creswell, 2013). Issues of being representative of the population are thus far less important than identifying participants or study sites that are rich in relevant data. This study has employed various sampling strategies in the different phases of the research. Table 5.3 summarises the sampling strategies used.

<u>Phase</u>	<u>Data Production Strategy</u>	<u>Methods</u>	<u>Sampling Strategy</u>
1	Document collection	Web site search Email requests	Census
2	Virtual focus group	Asynchronous focus group	Census
3	Site visits	Observation Interviews Resource collection	Purposive

In phase 1, the research aimed to perform a sectoral analysis of all RM modules at Honours, Master's, and doctoral degree levels across all public universities offering IS. The sector in this case includes all public universities that offer PG qualifications in IS, and the units of analysis are the specific RM modules on offer. The sampling strategy was thus census sampling, attempting to access data from each university that met the inclusion criteria. In phase 2, census sampling was used in an attempt to include all universities offering PG RM modules in the VFG. In phase 3, purposive sampling was employed in selecting two universities to participate as cases. Criteria for inclusion included degree of participation in the focus group discussions, a clear paradigmatic orientation, faculty location, reputation of research excellence, and interest in RM practices. The primary goal was to select two cases that would represent the diversity of paradigm, faculty location, and RM practice as best possible. Within the chosen cases, census sampling of all the RM lecturers was employed in order to draw on the varied experience and perceptions of the range of RM lecturers.

Additional detail on the specific data sources and the procedures followed in the various phases is necessary for a richer understanding of the process and will be provided below.

5.4.4 Documents

Official documents requested from each participating university included module templates, handbook entries, MOs, and reading lists. Some of the documents were available on

university websites and the rest were requested from the RM lecturers directly. In addition, for each PG RM module (Honours, Master's, and PhD), the planned content, structure and sequence of topics, resources (textbooks, handouts and readings), and the planned assessment strategies were captured. The structural requirements of RM modules within qualifications were also documented, where available, for example, whether they are compulsory or elective and the requirements at different levels (see Appendix B).

For each participating institution, the academic location of the IS school/department, the various RM modules offered at different levels, the extent of research training at UG level, whether modules are compulsory or elective, and prerequisite module information were gathered. In addition, for each lecturer, academic qualifications, training in RM, experience lecturing RM, and other demographic data were captured (questionnaire in Appendix C).

5.4.5 Virtual focus group

Theories and frameworks that underpin CoPs were used to inform the process of setting up and maintaining the online discussion forum in order to optimise engagement of participants and improve the richness of the data. Wenger, McDermott and Snyder (2002) outline seven principles for cultivating CoPs, including having public and private spaces, ensuring value for participants and allowing participants to influence the form and nature of interaction. Dubé, Bourhis and Jacob (2006) identify the unique additional challenges posed by virtual CoPs, including building trust and a sense of belonging in a virtual space.

The VFG of all participating RM lecturers (12 across eight institutions) was run as an asynchronous online discussion, discussing issues of content, sequence, resources, teaching strategies, assessment, and any other topic deemed relevant to the participants. Prior to the launch, the protocols of the VFG were discussed and agreed to by all the participants (see Appendix D). The VFG lasted eight weeks, enabling the sharing and discussion of content covered, teaching challenges, assessment strategies, and resource material used. This research strategy provided opportunities for reflection and discussion of approaches used by other lecturers, self-reflection, and analysis of implementation over more than half of the first semester in 2012. The benefit was a sharing of promising practices. In addition, resource material (readings, notes, exercises, and assignment details) was requested for communal comment and sharing. Participants also had the opportunity to adapt their perspectives and positions as the discussion progressed. Such changes

of position were flagged as significant markers for the analysis phase as all data was recorded throughout the process.

I participated in the VFG as a facilitator, introducing topics for discussion (see Appendix E) and adding provocative comments as stimuli, as well as trying to build a sense of community and trust. All participants were requested to provide marked assignments and tests, completed research proposals, and any other relevant material. It was anticipated that some participants would be unwilling to share openly across the discussion forum. An individual submission option was therefore also made available.

5.4.6 Cases

The previous phases of document analysis and the VFG were supplemented by purposively selecting two institutions as cases based on the initial data gathered, taking into account faculty location (commerce, science, or other), dominant paradigmatic orientation, and best practices. The purposive choice of institutions for this final phase of data production was based on choosing two dissimilar cases as well as taking into account unexpected or interesting aspects that emerged during earlier phases. The willingness of universities and lecturers to participate was clearly a necessary requirement. The two cases selected for inclusion were chosen primarily because they represented best practices in different paradigms, one following a predominantly quantitative approach in the RM modules and the other a predominantly qualitative approach.

Each site visit took the form of a case (lasting two weeks), including observation of lectures or seminars (see Appendix F), discussion of the lecturers' marking of formative and summative assessment tasks (especially the research proposal), and face-to-face interviews with lecturers, as well as informal discussions. A voice recorder was used for the interviews and a diary for recording the informal discussion field notes. For each PG RM module (Honours and coursework Master's), the intention was to explore the rationale for, and surface explanations about, the planned and implemented content, structure and sequence of topics, the resources used (textbooks, handouts and readings), teaching strategies used, and the assessment strategies used. The interview process and questions were pre-tested with a RM lecturer who was not involved in the study, resulting in a reduction of the number of planned questions (the planned interview schedule is included as Appendix G and a sample of an actual interview schedule as Appendix H). The actual interview

questions used were also customised and adapted to be appropriate to each participant, drawing from comments made in the VFG.

5.4.7 Data analysis

Document analysis of the official curriculum was guided by Bowen (2009). Bowen emphasises the simultaneous consideration of context and construction of patterns of similarity and difference. He also cautions that texts undergo repeated re-interpretation over time and recommends that the researcher be sensitive to the full socio-political, educational, and ideological context within which the text was initially created.

The analysis of the range of intended curricula was initiated by content analysis of the handbook and module outlines. Recurring items were recorded in matrices and general patterns of frequencies were used to get a sense of the overall trends in the data. Furthermore, unexpected occurrences, outliers, and silences were noted. Themes were thus identified from frequently occurring items as well as from unexpected or unusual items that stood out from the data. Subsequent document analysis of the intended RM curricula and institutional demographic data was used to establish trends and to inform the generation of data in the later phases of the research. This analysis was used to identify appropriate institutions to be used in detailed case analyses in order to address the question of the enacted curricula and their rationale.

Data generated during the VFG sessions were captured electronically for analysis (see Appendix I for an excerpt of the transcript). Personal interviews were transcribed and coded (see Appendix J for a selected excerpt from one interview). Content and thematic analyses were used to identify themes in the online discussions and the transcribed personal interviews. Qualitative research software (NVivo version 10) was used to assist with analysis of the VFG and personal interview data.

5.5 Research Implementation—Focus on the Outcomes

5.5.1 Data sources

Because MOs were relatively easy to access and are rich in detail, they have been used as the primary data source; other possible documentary sources were used in a supplemental, comparative manner. Module templates proved very difficult to access and, where provided, have

been used as a comparative source for triangulation or as a supplement for information not provided in MOs or handbooks. Calendar/prospectus/handbook entries are by their very nature limited in length and detail, and they have also been used for triangulation and supplementary purposes.

The RM MOs (also termed student guides or course outlines at various universities) were initially sourced on the Web (some universities provide these on their web sites), but the majority were gathered by direct email requests to discipline heads, RM lecturers and VFG participants. In most cases, the MO was treated as the intellectual property of the lecturer concerned, so heads of department (HoDs) re-directed requests to the lecturers. By contrast, handbook entries and work schedules were readily provided by administrators, these documents being regarded as public property and being easily accessible. At one level, MOs may simply not normally be made available to administrators as the primary purpose of the document is to provide information about the curriculum to the students. However, this may also indirectly signal a general assumption that the RM lecturer is given relative autonomy in interpreting the 'official' curriculum as documented in the handbook.

5.5.2 Critical reflections on the document collection phase

In general, requests for module templates from RM lecturers and HoDs either received no response or MOs were re-sent. It would seem that either RM lecturers are not provided with templates or templates are not easily accessible. In effect, templates have a minimal impact or no direct impact at all on the way RM modules are planned and enacted. Indirect influence may exist in the residual effects of templates on successive RM handbook entries, MOs, and ingrained practices. It is possible that the varying terminology used by different universities contributed to the poor response to these requests. For example, some universities used the term curriculum proposals to refer to module templates while others understood these to be module specification documents. One institution, after deliberation between the lecturer, HoD and administrator, initially sent me the module schedules as their best approximation of a module template. A second request, couched in language that used a range of terms and provided an example module template, resulted in receiving a full set of the official programme templates for the Honours and coursework Master's degrees. However, module templates were not provided as the institution's policy was not to 'fix' a blueprint but to allow the MO to adapt to changing circumstances.

It appears then that, while templates must be completed as a statutory requirement, they do not seem to play a direct or influential role in the formulation and design of the RM module for specific implementation. It is noteworthy that one university, late in 2012, provided a template for the Honours RM module amended in 2005, as a result of email communication with the HoD. He had been able to find the template documents on his computer rather than from an official repository. Other lecturers were not aware of the existence of a template for the Honours RM module. It is of particular interest that, after repeated requests for an MO, one university provided a module specification document (a traditional MO was not provided), but the impression given was that it was a secret document, not to be circulated. This provides yet another perspective on the institutional function of module templates. Another institution's Honours learning guide (or MO) contains a number of components traditionally only included in templates, for example, SAQA level descriptors and HEQF levels. This suggests strong alignment between the formal template and the MO. In this case, the HoD who lectured the module was also involved with curriculum proposals and amendments, thus alignment was to be expected. In addition, the MO contains a detailed list of all the assignments for the year with the associated marking rubrics. It is thus a curious blend of less relevant information to students in the form of generic SAQA level descriptors and highly relevant and detailed assignments and rubrics.

There were various reasons why MOs were not forthcoming from some universities, including no response to multiple requests and because modules were being re-designed and existing student guides were deemed unsuitable. In addition, some universities offering integrated Honours programmes with no separate RM modules did not provide any official documents on the programme whereas others provided only an email description of the programme. One institution was in the process of revising their RM modules entirely and claimed that it would be premature to provide them; when requests for MOs from previous years (listed in the 2011 calendar) were made, the response was that the MOs were outdated. The overriding sense of only wanting to release MOs once they were 'right' underlines the traditional notion of the lecturer as authority, providing the required package of knowledge and skills to students. Another institution's integrated programme is somewhat unique in emphasis as well as faculty location, and the reluctance to provide copies of MOs may be linked to a need to preserve their intellectual property and niche perspective. This possible reason is at odds, however, with an open invitation from the

HoD to visit the site to get a deep understanding of the programmes. In yet another case, the only document accessed was the calendar entry on the web.

5.5.3 Curriculum documents obtained

Table 5.4 summarises the range of official documents pertaining to RM modules received from participating universities. It should be noted that NMMU provided documents related to RM modules in both the commerce and science faculties, thus increasing the total possible number of documents to 14 (some Honours students are required to take both of these modules).

Table 5.4						
<i>Types of Documents Collected</i>						
<u>Research Methodology Modules</u>	<u>Honours</u>			<u>Master's</u>		
	Module Template	Handbook	Module Outline	Module Template	Handbook	Module Outline
Total Count	4/14	12/14	8/14	3/5	3/5	4/5

It is significant that relatively few universities offer RM modules at the Master's level as full research by supervision is the primary mode of delivery. By contrast, all universities offer RM modules for Honours students. Only two universities (namely, UCT and NMMU) offer formal doctoral programmes (non-credit-bearing) including elements of RM. It was therefore decided to focus analysis on the Honours and Master's levels where formal RM modules were offered.

5.5.4 Virtual focus group data obtained

Table 5.5 summarises the number of participants who registered for the VFG as well as the number who were active during the discussion. Participants were academics with experience and interest in the design and teaching of IS RM modules from a range of South African universities.

<u>University</u>	<u>Number of Participants</u>	<u>Number of Active Participants</u>
Pretoria	3	3
Wits	2	1
Fort Hare		
Free State	1	
UKZN	1 (facilitator)	1
UCT	2	1
Johannesburg	1	
Stellenbosch	1	1
Rhodes	1	1
UNISA	1	1
NMMU	3	2
Western Cape		
North West		
Total	16	11

One university joined the discussion late due to the requirement for the study to obtain ethical clearance at the participant site as well. The late joining resulted in an independent discussion being launched, but the only participants were the lecturers from this university. This discussion did not take off, and it was thus deemed acceptable to exclude these academics from the VFG process. It should also be noted that three universities did not participate in the online discussions. It is also clear that only seven discussants (including the facilitator) from the total number of 13 were active, with the remainder not contributing at all. Several attempts were made by the facilitator to draw the non-participating academics into the conversation, including encouraging questions and the creation of a separate forum for less active participants, but all attempts failed.

The intention in this study was to go beyond traditional threaded discussions by using some of the features of social networking to create the opportunity to build more natural, thoughtful conversations between participants. An educational social networking site, Edmodo, was used as the platform enabling anonymous participation. Participation was anonymous through the use of pseudonyms as identifiers in order to promote open participation. The pseudonyms were creative and humorous, including Bad Housewife, Dot Matrix, The Reformer, and Rebel Force.

The aim of the VFG was to generate rich discussion on aspects of curriculum design and implementation as participants were afforded time for reflection and editing before making inputs.

The asynchronous nature of the online discussion offered the possibility that the VFG would facilitate “incubation of ideas” (Rezabek, 2000, p 6), enabling participants to articulate their own views and engage with those of their colleagues. The complete transcript was available for review at all times, enabling participants to respond in their own time and to whichever post took their interest. Email alerts containing the latest comments were automatically sent to participants when a new post was made as participants needed to log into Edmodo in order to respond.

Draft question areas and probes were drawn up in advance, using the content of the MOs as an influencing factor. The questions were adapted and customised in light of discussions and directions emerging during the VFG, but the broad question areas remained the same (see Appendix I). In general operation, the facilitator posed an open-ended question and allowed approximately a week for typed responses and questions, probing and encouraging where necessary; a summary for comment was provided at the end of the period. In addition, any previous comments or questions from participants that were relevant to the new question were summarised as prompts together with the newly posted question. The broad question areas used to initiate discussion were the following:

- Icebreaker (expectations of the VFG process)
- Primary purpose of IS RM modules
- Topics critical for IS RM modules
- Prescribed and recommended textbooks
- Teaching challenges
- Issues of Assessment
- Miscellaneous issues
- Concluding questions.

Overall, substantial input was made on the core questions posed. Length and frequency of comments varied considerably between short, one-liners to lengthy posts that dealt with issues in detail. Some participants raised new issues and posed useful questions; some discussions developed between participants, although the norm was responses directly to the facilitator’s questions.

5.5.5 Critical reflections on the virtual focus group

One university indicated a willingness to participate in the VFG but were required by their own institution to apply for ethical clearance for the study. This was in addition to the ethical clearance given by UKZN. Unfortunately, the clearance process took a long time and the scheduled start for the VFG launch arrived before clearance was obtained. The other issue was the number of RM lecturers who indicated a willingness to participate and provided informed consent for the study but who subsequently made no input into any of the discussion. Edmodo, the software package used, did not allow access to records of participant logins so it is possible that some of the RM lecturers played a passive role in the VFG. It is also possible that some RM lecturers were not able to login at all although email checks were used to ensure that access was possible. More data on the low and non-responders would have been instructive.

The implications of my role as facilitator require some discussion. I deliberately positioned myself as a non-participating facilitator of the discussion, but the act of setting the agenda, specifying the questions to be discussed, and summarising key points made is clearly a significant form of participation. I adopted the position of not responding to posts in order to enable participants to discuss peers' comments. The exception to this was where the questions seemed not to be of interest or were not sufficiently clear. In these exceptional cases, I re-phrased or provided examples. For example, I posed a question about linkage between the RM modules and the research project as follows:

Are the current RM modules linked directly to preparation for a research deliverable at that level (e.g. Hons paper, dissertation or thesis) or do the RM modules cover research thinking and skills as a self-contained course? (VFG)

Participants avoided this question and so I rephrased it and provided illustrative examples, which drew a range of responses. Furthermore, I would request elaboration of points made by participants or express gratitude for valuable inputs made, especially by previously silent participants such as Rebel Force. Some examples can be seen in Appendix I.

A range of limitations of the VFG were identified. These included that responses were primarily to facilitator posts and engagement was sporadic. The discussions were thus sometimes disjointed, lacking the conversational dimension of a face-to-face focus group.

Attempts to manage these specific limitations included general acknowledgment and encouragement from the facilitator.

Feedback on the VFG process from participants identified the following challenges:

- Questions were sometimes too long and complex, with too many sub-questions
- Effort was required in typing detailed answers
- Difficult to keep up with discussion
- Clumsy structure of posts in Edmodo
- Face-to-face better when trying to persuade others

Some of these difficulties are directly related to the virtual nature of the VFG whereas others are as a result of the specific software used. The issue of the long and complex questions suggests that participants may have preferred questions requiring briefer responses, and this may indicate that a VFG is not ideal for lengthy deliberation and debate. My assumption that the lack of pressure to respond immediately would result in more thoughtful answers was optimistic.

Possible improvements to the VFG process include identifying software better suited to focus group discussion and greater care in keeping questions short and focused. However, the concomitant danger of losing rich discussion would need to be managed.

5.5.6 Site visit data obtained

During the site visits to the two cases, seminars were observed and key lecturers were interviewed. In addition, substantial teaching and learning material was provided by the lecturers, including sample research proposals, tests, and assignments. The fictitious names, QuantU and QualU, have been used to preserve some degree of anonymity to the actual universities concerned.

Table 5.6 summarises the range of data sources that was assembled from the two cases.

<u>University</u>	<u>Level</u>	<u>MO</u>	<u>Number of Lecturers in VFG Discussion</u>	<u>Number of Interviews</u>	<u>Research Proposals</u>	<u>Tests and Assignments</u>	<u>Seminar Observations</u>
QuantU	Hons	Y	1	2	Y		Y
	M	Y	1	2	Y	Y	Y
QualU	Hons	Y	3	2	Y	Y	Y
	M	Y	3	2	Y	Y	Y

It was not possible to assemble directly comparable materials or observation sessions as the materials were voluntarily provided and the observation sessions slotted into the specific sequence that each institution was following. Thus, the seminars observed at QualU focused on the topic of quantitative research whereas QuantU were working on issues of reliability, validity and limitations of data at the time of the visit.

5.5.6.1 Interviews. Requests and arrangements for interviews were finalised prior to the site visits. Participants were informed of the broad content and intention of the interviews. At the outset of each interview, the letter of informed consent was read and signed by the participant and discussed where necessary (see Appendix J). Permission was also obtained to record each session as well as have the researcher take field notes. Each interview was semi-structured, using an interview schedule (see Appendix H) as the framework. The following broad questions were used as initial seeds, followed by the more detailed probes shown in the appendix.

1. It is always interesting to hear how academics got involved with lecturing RM. How did you become involved in teaching research methods/preparation module(s)?
2. It is quite common to be asked how we position ourselves as IS lecturers and researchers. How would you describe your own positioning as an RM lecturer and researcher?
3. Thinking back to the VFG discussions, which aspect(s) stand out for you in terms of designing and implementing RM modules?

4. I would like to explore possible influences on the way that you design, structure, deliver and assess the IS RM module(s) that you teach. Please outline what you would see as some of these possible influences on you as a RM lecturer
5. Assume that you are approached for advice by a colleague who is going to lecture an RM module for the first time. What advice would you give?
6. Modelling is the language of the analyst and is also used in conceptualising research projects. As an RM lecturer, how would you model research preparation in RM modules as a system?
7. Is there anything you would like to add that we did not discuss?

After being transcribed by a transcription service and checked and edited by the researcher, the transcription was sent to the participants for further correction and validation. Open coding in NVivo was used to identify themes emerging from the discussion.

5.5.6.2 Observations. Prior to the site visit, arrangements with the relevant lecturers were made for observation of suitable Honours and coursework Master's sessions, after clearing this with the HoD. An observation schedule of specific aspects for notice was used as the framework to focus the observation on curricular aspects of relevance to the study (see Appendix F). After consultation with the RM lecturers at QuantU, it was generally agreed that I would be a non-participating observer. At QualU, I was encouraged to participate in the seminars as a full participant but opted to respond only if directly requested to.

5.5.7 Critical reflections on the site visits

The process of visiting a site for a fortnight provided an opportunity to observe a number of the RM sessions. However, the quality and extent of the observations was largely dependent on the immediate circumstances at the institution during the time period. For example, one Honours session during the observation period was curtailed due to an extended presentation by an IT recruiting company. Another example is the prevention of an RM lecturer from leading a session due to personal circumstances.

5.6 Analytical Framework

After consideration of a number of possible curriculum frameworks (Diamond, 2011; Hoadley & Jansen, 2009; Posner, 2004), Lattuca and Stark's (2011) model of curriculum was

selected as the framework to be used. The model focuses on academic planning and thus dovetails with the focus on the lecturer in this study. The model provided a useful set of initial analytical categories. The now familiar adapted model identifies the following key aspects of the academic plan that require decisions by the educator:

- Purposes
- Content
- Organisation
- Learners
- Teaching
- Resources
- Evaluation.

These seven dimensions were used as initial categories to analyse the collected documents so as to obtain an initial sense of themes emerging from the data. A range of higher level themes emerged from the descriptive analysis of the intended curriculum, including the paradigmatic orientation of the module, the pedagogical orientation of the RM lecturer, and the extent of linkage between the RM module and the research project. These themes were used as a framework in analysing the data from the site visits. Once again, this secondary analytical framework yielded fewer yet stronger themes; this included the persistence of the paradigmatic and pedagogical orientation and the emergence of the themes of RM lecturer identity and disciplinary identity.

In summary, the adapted Lattuca and Stark model formed the initial analytical framework. The framework was helpful in managing the data from the intended curricula analysis; a fresh framework of categories emerged from the repeated themes observed in the initial arrangement of the data. This process continued iteratively, yielding fewer, yet stronger and more persistent themes, culminating in the two overarching themes that inform the competing identities model.

The process has resonance with Bazeley (2009) and Bazeley and Jackson's (2013) qualitative analysis guides.

5.7 Issues of Validity and Reliability

Interpretivist approaches to research have grappled with issues of reliability and validity as used in positivist research. Alternative emphases on credibility, transferability, dependability, confirmability, and validity of process (Bhattacharjee, 2012; Kvale, 1996; Trochim, 2006) have been debated and used as viable ways of representing the quality of the research. The various dimensions above, originally suggested by Guba and Lincoln (1985), overlap to some extent but provide useful criteria for considering research quality for the study.

Firstly, credibility refers to the trustworthiness of the data and is best evaluated by the participants (Bhattacharjee, 2012; Trochim, 2006). Transcript checking by the participants was used to ensure credibility. In particular, interview transcripts were verified with participants and the VFG offered participants continuous access to their own posts, allowing editing of previous posts. Secondly, transferability or applicability refers to the extent to which the findings of a study apply in other contexts (Trochim, 2006; Vithal, 2009). Trochim (2006) states that the reader is the best judge of transferability, requiring rich descriptions of context and reflexive consideration of researcher assumptions. In this study, an attempt has been made to provide these detailed accounts of context within the constraints of maintaining sufficient anonymity of participants. In particular, the two cases and the VFG are represented and discussed in extensive detail. The use of multiple sources of data assist in providing as full a context as possible. In addition, the use of multiple methods, such as the VFG, interviews, and documents, assisted in the generation of rich data that can be used to assess the transferability of the emerging themes and models to other contexts.

Thirdly, dependability is the qualitative researcher's version of reliability, referring to the extent to which the study is consistent over time (Bhattacharjee, 2012; Trochim, 2006). Thick descriptions of the context, especially as it changes over time, assist in providing support for this criterion (Myers, 2009). Triangulation of findings across the document analysis, VFG, and the cases analyses provide some evidence of the dependability of this study.

Finally, confirmability is the degree to which findings can be confirmed or corroborated by others (Bhattacharjee, 2012; Trochim, 2006). In the study, the handbook entries and MOs were

sourced from the universities and are available for scrutiny. The transcripts of the interviews were checked for accuracy against the audio recordings and are available for scrutiny. Selected parts of the transcripts are provided as appendices. Furthermore, aspects in the data that were outliers from the general trends are specifically discussed in order to provide as full an account as possible.

In this study, the use of an online discussion in a VFG, using peer lecturers of RM modules as participants, enabled the possibility of achieving some of the characteristics (choice, negotiation, reciprocity, responsiveness, and reflexivity) of democratic participatory validity (Vithal, 2003). Clearly, participants chose whether to participate or not, but, more importantly, were in a position to negotiate the guidelines for discussion and to play an active role in shaping the direction of the research. The research is of such a nature that participants were able to draw immediate benefit for their own teaching and thinking from the discussions. Participants were able to reflect on their own responses and those of the group over time and to clarify or supplement earlier inputs. My interpretation and understanding of their data was also checked for accuracy with respondents.

My role as a practitioner (insider) researcher also introduces issues of power. I largely set the agenda as the researcher. However, the nature of virtual CoPs does allow for participants to influence and negotiate the direction that the forum takes, thus offsetting my influence and interests to some degree.

5.8 Ethical Considerations

The study is in full compliance with the University of KwaZulu-Natal's research ethics policy. The research design and research instruments were approved by the Human Social Science Research Ethics Committee (see Appendix A for approval letter). Furthermore, during the conduct of the research, ethical requirements were upheld. Documentary data, such as MOs and calendar entries, collected during phase 1 of the research were generally in the public domain, for example, on the university web site. When MOs were requested from individual RM lecturers, these were often emailed to the researcher or, in one case, access to the proprietary module web site was granted. Informed consent for individual participation of RM lecturers in the VFG was obtained, with the understanding that participation was voluntary and withdrawal at any stage was available. Gatekeeper approval was obtained from the HoD at each of the universities that were studied as

illustrative cases. Similarly, individual informed consent was obtained from each RM lecturer at the two case institutions.

5.9 Limitations

The limitations of various aspects of the study will be discussed briefly under the broad headings of design, implementation, and ethics.

5.9.1 Limitations of design

The document collection phase made several assumptions. One was that each institution would have a readily available and updated set of programme and module templates that would provide the official curricula, particularly for the RM modules. This assumption was unfounded as these documents were sometimes referred to with different terminology and, in some cases, seemed not to exist.

The online discussion forum required participants to submit input and responses as asynchronous posts, in their own time. The richness of this data may therefore be limited due to the formal representation in writing. Participants may have been reluctant to commit their ideas or views in writing in a public (virtual) forum and may have masked their comments for social desirability. However, virtual forums do offer the possibility of richer data and increased participation than face-to-face interviews. Participants used pseudonyms, allowing for anonymous discussions with fellow participants. A further limitation concerns my participation as researcher, which needed to be self-monitored to avoid issues of leading excessively. The twin roles of researcher and participant carried the risk of becoming intertwined. Conscious awareness of this tendency did, however, assist to some degree in managing this limitation.

For the purposively sampled institutions, personal interviews allowed probing of earlier inputs from the online discussion forum. In addition, observation of actual sessions yielded rich data that was triangulated with other related data so that some of the limitations discussed above could be minimised.

5.9.2 Limitations of implementation

The original research plan included site visits to five universities, ensuring a wider spread of university types and characteristics. In an ideal research world, visits to five universities would

have enriched the study, but it was decided that visits to three substantively different IS departments would be sufficient. Furthermore, once the interview and focus group data had been transcribed and preliminarily analysed, it was decided that only two cases needed to be represented in the thesis.

This study followed a qualitative approach to research, focusing on the richness and quality of the data. In phase 1 of the research, a census sampling method was used, thus it was fully representative, but, as indicated, only two universities were purposively sampled for site visits in Phase 3. The findings can thus not easily be generalised to all universities in South Africa and, as is normal for a qualitative study, context should be considered carefully for transferability.

Triangulation in a number of forms was used to improve the validity of the findings. Multiple data sources were used (documents, focus group discussion, interviews, and observation), and there were multiple participants from the two cases, as well as data sampling over different time periods (documents, virtual focus group, and site visits). These various methods of triangulation were intended to strengthen the richness of the data and the validity of the findings and to offset some of the inherent limitations of the study.

The study was limited to public universities in South Africa, thus deliberately excluding private universities and universities of technology as they warrant dedicated studies.

5.9.3 Limitations of ethics

One of the challenges in this study was the undertaking to guarantee anonymity to participating individuals and institutions. The community of IS academics in South Africa is relatively small and universities are relatively easily identifiable. In this context, selecting two universities as cases for detailed study poses challenges in maintaining their anonymity. The names chosen for representing QualU and QuantU attempted to maintain this anonymity.

A further challenge to the anonymity of participants was identified in the VFG. Pseudonyms were used by all the participants, but once again it may have been possible to guess the identity of participants based on their posts during the discussions. Furthermore, the software used required that the facilitator, as administrator of the VFG, was aware of the identities of the participants. Ideally, an independent technician could have administered the software, but this

would have removed the valuable aspect of the researcher being able to probe inputs made during the VFG at later interviews.

5.10 Concluding Remarks

This chapter has reported on the research approach, methodology, and methods that were used in the study. The research design was described and justified. The implementation of the research strategy was also described, with specific mention of the participants and the varying degrees of participation. Limitations of design, ethics, and implementation, as well as the measures taken to manage these limitations were discussed.

The next chapter reports on the descriptive sectoral analysis of the RM documents collected, representing the start of phase 1 of the research design.

Chapter 6

Descriptive Analysis of Intended Curricula in Information Systems

6.1 Introduction

The primary aim of this chapter is to engage with critical research question 1: What are the intended IS RM curricula? The context is PG study at public universities in South Africa. The chapter presents a descriptive analysis of the RM module outlines, templates, and handbook entries obtained from the majority of South African public universities that offer PG research modules in IS. The Honours and coursework Master's degree qualifications are discussed separately as they represent different levels of research preparation with different aims and emphases. Separate discussion also enables consideration of the extent of linkage between the levels.

The chapter begins with a description of the universities offering PG qualifications in IS, focusing on the physical location of the discipline and the names used for the discipline and RM modules. This is followed by a description of the research qualifications offered at the Honours and Master's levels, considering structural aspects such as credit point (CP) allocation and prerequisite requirements. An adapted curriculum framework (from Lattuca and Stark, 2011) is then used to report findings and general trends across the sector, categorised under the headings of purpose, content, resources, teaching and organisation, learning, and assessment. A summary with conclusions and a link to the subsequent chapter close the discussion.

6.2 Public Universities Offering Postgraduate Information Systems Qualifications

As discussed in more detail in Chapter 5, the population for the study was South African public universities offering PG qualifications in IS in 2012. Universities of technology and private universities were not included. Four public universities do not offer IS at PG levels, leaving a target population of 13 universities. Public universities not offering IS at PG level in 2012 included Walter Sisulu University and the universities of Zululand, Limpopo and Venda. Table 6.1 below provides an overview of the universities offering PG IS qualifications, the discipline name, and the faculty location of the discipline.

Table 6.1

Universities Offering RM Modules with Discipline Name and Faculty Location

<u>Institution</u>	<u>Discipline Name</u>	<u>Faculty/Department/College Location</u>	<u>RM Module Name</u>
University of Pretoria	Informatics	Engineering, Built Environment and IT	Research Methodology
University of the Witwatersrand	Information Systems	Economic and Management Sciences	Research Methods
University of Fort Hare	Information Systems	School of Business and Enterprise, Faculty of Management and Commerce	Research Methods
University of the Free State	Computer Science and Informatics	Natural and Agricultural Sciences	Introduction to Research
University of KwaZulu-Natal	Information Systems & Technology	School of Management, Information Technology and Governance	Research Methodology in IS
University of Cape Town	Information Systems	Commerce	No separate RM module
University of Johannesburg	Applied Information Systems	Management	Information Technology Research Methodology
University of Stellenbosch	Socio-Informatics	Arts and Social Sciences	Research in Socio-Informatics; Advanced Theory and Design
University of Rhodes	Information Systems	Commerce	Research Methodologies
University of South Africa	Computing	Science – BSc Hons Computing Service Commerce - Hons Business Informatics	Research Methods and Proposal
Nelson Mandela Metropolitan University	Information Systems	Computing Sciences, Faculty of Science Serviced by the Business Management Department in the Faculty of Commerce	Research Methodology Business Research
University of the Western Cape	Information Systems	Economics and Management Sciences	Research Methods
North West University (Potchefstroom)	Computer Science and Information Systems	Natural Sciences	Combined with Research project: Research Methodology and Project

The most striking aspect of the table above is the diversity of discipline names, locations, and RM module names. The most common discipline name above is Information Systems (6/13), with variations such as Information Systems & Technology (1), Applied Information Systems (1), Informatics (1), and Socio-Informatics (1). It is noteworthy that each carries a specific flavour; the first emphasises technology in conjunction with IS, suggesting a stronger technology dimension; Applied Information Systems places emphasis on the application of IS, suggesting a greater practitioner focus; and Socio-Informatics emphasises the social dimension rather than a technology focus. A number of module names are combined with CS in various forms such as Computing (1), Computer Science and Information Systems (1) and Computer Science and Informatics (1). The range of faculty locations is equally diverse, with the majority (7/13) located broadly in commerce/management (variously named), followed by (4/13) in science. The remaining two departments are located in the Faculty of Engineering, Built Environment and IT and the Faculty of Arts and Social Sciences.

The naming of RM modules as reflected in Table 6.1 is even more diverse, with the titles Research Methodology and Research Methods together with minor variations of these names in the majority. Significant variations in names used include Information Technology Research Methodology (more technical), Research in Socio-Informatics (societal impact), and Business Research (application in business). Each of these variations signals the overall orientation of the research, either to the broader field of IT, the social dimension and implications of IS, or as a purely business emphasis.

6.2.1 Participation profile of participants

The demographic information of the various participants also reflects this diversity. Table 6.2 summarises the overall data in terms of discipline in which the highest qualification was obtained.

<i>Qualification Profile of Participants</i>	
<u>Highest Qualification</u>	<u>RM Lecturers</u>
IS	13
CS	5
Engineering	1

The total pool of RM lecturers across the sector is 19. It is notable that the majority (13) of RM lecturers have their highest qualifications in IS although a substantial number (5) have CS qualifications.

6.2.2 Research methodology modules offered across the sector at the Honours level

Table 6.3 provides an overview of the research modules (RM and research project) offered at the Honours level, as represented in the intended curriculum documents. The semester in which each module is offered is presented along with the total number of CPs (as a proportion of the total number of credits for the qualification).

Thirteen (13) public universities in South Africa offered PG IS qualifications when the curriculum documents were collected in 2012. Eleven (11) of these universities offered formal RM modules at the Honours level while three universities (UCT, Stellenbosch and North West) offered integrated Honours programmes. NMMU offered two RM modules at the Honours level, one for science students and the other for commerce students; both have been counted for this study, making the total number of RM modules 14. The RM module for science students at NMMU is not credit bearing, hence the 0% contribution on CPs. This unusual situation reflects the varied placement of IS in faculties across the country. IS at NMMU is located in the science faculty, but some IS students follow a business track and therefore require the business RM as well as the generic RM module offered in science.

Table 6.3

Universities Offering Honours-Level Qualifications in IS

<u>University</u>	<u>Module Name</u>	<u>Semester Offered</u>	<u>Credit Points and Percentage of Overall Qualification</u>
University of Pretoria	Research Methodology	S1	15 (9%)
	Research Project	S2	30 (18%)
University of the Witwatersrand	Research Methods	Year	30 (20%)
	Research Project	Year	30 (20%)
University of KwaZulu-Natal	Research Methodology in IS	S1	16 (12.5%)
	Research Project	S2	32 (25%)
University of Cape Town	Integrated programme	S1	5%
	Research Project	S2	23%
Nelson Mandela Metropolitan University	Research Methodology Science	S1	0
	Research Methodology Commerce	S1	20 (17%)
	Research Project	Year	36 (30%)
University of South Africa	Research Methods and Proposal	Year	24 (20%)
University of Fort Hare	Research Methods	S1	8 (6%)
	Research Project	Year	24 (19%)
University of the Free State	Introduction to Research	S1	16 (10%)
	Research Project	Year	30 (19%)
University of Johannesburg	Information Technology	S1	16 (13%)
	Research Methodology		
	Research Project	Year	32 (26%)
University of Stellenbosch	Advanced Theory and Design	Year	90 (75%)
	Research	Year	30 (25%)
Rhodes University	Research Methodologies	S1	4 (4%)
	Research Project	S2	20 (20%)
University of the Western Cape	Research Methods	-	10 (8%)
	Research Project	-	50 (42%)
North West University (Potchefstroom)	Integrated into Research Project	Year	32 (27%)
North West University (Mafikeng)	Research project	Year	32 (27%)

The concept of an integrated programme is used to refer loosely to programmes which do not specify discrete, credit-bearing modules for RM but where RM modules are linked with or

included in other modules offered. A range of degrees of integration was found. For example, UCT does not specify CP weightings for any topics or modules in the Honours programme. The programme thus counts for 120 CPs in total, comprising a variety of topics, including RM. However, the programme is deliberately constructed as a single entity with implied links between the various topics. Stellenbosch has a hybrid integrated programme comprising a research module (30 cps) and an integrated theory and design module (90 cps) only. North West provides another variation of integration, where RM is integrated into the research project module (32 CPs).

Typically, RM (semester 1) precedes the research project (often commencing formally in semester 2). In the intended curriculum where integrated programmes are offered, the sequencing of these two aspects of research is not made explicit. It is significant that very few modules specify prerequisites for the RM and research project modules (Pretoria is a distinct exception). This lack of prerequisite specification for the research project may reflect the tacit assumption that the RM module will be passed before starting the research project module or else that the two modules may run concurrently. In cases where the RM module and research project run over a full year and also for integrated programmes, it is assumed that the RM module is a tacit co-requisite to the project.

The RM modules show a wide range of CP allocations (0 to 30 CPs) and variation in duration (1 term–1 year). Three programmes have the RM component integrated into the overall Honours programme and thus have no specific CP allocation for RM. For the remainder, it is helpful to consider the CP allocation for the RM module as a proportion of the total CPs for the qualification. The range is between 4% (Rhodes) and 20% (Wits), indicating the relatively wide variation of proportional credit attached to the RM modules. The relative CP weight allocated to the research project is also of indirect interest, averaging around 20%, with a minimum of 19% (Fort Hare) and a maximum of 42% (Western Cape).

All RM modules offered at the Honours level, formal or informal, are compulsory. Most institutions offer a 16-CP RM module and a 32-CP research project module.

6.2.3 Research methodology modules offered across the sector at Master's level

Table 6.4 provides a similar overview of the RM modules offered at Master's level.

<u>University</u>	<u>Module Name</u>	<u>Semester Offered</u>	<u>Credit Points and Percentage of Overall Qualification</u>
University of Pretoria	Research Methodology	S1	20 (11%)
	Research Dissertation	S2	90 (50%)
University of the Witwatersrand	Research Methodology	S1	12 (5%)
	Advances in IS Research	S2	30 (12%)
	Research Dissertation	S2	120 (48%)
University of KwaZulu-Natal	Research Methodology in IS	S1	16 (8%)
	Research Dissertation	S2	96 (50%)
University of Cape Town	Integrated programme	S1	6%
	Research Dissertation	S2	50%
Nelson Mandela Metropolitan University	Research Methods	S1	0
	Research Dissertation	S1	100%
North West University (Mafikeng)	Research Methodology	S1	8 (5%)
	Research dissertation	S2	55%

In 2012, five universities offered Master's RM modules, including one that offered an integrated Master's programme (UCT). All of the universities in the table, except for NMMU, offered a coursework Master's programme, including a range of other IS modules. NMMU offered a full research Master's with no formal modules other than the dissertation and the RM modules were not credit-bearing. The remainder of the universities indicated in Table 6.3 but not in Table 6.4 above, offered a full research Master's with no formal RM module. Once again, only Pretoria structured the research programme with Honours RM as a formal prerequisite for the Master's RM module. The relative CP weight allocated to the RM module ranged from 5% (Wits) to 11% (Pretoria), which is a considerably narrower range than that seen in the Honours level table. The majority of research dissertations were weighted at 50% of the Master's programme. In addition to the compulsory RM modules, a variety of research-oriented modules or programmes were also offered at the Master's level. Two universities offered additional, credit-bearing research-oriented modules (Pretoria 40 CPs and Wits 30 CPs) at the Master's level that cover research aspects such as IS theories and philosophy.

In summary, there is a wide range of interpretations of the HEQF statutory requirements, discussed in Chapter 3, at both Honours and Master's levels, which is not unexpected given the flexible nature of the requirements. However, institutional choices of credit rating, integrated research programmes, or stand-alone RM modules may reveal deeper assumptions about the role of RM in research preparation. These variations reflect the institutional or lecturer choices that provide the structural form of research preparation modules and inform issues of purpose, content, teaching strategies, resources, learning objectives, assessment, and organisation, to which we now turn.

6.3 Descriptive Curriculum Framework

As discussed in detail in Chapter 3, Lattuca and Stark's (2011) curriculum framework has been adapted for use in this study. The framework offers useful categories to organise the data from the written curriculum documents. The categories are as follows:

- Purpose
- Content
- Sequence/organisation
- Teaching
- Resources
- Learning
- Assessment.

The analysis will be presented for the two levels of study, covering the Honours RM modules first, followed by the Master's modules and then concluding with observations about the relationships between the Honours RM and Master's RM modules at the universities where formal RM modules are offered at both levels. The disadvantage of repetitive use of the organising categories is offset by the improved clarity of focus.

6.4 Descriptive Sectoral Analysis

As discussed in Chapter 5, the analysis of the range of intended curricula was initiated by content analysis of the handbook and module outlines. Recurring items were recorded in matrices, and general patterns of frequencies were used to get a sense of the overall trends in the data. Furthermore, unexpected occurrences, outliers, and silences were also noted.

In reporting on the descriptive analysis of the intended curricula, overall trends in the form of frequencies are followed by discussion of specific aspects such as unexpected practices or low frequency aspects that cannot be captured in tallies. As discussed in Chapter 5, the extent and nature of information provided in the handbook entries is typically less detailed than that in the MOs. In certain cases, only a handbook entry was obtained from the university. Handbook entries typically include assessment details and purposes but not necessarily details of teaching strategies or resources. In recording the frequency of various aspects of the intended curriculum, it was decided to regard a university as part of the data set for that aspect only if data on the specific aspect was obtained. The reader will thus note minor variations in the total number of universities shown in the supporting frequency data given below. Furthermore, NMMU offered two separate RM modules for some of the business research modules; both were counted as part of the full data set, where appropriate, so the total count for a specific aspect may appear to exceed the total number of universities offering PG IS. The danger of confusion over the differing numbers in various data sets is offset by the more accurate reflection of trends.

Finally, the trends and variations are reported across the sector with no mention of the specific university. Previously reported information was in the public domain and the universities were thus specifically mentioned in the discussion.

6.4.1 Honours-level RM modules

6.4.1.1 Purposes. The purpose of a module is a standard sub-heading or section in an MO; it signals the overall intent of the module and thus warrants separate discussion. As expected, the majority (9/11) of MOs included preparing for the research project as the purpose of the module. Providing a foundation for future study was listed in 3/11 of the MOs, which is lower than expected as Honours research is traditionally regarded as the first encounter with research and provides the foundation for study at the Master's level. Some unexpected purposes were also identified. Thus, one MO stated as a purpose the reporting of findings in an article that focuses on the final product of the entire research process. This goal is unexpected at the Honours level when compared with the more common purpose of preparing to conduct the research project. Another MO claimed the overriding purpose was to get students to think like researchers, emphasising the value of a

research mindset. The same MO listed as a separate purpose the development of a professional IS practitioner; this MO was the only one that made explicit links to the IT industry.

In summary, preparation for the research project was most frequently listed, as expected, although the expected module purpose as a foundation for future study was relatively seldom stated. Outliers included publication of results in an article, which is most unusual for Honours level research; it is notable that the purposes of thinking like a researcher and of practitioner skill development were only mentioned once and from the same institution.

6.4.1.2 Content. The content of a module includes skills and knowledge that are listed in the topics in the handbooks or MOs. Frequently occurring topics in these documents (all 8/12) included the literature review, methodologies, and plagiarism, with the research process most frequently listed (9/12). The relatively high frequency of mention of these standard topics is to be expected. For example, the high frequency of mention of plagiarism as a topic is to be expected as universities grapple in managing this specific ethical issue, particularly at the introductory Honours level. Least frequently listed topics were paradigms (3/12), critical reading (2/12), and IS theories, the latter not being mentioned in any Honours MOs. Topics in the middle range of frequencies included project-related categories (problem definition, research proposal, research tools, and reporting), knowledge categories (qualitative, quantitative, and statistics) and generic skills categories (research management and academic writing).

It is significant that the topic of IS theories was not mentioned at all in any of the Honours RM modules. Mention of the range of theories and theoretical frameworks that could be used in IS research, including TAM (Davis, 1993) and UTAUT (Venkatesh et al., 2003), might have been expected in some RM MOs. This data suggests that this topic is regarded as accessible only for students at more advanced research levels. Sampling and statistical methods (5/12), as expected, were listed in MOs that claimed a positivist or quantitative paradigmatic orientation. The supervisor-student relationship (4/12) is less expected. This focus on the respective roles of student and supervisor has a different flavour to the typical topic lists of knowledge to be gained as it focuses on the softer skills of managing the relationships involved in doing research.

What has been outlined above are the overall trends. Topics that are unique or striking, irrespective of the frequency of their mention in the intended curricula, will now be discussed briefly.

One MO listed the skill of developing a proof of concept prototype, echoing the CS origins of IS. This skill would include elementary programming and model building as IT artefacts are developed as the tangible solution to a problem. Although only one MO mentioned this skill, it does represent the influence of CS methodologies and approaches in IS research preparation in some universities. Another MO listed as a topic the nature of the discipline of IS and the ontology of IS. This philosophical topic is unusual at the Honours level as most modules defer discussion of ontology and epistemology to the Master's degree level.

While the intended curricula exhibit many of the expected claims of topics, skills, and content for a research preparation module, it is the diversity of content and variation of mention across MOs as well as the unique aspects included that are significant in the overview. RM modules are characterised by diverse emphases across different universities as well as by unique, unexpected claims. Although common topics are listed in many of the MOs, it is worth questioning the reasons why some of the MOs did not list standard topics. For example, the topic of a literature review would be expected to be covered in every RM module. This may point to one of the limitations of this analysis under specific curriculum categories, as the topic of literature review may be listed as a learning outcome or objective.

6.4.1.3 Teaching and organisation. As expected, lectures (8/10) and seminars (7/10) were widely used at the Honours level. Workshops (3/10) and student presentations (3/10) were listed in some MOs, as well as supervisor input to the RM module (3/10). Traditional transmission of content via lectures appears to be more or less balanced, with more student-centred modes of engagement.

One of the Honours RM modules specifically outlined the general approach to teaching adopted as a primary organising principle for the module. The approach was described as a “systems approach” that focused on providing “practical advice” for the research project. IS as a discipline deals by definition with designing systems where component parts need to be considered in terms of their relationships with other components. This MO positioned the module as a system

of related and interacting parts that combine to deliver the required output. The additional emphasis on “practical advice” confirms that the interacting components in the module would all focus on what is directly needed and useful for the research project. The same approach was outlined for the coursework Master’s RM module at this institution. It is significant that disciplinary IS thinking is being used here to inform and shape the teaching strategy and conceptions of research in the RM modules.

Organisation refers to the internal structure of a module, including the sequence of topics and assessment tasks. In general, the RM curriculum documents were silent on the sequence of topics to be followed. Detailed discussion of specific module organisation will be provided in the cases analysed in Chapter 8.

6.4.1.4 Resources. This category includes aspects such as lecturers’ slides, module web sites, library electronic resources, and prescribed and recommended textbooks and readings. The most frequently listed resources in the MOs were recommended (11/11) and prescribed (6/11) textbooks, followed by electronic library tools (5/9). Typically, MOs would include a separate section on text resources, partially explaining the high frequency. By elimination, it is clear that almost half (5/11) did not prescribe a textbook. By contrast with the listing of textbooks, other resources, such as slides, web links, and journal articles, were seldom listed (2/11). A module web site was listed in the middle range (4/9), but this appears to be somewhat low in a PC-oriented RM module. Mendeley, a software platform that supports literature searching, organising, and research networking, was mentioned in only one MO. Nonetheless, it is significant that, together with the mix of lecturer-led resources (such as prescribed and recommended textbooks, PowerPoint slides, module web sites, and specified journal articles), student-empowering resources such as Mendeley (an online community of research practice), web links, and electronic library databases are also included.

Disciplinary journals such as *MISQ* and associations such as AIS and ACM were only listed in one MO at the Honours level. Research tools in general and EndNote and Turnitin as specific tools were also only mentioned in one MO. On the other hand, a wide range of prescribed books were reported in the MOs, with the IS and computing-oriented textbook by Oates (2006) being prescribed in two of the six Honours RM modules that had set textbooks. The other prescribed textbooks were unique to each institution and covered a business, social science, IT, or

IS focus. The social science-oriented textbook, an e-book by Bhattacharjee (2012) and available free online, was used in both the Honours and Master’s modules at one university. Some modules did not prescribe a textbook but recommended a range of textbooks and readings (mostly journal articles, some books, and some online e-resources).

Table 6.5 provides some detail about the range of textbooks prescribed in the Honours RM modules:

<u>Authors</u>	<u>Title</u>	<u>Publication Year</u>	<u>Edition</u>	<u>Place of Publication</u>	<u>Claimed Audience</u>	<u>Number of Institutions Using for Honours</u>
Oates BJ	<i>Researching Information Systems and Computing</i>	2005	First	UK	IS and Computing students	2
Bhattacharjee A	<i>Social Science Research: Principles, Methods and Practices</i>	2012	Second - Open access	US	Graduate students in social science, business, education, public health	1
Sekaran, U and Bougie R	<i>Research Methods for Business: A Skill Building Approach</i>	2010	Fifth	US	Business students	1
Maree, K	<i>First Steps in Research</i>	2007	First	SA	Education students	1
Blumberg, B Cooper, DR Schindler PS	<i>Business Research Methods</i>	2011	Second	Europe	Business students	1
Hofstee, E	<i>Constructing a Good Dissertation</i>	2006		SA	Postgraduate students	1

The range of target audiences (business, education, and social science students), emphases (dissertation writing, business, social science research, IS, and computing students), and places of publication underscore the diversity of approaches followed. The textbook by Oates is the only book that specifically targets IS students, albeit in tandem with computing students. It is surprising

that the Oates text with its specific target audience of IS students is not used more widely; perhaps this points to the combination of IS with computing as a complication for RM lecturers.

6.4.1.5 Learning. The focus in this aspect is on the specified learning outcomes in the MOs and handbooks. Learning outcomes represent the specific skills, knowledge, and competencies that students are expected to be able to demonstrate at the end of the module. Some MOs used the term learning objectives, but for the purposes of this analysis these are regarded as equivalent to learning outcomes. In essence, they represent aspects that are likely to be assessed, which is the focus of the next section.

The most frequently listed learning outcomes were writing the research proposal (8/11) and presenting the report (9/11). The focus in both of these learning outcomes is on the product that the student will produce. Moderate frequency learning outcomes (3/11) included planning the research project, reading critically, designing data collection instruments, using research tools, collecting data, and selecting appropriate methodology. These are process outcomes and the last four are directly related to execution of the research project. Analysing data (4/11), another process outcome, was also listed in the medium frequency range. Two other related process outcomes, sourcing and referencing literature and reviewing literature, were listed in four of the 11 MOs, a lower than expected frequency for these core generic learning outcomes. Generic knowledge outcomes such as understanding research (6/11), distinguishing between quantitative and qualitative (4/11), and understanding different methodologies (4/11) were also in the moderately listed grouping.

It is important to note that learning outcomes mentioned as moderately or seldom listed in the MOs are being considered in isolation from other aspects of the MO. For example, some MOs may have listed topics under content rather than in the form of learning outcomes. The intention is to get an overall sense of trends without over-emphasising isolated, individual anomalies that would be better explained within the full context of the complete MO.

One MO lists “impeccable writing” as one of the learning outcomes of the module. This strongly worded phrase (impeccable is defined in the MO as “without error”) raises the issue of the challenges of developing academic writing skills. There may also be an echo of the need for precise accuracy in programming. The focus on error-free writing suggests a concern with

academic literacy rather than the more specific challenge of developing research literacy. In the South African context, this challenge is compounded by the fact that many students are writing in English which is not their first language.

6.4.1.6 Assessment. Assessment methods and weightings are often claimed as important indicators of the value assigned to various aspects of a module. As expected at the PG level, assignments (7/12) and continuous assessment (7/12) were common forms of assessment in the Honours modules. Tests (3/12) and the research proposal (4/12) were less frequently listed.

The majority of credit-bearing Honours RM modules followed continuous assessment practices, with no formal examination. A traditional examination was used at one university while another had a “take--home” research proposal examination. This take-home examination took the form of a question (provide a detailed research proposal for your research project, using the supplied sub-headings) given to students ahead of the examination. The students thus prepared that specific question but were required to produce the research proposal under open-book examination conditions. In general, continuous assessment comprised mostly assignments and the submission of a research proposal, while some included tests. Less common assessment practices included posters, homework, and a participation mark. Two universities included a duly performed (DP) requirement, including class attendance and completion of assignments, as part of the assessment of the RM module.

The wide diversity of assessment practices yields possible clues to deeper assumptions about RM curricula. Continuous assessment regimes suggest the assumption that an RM module involves an iterative process of building research skills and thinking, via a series of formative assessments that all contribute to the building and refinement of these competencies. The use of a DP requirement emphasises the importance of ongoing, consistent attendance and work submission in the formative assessment. Class tests indicate the assumption that there are certain aspects of knowledge and skills that need to be mastered by demonstrating understanding of terminology, recall of sequences and definitions, or explanations of terminology and processes. These may reflect the applied science or practical (Whiteman & Oliver, 2008) notion of master/memorise, followed by application once mastery has been demonstrated. The take-home research proposal reflects the uncommon notion that each student needs to construct their research

proposal in an examination performance, using pre-prepared plans and notes, providing evidence of their individual engagement with and mastery of the assignment. Finally, the use of the poster as an assessment format at the Honours level is unusual and may reflect the assumption that knowledge is best demonstrated by display choices within the constraints of a single poster. It may also reflect an acknowledgment of the importance of presenting a holistic view of the research project, but this may be at the expense of detail.

6.4.1.7 Concluding remarks on the Honours level sectoral analysis. The lens of the curriculum framework adapted from Lattuca and Stark (2011) has enabled a focus on the various dimensions of the RM curricula at the Honours degree level as formally represented in the handbooks and module outlines. The overriding impression gained from the sectoral analysis of the Honours RM intended curricula is of a landscape marked by a common core of structure, purpose, content, teaching strategies, resources, module organisation, and assessment practices, accentuated with instances of remarkable diversity. The aspects of this RM landscape that stand out as commonly stated, infrequently listed, or unique flavours for each of the curriculum framework dimensions have been summarised in Table 6.6 below. The intention is not to attempt to summarise all aspects of the RM curricula as a comprehensive overview but to identify the commonalities and differences that stand out. Thus, aspects that were listed in some MOs, such as research management or research tools, are not included in the table so as to allow distinctive aspects to emerge. The purpose is to gain a mental picture of the particular nature of the Honours RM landscape as reflected in the curriculum documents and to provide a reference point in analysing the RM intended curricula at the Master's level.

The commonalities captured in the table would probably be found in any introductory RM IS module at PG level and they form a foundation for the unique flavours identified. The latter are infrequently mentioned aspects that represent possible surprises, such as the relative absence of disciplinary journals as resources.

<u>Curriculum Dimension</u>	<u>Commonalities</u>	<u>Infrequently Stated</u>	<u>Unique flavours</u>
Purpose	Preparation for the research project		Publishable article Think like a researcher
Content	Research process Literature review Methodologies Academic writing Plagiarism Quantitative and qualitative approaches Statistics (where quantitative approaches dominate)	Paradigms Critical reading IS theories	Ontology in IS Software prototyping Supervisor-student relationship
Learning	Writing the research proposal Writing the dissertation		Impeccable writing
Teaching	Lectures Seminars	Student presentations	Systems approach to the RM module
Resources	Use of textbooks (prescribed and recommended)	Disciplinary journals	Range of titles of textbooks Mendeley research platform
Assessment	Assignments Continuous assessment	Tests	Take-home open book examination of research proposal

Table 6.6 also juxtaposes some aspects that seem not to fit together easily. For example, the traditional purpose of preparation for the research project aligns well with thinking like a researcher, but seems at odds with the end-product focus on publication of an article. Under content, the unique flavours of ontology of IS and prototyping a piece of software stand in opposition to each other, representing as they do extreme aspects of an interpretive approach and DSR respectively. Furthermore, although prescribed and recommended textbooks are commonly used, what is of interest is the wide range of titles, orientations, and formats. Assessment strategies consisting of assignments and continuous assessment provide a different emphasis to the tests and take-home examination. Thus, the RM landscape at the Honours level can be seen as being characterised in all of the curriculum dimensions by a core of shared aspects together with a range of often contradictory, divergent features. The diversity in the naming of RM modules and disciplines is reflected in the diversity of stated practices and content.

We now turn to consideration of the coursework Master’s RM curricula where curricula would be expected to build on the foundation of Honours research. To what extent will there be similarities to the Honours landscape? Based on the analysis of the Honours RM curricula, one may expect a common core and some divergence.

6.4.2 Coursework Master’s RM Modules

The approach adopted here is to characterise the RM landscape at the Master’s level by presenting both frequently listed aspects and infrequently listed aspects as well as unique flavours, in a way similar to the approach for the Honours RM intended curricula above. In addition, however, obvious points of comparison between the two levels will be highlighted where appropriate. Frequencies are followed by percentages in order to enable comparison.

6.4.2.1 Purposes. Table 6.7 summarises the frequencies of module purposes that were specifically stated in the MOs, allowing comparison across levels. The total number of universities that provided data for this particular category and thus form part of the data set is shown at the bottom of the table. Some MOs had multiple purposes so totals exceed the total number in the data set.

<i>Purposes of RM Modules at Honours and Master's Levels</i>		
<u>Purpose of Module</u>	<u>Honours</u>	<u>Master's</u>
Prepare for research proposal	3 (27%)	1 (20%)
Prepare for research project	9 (82%)	4 (80%)
Foundation for further study	3 (27%)	
Critique IS research		2 (40%)
Total number in data set	11	5

A recurring sub-theme in the Honours and Master’s MOs was that the module prepared the student to conduct research in the research project 9/11 (82%) and 4/5 (80%) respectively. Only one Master’s MO listed the preparation of a research proposal as a specific purpose. The slightly different flavour of a Master’s RM module is reflected in the emphasis on critiquing IS research 2/5 (40%), with the combined focus on critique and research within the discipline. One coursework Master’s MO listed research in systems development projects as a specific purpose, raising the possibility of a DSR flavour. This purpose indicates a link with one of the core topics in the IS UG

curriculum (for example, IS Curriculum 2010). The fact that only one university explicitly made this link with the UG curriculum illustrates the gaps between PG research emphases and UG preparation for the world of IS practice. Moreover, it is significant that MOs for Master's (and doctoral) RM modules at one university were strongly positioned in the niche focus of "national development" as a guiding purpose. This niche was further sub-divided into various perspectives, including the IS practitioner, manager, and entrepreneur within the industry and the researcher as a separate, academic perspective. It is significant that both academic and applied roles were recognised, though as separate rather than complementary.

In summary, there are expected similarities but also some significant differences between the levels. The emphasis on critique and systems development research at the Master's level points to important themes that will be developed later.

6.4.2.2 Content. Table 6.8 below shows the detailed frequency of mention of content topics at both the Honours and Master's degree levels.

For Master's degrees, it is significant that project-related topics such as the research proposal, methodologies, and reporting were listed frequently, that is, in 5/5 (100%) of the modules and problem definition, literature review, and research tools were similarly listed in 4/5 (80%). Knowledge-oriented topics such as ethics, plagiarism, and statistics were reported in only 2/5 (40%) of the modules, suggesting less emphasis on content knowledge than process knowledge at the Master's level. It may be assumed that some of these relatively low frequency topics have been covered at the Honours level and would not require repeating. By contrast, IS theory as a topic was listed in 3/5 (60%) of the Master's RM modules whereas there was no mention of this topic in the Honours RM modules. In this case, the topic of IS theories would appear to be more appropriate at the advanced level rather than in the introductory RM module.

	<u>Topics</u>	<u>Honours</u>	<u>Master's</u>
Project	Problem definition	6 (50%)	4 (80%)
	Research proposal	7 (58%)	5 (100%)
	Literature review	8 (67%)	4 (80%)
	Research tools	6 (50%)	4 (80%)
	Methodologies	8 (67%)	5 (100%)
	Questionnaire design	3 (25%)	
	Methods	6 (50%)	5 (100%)
	Data analysis	4 (33%)	4 (80%)
	Reporting	6 (50%)	5 (80%)
	Research process	9 (75%)	4 (80%)
Knowledge	Methodologies	8 (67%)	5 (100%)
	Qualitative and quantitative	7 (58%)	4 (80%)
	Ethics	5 (42%)	2 (40%)
	Plagiarism	8 (67%)	2 (40%)
	Statistics	5 (42%)	2 (40%)
	Limitations		2 (40%)
	Paradigms	3 (25%)	3 (60%)
Generic	IS theories		3 (60%)
	Critical reading	2 (16%)	2 (40%)
	Research management	6 (50%)	3 (60%)
	Academic writing	6 (50%)	3 (60%)
Total number of MOs in the data set		12	5

Sampling and statistical methods appeared in 2/5 (40%) of the modules; as expected, they were listed in MOs that claimed a positivist or quantitative paradigmatic orientation. As at the Honours level, only one MO referred to the supervisor–student relationship as content to be covered. The low frequency of mention across levels reflects the intangible nature of this topic; it is less a topic to be ‘taught’ than a generic skill that develops as an integral part of doing research under supervision.

6.4.2.3 Teaching. Table 6.9 summarises the frequency of explicit mention of each of the following teaching strategies at the respective levels.

Specifically, lectures were indicated less frequently for Master’s RM modules 2/5 (40%) than the overall trend at the Honours level 8/10 (80%). Seminars were indicated as the most common mode of delivery 4/5 (80%), slightly higher than at the Honours level 7/10 (70%). Supervisor input to the RM module was noted at the Honours level 3/10 (30%), but not at the Master’s level. Student presentations at the Master’s level 1/5 (20%) were listed substantially less

than at the Honours level 4/10 (40%). These trends are unexpected for an advanced PG RM module but may reflect on the variable nature and form of the MO as a curriculum document. For example, supervisor input to the research project is standard practice in PG research but may not be recorded as a specific teaching strategy in the RM MO, which is primarily intended for student use.

<i>Teaching Strategies Used at Honours and Master's Levels</i>		
<u>Teaching Strategies</u>	<u>Honours</u>	<u>Master's</u>
Lectures	8 (80%)	2 (40%)
Seminars	7 (70%)	4 (80%)
Workshops	3 (30%)	
Student presentations	4 (40%)	1 (20%)
Supervisor input	3 (30%)	
Block release sessions		1 (20%)
Total in data set	10	5

The use of block release sessions, ranging from one to five days of concentrated contact, is only specifically mentioned at one university for a Master's module. This mode of delivery is often used to accommodate part-time students but is also used to provide focused coverage of specific aspects of the curriculum. For example, training in the use of statistical packages such as SPSS is often conducted in a concentrated, block release format.

6.4.2.4 Resources. Table 6.10 summarises the frequency of mention of various resources across all the RM modules.

<i>Resources Listed in Honours and Master's MOs</i>		
<u>Resource</u>	<u>Honours</u>	<u>Master's</u>
Module web site	4 (44%)	2 (40%)
Library electronic tools	5 (56%)	2 (40%)
Slides	2 (22%)	2 (40%)
Web links	2 (22%)	2 (40%)
Journal articles	2 (22%)	2 (40%)
Mendeley	1 (11%)	1 (20%)
Prescribed textbooks	6 (66%)	4 (80%)
Recommended textbooks	9 (100%)	4 (80%)
Total number of MOs in the data set	9	5

Similarly to the Honours data, a high number of Master's MOs indicated the use of prescribed and recommended textbooks 4/5 (80%). As with the Honours modules, the specific titles were quite diverse, often showing an expected link with the books used at the Honours level. The most commonly used IS and computing-oriented textbook, written by Oates (2006), was prescribed in two Honours modules and one Master's module and recommended in two Master's modules. The other prescribed textbooks were unique to each institution and ranged between a business focus and IS focus. The IS-oriented textbook by Bhattacharjee (2012) was used in both the Honours and Master's modules at one university. At Master's level, the Myers (2009) text (used by one university) has a qualitative emphasis and the Cavana, Delahaye and Sekaran (2001) text (also one university) offers detailed coverage of both the quantitative and qualitative approaches. Some modules did not prescribe a textbook but recommended a variety of textbooks and readings (mostly journal articles, some books, and some online e-resources), as at the Honours level.

Table 6.11 compares prescribed textbooks at the Honours and Master's levels. It is significant that the diversity of prescribed textbooks at the Honours level is slightly less pronounced at the Master's level. For the latter, the prescribed titles are from IS, business, and social sciences and outliers such as education are no longer found. In general, the Master's MOs show slightly more emphasis on resources such as a module web site, electronic library tools, web links, and journal articles than the Honours MOs, with 2/5 (40%) of the latter having listed them as resources used in the modules. This appears to be appropriate for study at an advanced PG level which would be different from the introduction to research afforded at the Honours level. The research support platform, Mendeley, was also indicated as a resource in only one Master's MO; this resource is listed at the same university for both levels.

Table 6.11

Prescribed Books for Honours and Master's

<u>Authors</u>	<u>Title</u>	<u>Year</u>	<u>Place of publication</u>	<u>Claimed audience</u>	<u>Number of institutions using for Honours</u>	<u>Number of institutions using for Master's</u>
Oates BJ	<i>Researching Information Systems and Computing</i>	2005	UK	IS and Computing students	2	1
Myers MD	<i>Qualitative Research in Business and Management</i>	2009	UK	Business and Management students		1
Bhattacharjee A	<i>Social Science Research: Principles, Methods and Practices</i>	2012	US	Graduate students in social science, business, education, public health	1	1
Cavana, RY, Delahaye, BL & Sekaran, U	<i>Applied Business Research: Quantitative and Qualitative Methods</i>	2001	Australia	Business students		1
Sekaran, U and Bougie R	<i>Research Methods for Business: A Skill Building Approach</i>	2010	US	Business students	1	
Maree, K	<i>First Steps in Research</i>	2007	SA	Education students	1	
Blumberg, B Cooper, DR Schindler PS	<i>Business Research Methods</i>	2011	Europe	Business students	1	
Hofstee, E	<i>Constructing a Good Dissertation</i>	2006	SA	Postgraduate students	1	

6.4.2.5 Learning. Recurring and expected topics are summarised in Table 6.12 below. As with the discussion of content, aspects that are related directly to the research project are grouped together, followed by knowledge and then generic skill aspects.

	<u>Learning Outcomes</u>	<u>Honours</u>	<u>Master's</u>
Project	Select research topic	3 (27%)	1 (20%)
	Write research proposal	8 (73%)	3 (60%)
	Review literature	4 (36%)	3 (60%)
	Use research tools	3 (27%)	1 (20%)
	Select appropriate methodology	3 (27%)	2 (40%)
	Design data collection instruments	3 (27%)	1 (20%)
	Collect data	3 (27%)	1 (20%)
	Analyse data	4 (36%)	
	Present report	9 (82%)	1 (20%)
Knowledge	Understand research	6 (55%)	3 (60%)
	Know how to source and reference	4 (36%)	
	Understand different methodologies	4 (36%)	2 (40%)
	Distinguish qualitative and quantitative	4 (36%)	1 (20%)
Generic	Read journal articles critically	3 (27%)	2 (40%)
	Plan research	3 (27%)	1 (20%)
Total number in the data set		11	5

Many aspects, including referencing, planning, using research tools, designing research instruments, and presenting a report were more widely claimed for Honours than Master's level modules. In some cases, it may be that a research skill such as referencing, once developed at the Honours level, was deemed to not require specified coverage at the Master's level again. There are some exceptions to this tendency; thus, the literature review 3/5 (60%), writing the research proposal 3/5 (60%), and reading critically 2/5 (40%) occurred at a similar degree of frequency across the two levels. Significantly, they all relate to academic reading and writing. The replication of these aspects in the Master's MOs not only suggests that these academic skills require ongoing development but also underlines the induction of students into the discourse of the discipline as a key learning focus. Conversely, the finding that, while the learning outcome of ability to analyse data is specifically listed in four Honours MOs, it does not appear in any Master's MOs. This is a curious omission as one would expect development of data analysis to be deepened at the higher level.

Critical reading and writing skills were specified in one of the Master’s MOs, echoing and extending the Honours learning outcome of “impeccable writing” mentioned above. The emphasis on critical reading and writing suggests a higher level of expected rigour than at the Honours level. The issue of the challenges of developing academic literacy discussed above is extended to emphasise critical reading and critical writing, which are rather the province of research literacy. Thus, induction into the disciplinary discourse is shown to be a key learning outcome of RM modules and this theme brings back echoes of the discussion of disciplinary induction in Chapter 2.

6.4.2.6 Assessment. Table 6.13 summarises the relatively common assessment methods and their respective frequencies at both levels:

Table 6.13		
<i>Methods of Assessment at Honours and Master's Levels</i>		
<u>Methods of Assessment</u>	<u>Honours</u>	<u>Master's</u>
Tests	3 (25%)	
Assignments	7 (58%)	4 (80%)
Continuous assessment	8 (67%)	3 (60%)
Research proposal	4 (33%)	4 (80%)
Total number in data set	12	5

The majority of RM modules at all levels claimed continuous assessment and assignments as the dominant methods of assessment. The increased emphasis on assignments for assessment at the Master’s level is expected. The substantially higher proportion of emphasis on the research proposal as a primary method of assessment at the Master’s level is significant. It suggests either that a number of the Honours RM modules did not build in a research proposal as part of the module or that skills in developing a research proposal needed to be further developed. Perhaps the Honours modules followed the form of providing primarily theoretical coverage of RM and of regarding development of the research proposal as part of the research project module. It was noted earlier that several of the textbooks used at the Honours level (for example, textbooks by Oates, Myers and Bhattacharjee) did not include specific coverage of the research proposal.

At the Master’s level, most institutions did not use formal tests in their coursework programmes, suggesting that learning was viewed as a process of engagement, reflection, and

individual growth. One university unusually used the take-home research proposal open book examination at the Master's level in conjunction with classwork assignments, largely mirroring their Honours programme. The specific focus on using a SLR approach in the assignments for one Master's RM module is a variation of interest. The SLR approach is generally associated with the positivist paradigm and is commonly used in health sciences and medicine. This particular department claimed that the positivist paradigm predominated in their RM modules in general and the Master's RM module in particular; the SLR approach is thus in alignment with these paradigmatic assumptions.

6.4.2.7 Concluding remarks on the Master's level sectoral analysis. Table 6.14 summarises the key patterns across the Master's RM intended curricula in a similar format to Table 6.6 that was provided for the Honours RM MOs.

An overall pattern similar to the Honours trends can be discerned in the Master's RM curricula. A common core of purposes, content, teaching strategies, resources, and assessment practices stand in relief to some unique flavours within each aspect. Thus, once again, some aspects in the overall landscape appear to be contradictory or at least in tension. For example, the purpose of systems development is an outlier from the common emphasis on research. In addition, while the learning outcome of reading critically was commonly stated, writing critically was mentioned at only one university; the overall emphasis on aspects of writing can thus be accepted as common, while the more nuanced aspect of writing critically reflects a more specific focus on production. As a further example, the take-home open book exam seems not to align well with the overall emphasis on continuous assessment and assignment work, although the open book format and pre-provided questions do align with assignment work. Finally, the fact that only one MO indicated student presentations as a teaching strategy appears in counterpoint to the widespread use of seminars as a mode of delivery. Nevertheless, there is generally an emphasis on student engagement in the seminar mode that would surely involve substantial student presentation. This type of issue points up the limitations of working with summary terms such as student presentations as used in the MOs without a clear sense of the contextual use of the specific term.

Table 6.14

Overview of Common and Unique Flavours in Master's MOs

<u>Curriculum Dimension</u>	<u>Commonalities</u>	<u>Infrequently Stated</u>	<u>Unique Flavours</u>
Purpose	Preparation for the research project Prepare for dissertation	Critique IS research	Prepare for research proposal Systems development National development as niche area
Content	Research proposal Problem definition Literature review Methodologies Reporting Research tools	Ethics Plagiarism Statistics	Supervisor-student relationship Systematic literature review
Learning outcomes	Reviewing the literature Writing a research proposal Reading critically	Referencing Planning Present report Use research tools Design research instrument Analysing data	Writing critically
Teaching strategies	Seminars	Lectures	Student presentations Block release sessions
Resources	Use of textbooks (prescribed and recommended)	Module web site Web links Electronic tools Journal articles	Range of titles of textbooks Mendeley research platform
Assessment	Assignments Continuous assessment Research proposal		“Take home” open book examination of research proposal

6.4.3 Trends in the Honours and Coursework Master's RM intended curricula

Based on the analysis above, the following broad trends can be discerned across the levels of study and the curriculum categories:

- Common areas of attention with occasional flavours of difference
- Niche focus areas (actual or potential) in IS for specific universities
- The disciplinary influence of IS on curriculum
- The role of the textbook as contributor to diversity and/or disciplinary culture.

A number of practices and foci were frequently repeated in the RM MOs. For example, academic writing was listed frequently at the Honours level as well as receiving more specific mention at the Master's level, in the form of writing critically. Reviewing the literature is another expected core skill that was frequently stated in generic terms and given a more specific, distinctive flavour at one university at the Master's level as the systematic literature review. Assessment practices were commonly assignments and continuous assessment, but one institution unusually used a take-home open book examination format for all of its RM modules.

By contrast, some universities claimed an overall focus or theme as a defining, distinctive differentiation from others. One university claimed the niche focus or theme of national development for all of the IS PG qualifications, a focus that was more strongly emphasised at Master's and doctoral levels. Another university focused on the social dimension of IS research, foregrounding topics such as IS ontology and the nature of the discipline. Others hinted at possibilities; for example, systems development as a purpose suggests the possibility of a design science focus. In all of these cases, the niche focus is the unique, distinctive flavour that the specific university provides in IS, built upon the largely common foundation of research preparation practice found in the IS RM curricula in the country.

Textbooks seem to reflect or play an influential role in the range of common practices and distinctive features in RM curricula. Widespread use of prescribed and recommended textbooks was reported, but the range of titles and emphases allows for distinctive flavours. Some titles have a strongly IS focus (Myers, 2009; Oates, 2005), while others are more generic social science research readers (Bhattacharjee, 2012; Cavana et al., 2001); some have a more scientific orientation (Olivier, 2009), while others are generic business research RM texts (Collis & Hussey, 2003; Saunders et al, 2003; Sekaran & Bougie, 2010;Struwig & Stead, 2001). One textbook used even has an educational orientation (Maree, 2007). The choice of a textbook thus provided an orientation to research for the students, so that either there was a strong focus on specific disciplinary aspects such as IS theories or research was conceived as being largely generic, albeit with a social science, business or educational perspective. In this context, it is curious that few MOs stated disciplinary journals as resources for the RM modules.

A final observation is to note the influence, albeit modest, of IS as a discipline on conceptions of curriculum. Thus, the use of systems thinking to conceptualise the process of research as claimed in the RM MO provides a unique flavour. The research process is thus conceptualised as multiple components and activities that are strongly linked and need to be viewed holistically. It is widely claimed that research is not a neat, linear unfolding of sequential phases, but is more iterative in nature (Bhattacharjee, 2012; Leedy & Ormrod, 2005; Sekaran & Bougie, 2003); the systems metaphor provides a different though complementary perspective to this truism. In an IS context, changes to any part of a system have implications and consequences in various other parts of the system. Similarly in research, changes or additions to methodology are seen as being constrained by the chosen paradigm for the research.

6.5 Concluding Remarks

This chapter has reported on the analysis of the Honours and Master's RM intended curricula, organising the discussion according to the adapted curriculum framework adopted for this study. Common trends noted at the Honours and Master's levels have been supplemented by a discussion of the commonalities between the two different levels. Furthermore, unique flavours at each level have been highlighted as providing evidence of the texture and diversity of topics, resources, methods, teaching strategies, and assessment methods that characterise the IS RM landscape.

The next chapter explores the intended curricula at a greater level of abstraction, seeking to identify persistent themes that inform and reflect formal research preparation curricula in IS.

Chapter 7

Thematic Analysis of Intended Curricula in IS

7.1 Introduction

The previous chapter used an adapted curriculum framework to analyse the Honours and coursework Master's degree RM MOs across the sector. This descriptive analysis provided an overview of a range of issues that characterise IS RM curricula in public universities in South Africa. However, the descriptive analysis also suggested a number of deeper themes operating behind the surface analysis.

This chapter continues engagement with critical research question 1: What are the intended IS RM curricula? The chapter presents a thematic analysis of the RM module outlines, templates, and handbook entries obtained from the majority of South African public universities that offer PG research modules in IS. The chapter focuses entirely on the analysis of themes that were identified from the descriptive sectoral analysis. Initial themes are drawn from the intended curriculum data, and these will subsequently inform the analysis of the specific cases in Chapter 8. The Honours and Master's qualifications are discussed together because the identified themes operate at a level of abstraction beyond the specific levels.

7.2 Themes Emerging from the Sectoral Analysis

The analysis of the intended curricula for RM modules involved the iterative use of matrices to rearrange and re-categorise the data, in the search for broad, underlying themes. Matrices were used in Excel to explore the contents of the intended curricula, with separate worksheets for topics, learning objectives, resources, teaching and assessment. For example, content topics from the documents were listed as column headings and the tallies of each topic were drawn from the data in the documents. Cognate topics were then grouped, for example topics generally covered under quantitative and qualitative approaches. This process of rearranging and refining categories informed the summaries provided in the tables for Honours and Masters' RM modules in Chapter 6 and was used to identify persistent themes. This section crystallises and describes these emergent themes, providing evidence from the RM documents to support the inclusion of each specific theme. The emerging themes are as follows:

- Dominant paradigmatic orientation of the RM module
- Degree of specialisation in a set of related methodologies/methods
- Degree and nature of focus on the IS practitioner
- Degree of linkage of the RM module to the actual research project
- Dominant pedagogical orientation of the RM module.

Each of these themes is best conceived as a continuum along which individual RM modules can be approximately positioned. It is clear that there may be intersections between the various themes. For example, the dominant paradigmatic orientation of a RM module could have an influence on the dominant pedagogical orientation. Similarly, specialisation in business research methods may result in less influence on disciplinary aspects of research, in particular, the focus on the IS practitioner.

Each of the five themes will now be briefly described in order to achieve some clarity and common understanding.

7.2.1 Dominant paradigmatic orientation of the RM module

Modules can be characterised as being predominantly positivist, interpretive or critical. Eclectic orientations of pluralism, mixed methods or pragmatism are also possible.

7.2.2 Degree of specialisation in a set of related methodologies/methods

The wide range of research methodologies and methods can be grouped in a number of ways, one of which is to align related methodologies and methods into a specialisation. A typical specialisation is to group quantitative, qualitative, or mixed methods into separate sets of methodologies and methods as exemplified in different textbooks. Further possible specialisation categories include business methods, the scientific method, practitioner methods, and discipline-focused research. For example, specialisation in the scientific (hypothetico-deductive) method in an RM module would focus in greater detail on aspects such as sampling, questionnaire design, and statistical analysis as a set of related research capabilities rather than interviews or focus groups.

Disciplinary research methodologies and methods are closely tied to IS as a discipline, for example, engagement with IS theories such as TAM or UTAUT rather than generic research methodologies and methods. DSR would be an example of disciplinary-focused research; it is a particular form of specialised research coverage.

7.2.3 Degree of focus on the IS practitioner

RM modules can have a predominantly academic emphasis, focusing on research rigour and methodologies. Topics would thus be drawn from the academic research literature, including journals, conferences, and theses. In these cases, relevance of the research to IS practitioners is not the primary focus. The degree to which research problems are drawn from industry needs and the degree to which research solutions are designed with the industry in mind varies.

7.2.4 Extent of linkage of the RM module to research project

The RM module can be positioned in a number of different ways in relation to students' actual research projects. One perspective is to position the RM module as entirely separate and to see it as providing knowledge and skills that need to be engaged with and mastered before the research project begins. In this front-loading approach, RM is conceived as a set of skills, knowledge, and values, forming a subject in its own right. Other perspectives would argue the need to illustrate RM concepts in direct relation to the students' proposed research projects. For example, in discussing the construction of research questions in the RM module, students would use their own individual research topics to develop a set of research questions. Another approach is to use the research project to create the need for particular topics in the RM module. For example, if students are required to develop a research proposal in the RM module, topics such as developing research questions and reviewing the literature would be presented at the stage when the students are working on that aspect in the research proposal.

7.2.5 Dominant pedagogical orientation of the RM module

Pedagogical approaches range between behaviourist/instructionist, social constructivist, and critical approaches. Resources, teaching and learning strategies, and assessment tasks will provide important clues to the dominant pedagogical orientation.

7.3 Thematic Analysis of Intended Curricula

The broad themes described above will now be used as a framework to analyse the intended curricula received, thereby generating another map of the diverse intended RM curricula in the discipline of IS. In the following chapter, two specific cases will be examined in detail to provide anchor points against the general landscape plotted here.

In this section, each emerging theme is initially discussed in relation to possible indicators within the RM MOs, making explicit the weaknesses and complication of the various indicators. For each theme, claims are made in terms of positioning IS intended curricula along the various continua discussed above. The approach is mainly to provide specific qualitative evidence in support of each claim, but, where appropriate, also to indicate a quantitative sense of the degree of agreement with a specific item across all documents. Thus, a specific learning outcome, such as, to discover facts (20%), indicates that 20 percent of the universities included this learning outcome in the intended curriculum documentation that they provided. In essence, the particularity of the quoted example is set in the context of the degree of agreement across the wider range of available intended curriculum documentation. The Honours and Master's level RM modules are discussed together under each broad theme as we move towards developing a sense of the overall RM curriculum across levels and universities.

7.3.1 Dominant paradigmatic orientation

The paradigmatic orientation of a module was gauged from a number of related indicators, including explicit claims of emphasising a qualitative/interpretive or quantitative/positivist approach, the dominant teaching and assessment methods, the language used to express learning outcomes or objectives, and the prescribed textbook, if any. For this study, possible categories of paradigmatic orientation include positivist, interpretive, critical, mixed methods, and design science, although the latter two are arguably not strictly paradigms. A pluralistic orientation would cover at least two research paradigms.

In the MOs, the paradigmatic orientation was either stated directly as an overriding philosophy in the introductory section or strongly implied in other sections. In general, the discourse of paradigms in the MOs used the dominant terminology of quantitative and qualitative approaches, although some mention of positivist and interpretivist perspectives were also included.

For example, four (36%) Honours RM modules included the learning outcome of distinguishing quantitative and qualitative approaches, while only one (9%) had the learning outcome of explaining the epistemology of the project.

At the Honours level, 9 (64%) of the 14 RM modules claimed a pluralist position, covering both quantitative and qualitative approaches. Closer examination of all the indicators suggests that only three (21%) are pluralistic, with roughly equal coverage of both qualitative and quantitative approaches, nine (64%) are predominantly quantitative and only two (14%) predominantly qualitative. The Honours RM modules that are predominantly quantitative included expected topics such as statistics (42%). This anticipated trend was extended by certain modules that claimed more specific positivist specialisation, including topics such as experimental design and modelling and simulation (9%). One of the Honours MOs where, for example, the primary goal of research was described as discovering facts, had strong indicators of a positivist worldview and assumptions. One predominantly qualitative module included specific learning outcomes related to qualitative methods, including using observation, using action research, and conducting interviews. Only one MO made specific reference to the DSR approach, indicating that this type of research is not widely accepted as a necessary part of the research preparation curriculum at the Honours level.

As with the Honours MOs, a number of the coursework Master's modules claimed to be multi-paradigmatic, providing an introduction to a range of possible research paradigms. Again, the discourse in the MOs was primarily linked to quantitative and qualitative approaches, where three (43%) MOs included specific topics on these two broad research orientations. However, the Master's MOs were more nuanced in that each one claimed a dominant paradigmatic orientation of the module. Thus, one MO suggested coverage of the various research paradigms with a focus on the qualitative approach; another focused on the "scientific method and hypothetico-deductive approach". Overall, three IS departments (75%) claimed a positivist, quantitative preference and only one (25%) a qualitative, interpretivist leaning. The latter module appropriately prescribed Myers as the primary textbook resource, with its strongly qualitative flavour. It is notable that two of the three departments claiming a positivist approach were situated in a commerce faculty and the other in science, whereas the qualitatively oriented IS department was in the Faculty of

Engineering, Built Environment and IT, a hybrid grouping. No clear patterns or expected associations can be discerned.

It is significant that one Master's MO listed an aggregated set of key skills around literature searching, retrieval, and evaluation. In addition, the unique emphasis in this module on following a SLR protocol at the Master's level indicates a distinctive elevation of rigour. The SLR approach to building a literature review has its roots in medical and health research where a comprehensive, repeatable overview of all "quality" previous studies is performed following explicit protocols and inclusion criteria. These positivist origins are still associated with SLR as an approach to literature searching and are in alignment with the clearly stated positivist orientation of this module.

A unique focus on IS research and critique in one Master's MO suggests emphasis on IS theory, but more significantly hints at the absence of elements of the critical paradigm across MOs. The term 'critique' is more likely to refer to a general critical perspective (questioning assumptions, identifying weaknesses in the methodology or argument) than adherence to the principles of the critical approach in IS as stated by Myers and Klein (2011). The general absence of any other specific mention of the critical paradigm at both Honours and Master's levels deserves detailed discussion within the broader context of IS disciplinary trends, both nationally and internationally.

Indirect indicators of paradigm such as teaching approach, assessment methods, prescribed and recommended books, and language are generally aligned to the explicit claims of paradigm in the MOs. Furthermore, objectives that are predominantly positivist (testing existing theories, extensive statistical methods content, and default use of surveys) are couched almost exclusively in the learning outcome language of "You will know...", "You will have knowledge of..." or "You will know how to...", and they are assessed predominantly by tests and examinations. Module aims include "to give students the knowledge...". For example:

You will know Conditional and categorical propositions. You will acquire skills in deductive and inductive (retroduction and inductive generalisation) reasoning. (MO)

Some exceptions to this general alignment between claimed and indirect indicators may be identified. One specific Honours RM module claimed to be predominantly qualitative in emphasis, and yet one of the prescribed books is a textbook by Olivier (2009), which follows a strongly CS,

positivist approach to research. This apparent contradiction suggests incorrect use of the qualitative approach as a descriptor for the module and indeed the overall flavour of topics and learning outcomes is also predominantly positivist. Any lack of alignment between indirect paradigmatic indicators and the claimed paradigmatic position is of particular interest since the claimed research paradigm and the paradigmatic orientation of the pedagogy should be in broad alignment. One Honours RM MO declared coverage of both qualitative and quantitative approaches, but the majority coverage by far (as measured by number of sessions and time allocation) was quantitative (statistical methods and questionnaire design) with nominal coverage of qualitative methods (focus groups and interviews). Another Honours RM module equates research with “discovering facts”, yet the MO includes Myers (2009) as a recommended text, a textbook that foregrounds qualitative approaches.

In summary, as expected, a range of diverse paradigmatic orientations were evidenced in the intended curricula. The qualitative and quantitative terminology can be largely equated with interpretivist and positivist paradigms, and these feature across a number of programmes. Overall, predominantly positivist approaches to research are in the majority at both Honours and Master’s levels. It is significant that no institution claimed, either directly or indirectly, to adopt a critical paradigmatic orientation or any version of the mixed method paradigm. It is also significant that most claimed a pluralist position in terms of inclusion of multiple paradigms in RM modules, although one paradigm generally dominated. Finally, contradictions or inconsistencies in terminology regarding paradigms suggest that the territory and discourse of paradigms in IS research preparation is still relatively new and developing.

7.3.2 Degree of specialisation in a set of related methodologies/methods

Some RM modules claim to provide general coverage of a wide range of approaches, methods, and methodologies without specialising or focusing on any one specific approach. Specialisation refers to detailed focus on a set of related research capabilities grouped around specific paradigms, business perspective or IT industry links.

As discussed in the section above, the majority of RM modules at the Honours level claimed a pluralist position, covering a range of paradigms. These claims are in alignment with some of the documentary evidence indicating that a range of methodologies, methods, and

techniques are covered in the Honours RM modules. Examples of such learning outcomes include selecting appropriate methodology (27%), understanding different methodologies (36%), and choosing and applying appropriate data collection methods (27%). At this level, prescribed textbooks, such as Oates (2006) and Bhattacharjee (2012), typically provided a broad introduction to a range of approaches, methodologies and methods.

However, against this backdrop of general coverage, distinct foci or specialisations can be discerned. These specialisations are discussed in turn below.

7.3.2.1 Business specialisation. Some RM modules (3/12) claimed a clear focus on business research as a specialisation. The overarching purpose of the module is to prepare to do business research, and prescribed and recommended books, such as Collis and Hussey (2003), Struwig and Stead (2001), Blumberg, Cooper and Schindler (2011), Zikmund, Babin, Carr & Griffin (2012), and Sekaran and Bougie (2003), explicitly present a business research orientation. Even stated learning strategies for students also evinced a business flavour; in one module, students were required to produce a management summary of oral presentations for assessment.

7.3.2.2 Disciplinary specialisation. Some RM modules included specific discipline research emphases. Learning outcomes such as understanding the nature of IS research, topics such as IS Research, and reference to IS-specific learning resources, such as AIS, ACM, and *MISQ*, are included. Prescribed books at all levels reinforce this trend as Myers (2009) and Bhattacharjee (2012) include substantial IS research examples and illustrations and Oates (2006), prescribed in two Honours RM modules and one Master's RM module and recommended in two Master's modules, provides explicit and implicit comparisons between research in IS and CS. For each chapter, the Oates textbook provides a number of relevant references to key IS journal articles, thus deepening the disciplinary emphasis. Furthermore, specific mention of IS theories (one Honours and two Master's) and of IS research developments (one Master's) in some MOs provide further evidence of the expected discipline-specific flavour of RM curricula.

Less frequent emphases include the stated purpose of developing a professional IS practitioner with an eye on the IT industry and specifically focusing on research in systems development projects. The latter focus is quite unusual, linking with the overriding emphasis on IT systems planning, design, and implementation at the UG level. Another institution delineates

various research emphases in their Master’s programme, including entrepreneurial, managerial, and practitioner streams.

7.3.2.3 Design science research. Another variation of interest is the inclusion of DSR as a topic in one of the Honours MOs. DSR has been claimed as a new paradigm for IS research, and it includes a specific focus on rigorous design and testing of IT artefacts that are relevant to the IT and business industry. A number of proponents of this view (Hevner et al., 2004) claim DSR as the defining approach to research in the discipline of IS.

7.3.2.4 Concluding remarks on specialisation. Across all modules, learning outcomes, purposes, teaching and learning strategies, topics, resources, and materials are generally aligned within the specialisation streams of paradigm, business, and discipline. However, one Honours RM module is a particular outlier as it stated its primary purpose as building knowledge and skills to produce an article. This focus on a deliverable or product that is specific to the academic world of publishing raises a number of questions. The MO listed skills in using “tools for scientific paper production” and in writing articles among the objectives of the module. This emphasis on article production at the Honours level is unexpected since in most cases students are being introduced to research for the first time, which aligns with the HEQF requirement to introduce Honours students to research.

Table 7.1 provides an overview of the main specialisation streams and the frequency with which each different specialisation was followed. In some cases, the available documentation did not provide sufficient information to make an assessment, and these cases have been indicated as such.

<i>Specialisation Streams</i>					
<u>Level</u>	<u>Generic (Low Specialisation)</u>	<u>Business</u>	<u>Disciplinary</u>	<u>Practitioner</u>	<u>Unable to Categorise – Insufficient Information</u>
Honours	7 (64%)	3 (27%)	1 (9%)	0	2
Master’s	2 (50%)	0	2 (50%)	0	1

The majority of RM MOs across the two levels have a generic, academic emphasis on preparation for the research project. RM topics dominate, with some MOs emphasising business research and some emphasising disciplinary aspects of research, but significantly there is none with a predominant focus on the practitioner. This relative lack of mention of the IT industry in the MOs will be discussed in more detail in the next section.

7.3.3 Degree of focus on the IS practitioner

An obvious indicator of an orientation of research towards the needs of the IS industry and practitioners would be specific mention of this in the MO. For an applied discipline such as IS, a relatively strong emphasis would be expected, but this theme was characterised by a relatively limited reference to IS practice in the MOs.

Analysis of the introductory sections, purposes, topics, and learning objectives in the RM MOs across all levels yielded relatively few references to the IS industry or practice. In particular, two Honours RM modules referred to the need to consider the contribution of the research project to the IT industry while one other claimed that the research module would “improve employability”. One Master’s RM MO presented a range of niche areas or streams, including those of practitioner, IS manager, and entrepreneur. However, the overriding impression is that such references are of secondary or peripheral emphasis in the overall RM modules. Research preparation in IS seems to be strongly directed towards academics as consumers and specifically focused on preparing for the research project and dissertation.

In conclusion, research preparation modules in IS are substantively geared towards meeting the needs of the research project and dissertation, with limited emphasis on the IS industry and practice. As an applied discipline, this lack of emphasis is unexpected.

7.3.4 Extent of linkage of RM module to the research project

A front-loaded curriculum requires the student to engage with a range of content and practice skills as theoretical and practical preparation for later application in the field. Whiteman and Oliver (2008) classify this approach as a rehearsal for a future performance. By their very nature, RM modules are designed to provide useful content, theory, and skills to enable students to conduct research. By way of illustration, the majority of Honours RM modules claimed that the overarching purpose of the module is to prepare for the research project (82%). However, the

approach to achieving this goal varies. The front-loading approach to research education presents a range of content and builds research skills as separate, unrelated preparation for the actual research project that lies ahead. Thus, core topics such as the literature review, topic selection, problem statement, research questions, and the research proposal are engaged with in a generic way, using a range of examples and cases to provide understanding and practice. The essential characteristic of this approach is that linkage with students' actual research topics is not emphasised; moreover, it is assumed that generic engagement with the concepts of research is transportable to the real world research project that necessarily happens at a later stage.

By contrast, the integrated approach to research preparation engages with the same concepts, theories, and skills, but the engagement is primarily through the vehicle of the student's own research topic. Thus, in the integrated approach, the topic of reviewing the literature is discussed and practiced in the context of the students' need to find literature related to their topics and for writing the literature review. This module topic would be assessed by means of a preliminary review of the literature for each student's specific research topic. Another deliverable for assessment in this approach would be a detailed research proposal for the student's actual research project.

Overall, many of the learning outcomes in the Honours MOs, for example, suggest an integrated approach. The learning outcomes are couched in the language of action, including preparing a research proposal (73%), selecting a research topic (27%), producing a literature review (36%), selecting an appropriate methodology (27%), producing a research design (18%), and presenting a report (82%). By contrast, many learning outcomes hint at the front-loading approach, phrased in the language of knowing and understanding, including understanding research (55%), understanding different research methodologies (36%), knowing how to source and reference (36%), and understanding plagiarism (27%). The inference is that this knowledge is required before the project proper is begun, but it is also possible to integrate these types of learning outcomes with actual project work. Generic learning outcomes such as reading journal articles critically (27%) and planning research (27%) could be achieved through either front-loading or integration. Learning outcomes in the Master's MOs generally follow similar patterns.

The forms of assessment used in the modules may give an indication of whether the approach is predominantly front-loading or integrated. Traditional class tests and examinations

lend themselves to front-loading with more emphasis on recall and comprehension type questions. By contrast, continuous assessment suggests the possibility of integration with the research project where assignments on aspects of actual projects combine into a final research proposal deliverable. However, it is possible that continuous assessment assignments have no application in specific student projects and that, instead, generic project themes are used to illustrate research concepts (for example, an assignment that compares different research collection methods).

In the Honours MOs, continuous assessment (67%) and individual assignments (58%) are the dominant assessment modes with tests (25%) and examinations (17%) in the minority. Similar trends occur in the Master's MOs, with assignments (80%) and student presentations (60%) dominating the types of assessment used and only one university using a form of examination. As discussed previously, this examination unusually has the form of a take-home research proposal where the examination question (develop your research proposal) and format (sub-headings and weightings) are provided beforehand.

The form and approach used in prescribed textbooks will also provide an indicator as to the overall approach used in a module. At the Honours level, 60% of the received MOs prescribe a textbook, rising to 80% for Master's RM modules. Clearly, the degree of reliance on the textbook could vary between close chapter-by-chapter sequencing from the textbook to using the textbook as a supplementary reader. Previous sections have discussed how most textbooks do not directly address the actual development of a research proposal as a core topic.

Thus it appears that identifying criteria to distinguish between front-loading and integrated approaches to research preparation is difficult. In addition to the problems mentioned above, most RM modules will contain a mixture of the two approaches; this means that it is the predominant approach that is of interest. For this study, it is argued that the manner in which the research proposal is described and assessed is the best indicator of the dominant approach. A module that has a learning outcome to prepare a research proposal and that includes the research proposal as a substantive deliverable for assessment is assumed to follow a predominantly integrated approach. The front-loading approach will have no reference to or very limited mention of the research proposal, particularly as a submission for assessment. Textbook coverage of the process of preparing a research proposal is another supporting indicator of an integrated approach.

Analysis of the range of evidence in the intended curricula, using primarily the criterion of a focus on developing a research proposal that would form the basis for the actual research project and would be assessed, as outlined above, yields the analysis laid out in Table 7.2. Once again, in some cases, the available documentation did not provide sufficient information to make an assessment, and these cases have not been included in the proportions shown.

Table 7.2			
<i>Degree of Linkage Between the RM Module and the Research Project</i>			
<u>Level</u>	<u>Predominantly Front-Loading</u>	<u>Predominantly Integrated</u>	<u>Unable to Categorise (Insufficient Information)</u>
Honours	4 (36%)	7 (64%)	3
Master's	1 (25%)	3 (75%)	1

Overall, the dominant approach appears to be to link the RM module to the actual research project. More specifically, predominant use of the front-loading approach is seen mainly at the Honours level, where students encounter RM and research for the first time.

7.3.5 Dominant pedagogical orientation

The assumptions and values informing the design of the curriculum have been classified into three categories by Toohey (1999) with the characteristics of each category being seen in the predominant teaching methods, assessment methods, and resources used. Toohey describes the first view as the technical/instructivist view. This view is characterised by the predominant use of formal lectures, tests, and examinations; prescribed textbooks often embody similar assumptions, and exclusive use of such textbooks would confirm the technical perspective. The second view is the constructivist view. It is characterised by a predominant use of social constructive teaching methods, such as group work and seminars, and assessment modes that favour portfolios, assignments, and continuous assessment; resource material emphasises social media such as Mendeley, blogs, peer review, and collaboration. Toohey's third view is the critical view, showing a predominant focus on issues of power and societal issues and with an emphasis on exposing covert values and assumptions. This third view is distinctly absent in the intended curricula for IS PG RM modules and will not be used as a category in assessing the modules.

Indicators used in assessing the predominant pedagogical approach are shown in Table 7.3.

<i>Indicators of Predominant Pedagogical Approach</i>		
<u>Indicator</u>	<u>Instructivist</u>	<u>Constructivist</u>
Teaching method	Lectures, block release sessions	Seminars, workshops, practicals, and student presentations
Resources	Lecture slides, prescribed book	Mendeley, module web site, web links
Assessment modes	Examinations, tests	Continuous assessment, assignments, Research Proposal, presentations

Table 7.4 uses the indicators from Table 7.3 to summarise the overall patterns indicated from the RM MOs.

<i>Frequency of Predominant Pedagogical Approach</i>				
<u>Level</u>	<u>Predominantly Technical/Instructivist</u>	<u>Predominantly Constructive</u>	<u>Neither is Dominant</u>	<u>Unable to Categorise</u>
Honours	4 (40%)	3 (30%)	3 (30%)	3
Master's	1 (20%)	1 (20%)	2 (40%)	1

The Honours RM modules are relatively evenly distributed across the two primary approaches, with three modules showing a roughly equal mix of the two views. The predominantly instructivist approach shows a slight predominance at the Honours level. The Master's modules show the full range of pedagogical orientations, with two MOs displaying a mix of instructivist and constructivist methods. At the senior levels of research preparation, one would expect the constructivist approach to dominate.

In summary, the instructivist and constructivist approaches to pedagogy both feature across the IS RM landscape, based on evidence in the MOs. The critical approach does not seem to feature at all, echoing the absence of a critical paradigmatic orientation discussed in section 7.3.1 above.

7.4 Concluding Remarks

The IS RM curriculum is characterised by substantial diversity, yet broad patterns exist. Quantitative approaches to research dominate the intended RM curricula and instructivist approaches to pedagogy are widely used. Despite this, many claim adherence to a pluralist

approach, covering both qualitative and quantitative methodologies. The critical paradigm and mixed methods approaches are absent from the formal RM curricula.

Preparation for the research project and dissertation are the primary drivers of RM curricula, with almost no mention of IS practitioners as a source of research problems or as recipients of researched solutions. Most RM modules link module content closely to students' actual research projects. RM modules are largely generic in nature, focusing on academic aspects of research methodologies as a subject in and of itself, with relatively few exceptions, specialising in either business research or focusing on IS research methodologies and theories.

These patterns have been drawn from the formal, written, official documents that were used in describing the purposes, topics, teaching and assessment strategies, resources, and learning outcomes in the handbooks and MOs. Thus, the identification of broad patterns across universities in the country achieved in this way lacks the richness and depth of specificity and cannot encompass an understanding of each institutional IS RM curriculum as a system.

In order to achieve this depth of analysis, the next chapter considers two specific cases of RM curricula in more detail, using the themes identified in this chapter as a framework but utilising multiple data sources, including interviews with lecturers, observation of teaching, scrutiny of resource material, and assessment of students' work, in addition to the formal, official curriculum documents.

Chapter 8

Case Analysis of Enacted Curricula in Information Systems

8.1 Introduction

Chapters 6 and 7 have provided detailed analyses of the formal, written curriculum documents which specify the IS RM modules at Honours and Master's' levels across the South African public university landscape. General trends emerged from the analysis, including the paradigmatic orientation of the module, the extent of linkage between the RM module and the research project, the nature and degree of specialisation of the RM module, the extent of focus on the IS practitioner, and the pedagogical orientation of the lecturer. These general and emerging trends are best contextualised in discussion of a specific instantiation of an RM module.

The primary aim of this chapter is to engage with critical research question 2—How are the IS RM curricula enacted? As discussed in Chapter 5, criteria for inclusion as cases included degree of participation in the focus group discussions, a clear paradigmatic orientation, faculty location, and interest in RM practices. The primary goal was to select two cases that would represent the diversity of paradigm, faculty location, and RM practice as best possible. Two data-rich, contrasting cases have been selected as instantiations of the core issues in research preparation in the formal RM modules. Participants from both cases provided rich input into the VFG discussion. One case claimed a positivist orientation and the other espoused an interpretive approach. The intention has been to use the comparison to make explicit any assumptions behind the two cases. Each case will be represented in some detail, using a mosaic of data sources that yield insights into lecturer enactment of the curriculum. These data sources include VFG discussions (what lecturers say they do in a group discussion context), interviews (what they say they do in a one-on-one conversation), observations (what the researcher observed during seminars), materials (prescribed books, notes, and worksheets used) and examples of assessment, as appropriate. The VFG data has been used in combination with the interview, observation and documentary data from the two cases to supplement and complement the other data sources. Methodological and data triangulation has thus been used to confirm or disconfirm findings. The unit of analysis is the lecturer as a conduit to understanding the RM curriculum.

The Honours and Master’s level modules will be analysed together in this chapter as the goal is to understand the broader RM curriculum and its enactment rather than to focus on the specific levels separately. Articulation and linkages will emerge from the holistic analysis. The intended goals of curriculum (as illustrated in the formal documentation) will also be used to provide the formal curriculum context within which the curriculum is enacted.

The first section below describes the analytical framework that has been used to segment the various data for analysis.

8.2 Analytical Framework

This study adopts the perspective of the lecturer as the primary vantage point for accessing curriculum conceptions. The focus is primarily on the intended curriculum (Chapter 6 and 7) and lecturers’ conceptions of how it is taught and tested (Chapter 8). Elements of the hidden and null curricula will be teased out, where possible.

For this chapter, Lattuca and Stark’s (2011) framework for curriculum analysis, discussed in greater detail in Chapter 3 and used in Chapter 6, has been reconfigured into the following seven questions about the curriculum (listed in Table 8.1), drawing on the themes that emerged from the sectoral analysis in chapters 6 and 7. The question format is more appropriate to the analysis of the cases and incorporates some emerging themes from Chapter 7.

Table 8.1	
<i>Revised Analytical Framework</i>	
<u>Question</u>	<u>Description</u>
Why?	Purpose(s) of the curriculum
What?	Content and organisation
Within what frame?	Paradigmatic or disciplinary orientation
How?	Pedagogical orientation
Using what?	Materials and resources
To what standard?	Assessment
For whom?	Stakeholders – students, industry, society

In order to tell the stories of the two cases more clearly, it was decided to combine some of these dimensions. Paradigmatic orientation aligns well with the purpose, content, and organisation of a module. Pedagogy and materials make another logical grouping. Thus, the following four broad groupings of themes have been used to organise the discussion:

- Paradigm, purpose, content, and organisation
- Pedagogy and materials
- Assessment
- Stakeholders.

The next section outlines the choice of representation for each case and the process that has been used to explore the curriculum dimensions in each.

8.3 Representation

Each of the two cases, QuantU and QualU, is represented by a main actor and a cast of supporting actors, contributing in varying degrees to the enactment of the research preparation curriculum. In the Prologue to the thesis, a fictional discussion among four of the main actors has been constructed to introduce the actors, as well as to outline their perspectives on some of the significant themes that have emerged across the various data sources. Frank and Gary are colleagues at QuantU and Lyn and Philip are at QualU. Interview and VFG data have been used to construct the discussion, ranging from verbatim quotes to claims rephrased by the researcher. The fictional names are intended to offer a measure of anonymity to the actual participants.

8.4 Case analysis

The conversation in the Prologue raised several issues which were expanded on in the previous chapter, namely pluralism versus specialisation, rigour versus relevance and the issue of audience. We now move into detailed discussion of each dimension of the condensed analytical framework where the echoes of these conversations will resound.

8.4.1 Paradigmatic orientation, purpose, content and organisation

Various themes will be discussed and illustrated in this section. Some have already been outlined in broad brushstrokes in chapters 6 and 7, but greater depth of analysis and evidence will be provided in this chapter. Some of the themes also appear in a slightly different form as the thematic analysis has evolved. The themes are as follows:

- Influence of dominant research paradigm on content

- The degree of linkage between RM modules and the research project and the implication for how research preparation is conceptualised
- Varying emphases on technical rigour and philosophical considerations.

8.4.1.1 Paradigmatic orientation. One of the primary criteria for selecting QuantU and QualU as cases for detailed analysis was the predominant paradigmatic orientation espoused and enacted at each university. At both universities, the Honours RM modules claimed a pluralist position in terms of coverage of research paradigms. Students were introduced to the positivist, interpretivist, and critical paradigms, although stronger emphasis was placed on positivist research at QuantU and on interpretivist research at QualU. This stronger emphasis was reflected in the time allocated as well as the proportional weighting given in assessments. Neither university spent much time, if any, on the critical paradigm.

By way of illustration, the Honours programme at QuantU was presented in the MO in relatively neutral terms, with no explicit focus on any one paradigm or orientation.

Students are taught various research paradigms including the interpretive, hermeneutic, and positivist approaches to research in the social sciences (QuantU MO).

Gary, as coordinator of the Honours programme at QuantU, indicated that he was not “enamoured of paradigms” as they are simply different “versions of truth” (Interview), and the dominant paradigm at an institution was influenced by many factors, including academic staff orientations. The prescribed textbook for the RM module, which is Bhattacharjee (2012), *Social Science Research: Principles, Methods and Practices*, is a general research methods text for the social sciences, including substantial coverage of quantitative and qualitative approaches. Analysis of 2012 Honours research proposals, a major deliverable of the RM module, showed a majority of purely quantitative studies (8/14), some purely qualitative (2), and a few mixed methods studies (4). In addition, the greater proportion of lecturing time was devoted to the quantitative approach (Gary, Interview). Thus, both the quantitative and qualitative approaches are included in the module, but the quantitative approach dominates in terms of time and type of study chosen by students.

The QualU Honours RM module was depicted in the MO as pluralist and pragmatic (“practical advice”). Claims for plurality of coverage of paradigms, methodologies, and methods (Lyn, VFG) in the formal preparatory modules emphasised that "none are 'incorrect', you get good and bad research no matter what paradigm or methodology you use" and "you need to know that all exist even if you specialise in only one" (Lyn, VFG). Moreover, the claim was made:

So we try not to let a paradigm predominate, and we do not emphasise any one data collection, analysis or epistemology or ontology. (Lyn, VFG)

The explicit claim of even-handed plurality is offset by the implicit admission that it is difficult to prevent domination of one specific paradigm. Espousal of ‘fair’ coverage of all paradigms represents the ideal goal, but the implicit admission that this is not possible acknowledges the inevitable influence of the lecturer, department or even institutional paradigmatic leaning. In particular, the critical paradigm received the least emphasis and was the aspect of the module that students generally did not perform well in (Lyn, Interview).

The prescribed textbook for QualU Honours, which is Oates (2006): *Researching Computing and Information Systems*, is a general research methods text specifically written for CS and IS students, including substantial coverage of both quantitative and qualitative approaches. Analysis of the Honours research proposals (66) showed only 9 quantitative studies with the majority being qualitative. The most commonly stated paradigm was the interpretivist paradigm, and it was most commonly associated with the case study research strategy, using interviews as the data generation method, suggesting that this may be presented as the default combination. Only two students claimed the critical paradigm as underpinning their studies, and only one claimed design science as the paradigmatic orientation. Overall, the interpretivist paradigm was in the majority, echoing the overall paradigmatic orientation at QualU, but the range of claimed positivist and critical paradigms in the studies supports the claims of coverage of all three paradigms. The dominant paradigmatic orientation of the RM module is thus reflected in the claimed paradigms in the research proposals, which are the summative assessment deliverables in the module. Each case then is clearly distinguished in terms of its dominant paradigmatic orientation.

The relative differences in paradigmatic emphasis at the Honours level at each university were accentuated at the Master's level. QuantU claimed strong adherence to the “hypothetico-deductive” approach whereas QualU presented a strongly interpretivist emphasis. Thus, the Master's RM module at QuantU was clearly positioned in a predominantly positivist frame, with the “strong focus” on the hypothetico-deductive method”. Frank acknowledged that he had been schooled to “favour a particular paradigm and really understand the basket of techniques that fall in that approach and feel expert enough in them not only to do them but also to teach them” (Frank, Interview). The extensive list of prescribed readings were dominated by articles with a technical, positivist flavour, for example, Burton-Jones (2009), ‘Minimising Method Bias through Programmatic Research’ and Churchill (1979), ‘A Paradigm for Developing Better Measures for Marketing Constructs’. The dominant paradigm also clearly played out in the sample of research proposals at the Master's level—all are strongly positivist. The strong similarity in form and content suggests that the students follow a standard formula in planning quantitative research studies. Observation of a Master's session at QuantU on the limitations of research provided further evidence of a strongly positivist focus on the technical aspects of reliability and validity.

By contrast, at QualU, the Master's RM MO emphasised the need to “master” the “critical ... aspects of qualitative research in Information systems” (MO). The prescribed textbook, which is Myers (2009), *Qualitative Research for Business and Management*, focuses on qualitative research explicitly. In addition, a sample of research proposals at Master's and doctoral level are all qualitative studies, commonly using the case study research strategy. Allocation of seminar time predominantly favoured the qualitative approach; the total time for coverage of quantitative research in the Master's RM module is one two- hour session (Philip, Interview).

The RM lecturers at QuantU showed strong similarity of perspective and consensus on the paradigmatic orientation. By contrast, substantial differences in perspective were observed between the research module lecturers at QualU. For example, at the Honours level at QualU, Philip advocated coverage of one paradigm in depth whereas Lyn described current practice as being coverage of the three major paradigms (positivist, interpretivist, and critical) in limited detail with their associated methodologies and methods. She acknowledged that time constraints mean that they really do “quantitative lite” (Lyn, Interview). Philip (VFG) made the provocative point that “over-emphasis on paradigms is not helpful to students and is symptomatic of IS's lack of a

strong identity". By contrast, Lyn (VFG) claimed the emphasis on paradigms in RM modules at the Honours level as a positive aspect.

In conclusion, the dominant paradigmatic orientation at QuantU is positivist and at QualU interpretivist, although alternative paradigms are included as counterpoints, especially at the Honours level. Prescribed material, the student research proposals, and lecturer claims all align strongly with the dominant paradigm. It is significant that QuantU presents the issue of paradigm in neutral, uncontested, and uncontroversial terms, perhaps echoing the general positivist perspective on paradigms, whereas QualU with its qualitative focus, includes elements of disagreement and contestation from within its own group of academics.

The next section considers the stated purposes of the RM modules, bearing the paradigmatic orientation and its implications in mind.

8.4.1.2 Purposes. Both universities claimed that the primary purpose of the Honours RM modules was to prepare students to do a small research project. The predominant claimed purpose for IS RM modules at the Honours level included emphases on knowledge and skill acquisition, in other words, a “toolkit for a small research project” as expressed by Frank at QuantU (VFG).

At QuantU, this preparation for the research project was integrated with the development of the project, as both modules ran concurrently. At QualU, the purpose of preparing students for the research project was more formalised, as the RM module at the Honours level was a prerequisite for the Honours research project module and this prerequisite knowledge was also assumed for the Master’s RM module. This strongly framed set of prerequisite modules echoes, to some extent, the research preparation approach, discussed in Chapter 4, of front-loading students with the knowledge and skills needed for later application in the research project, a subsequent module. Furthermore, both universities claimed the common purpose of presenting a simplified, accessible version of the research process at the Honours level, this being the first experience of IS research for students. At QuantU, the simplification was described in terms of reducing the required rigour of the research whereas at QualU the research process was presented as a linear, definitive series of steps. This is somewhat paradoxical as one might expect QuantU to present the research process as linear and QualU to reduce rigour.

By way of illustration, Frank emphasised that Honours students at QuantU were getting their “first taste of being a researcher” (Interview) and that issues of rigour are hidden so as “not to squeeze the joy out of the experience” (Frank, Interview). He aimed to enthuse Honours students with a “taste of what being a researcher is all about” rather than make them feel “responsible for the development of knowledge” (Interview). For QualU, Philip underlined the importance of covering the inter-related sequence of activities required to perform research. Philip claimed that the research process is presented "as if definitive" for Honours, echoing Frank’s claim to hide research complexities (Philip, Interview).

Both universities claimed an increase in complexity at the Master’s level, but with different emphases. At QuantU, Frank explained the differences between Honours and Master’s research:

Unlike H[onours]-level research, M[asters] and d[octoral] students need to have a much better appreciation for the [philosophical] underpinnings of the research toolkit; a much stronger understanding of the role of the theory in research; be capable of justifying methodological choices; and understand the limitations of various research designs and the trade-offs, e.g. internal versus external validity.
(VFG)

This claim of the need for a deepening of understanding of the philosophical underpinnings of the research is supplemented by an increase in technical complexity in terms of methodological choices as well as research design limitations. These increases in complexity are all framed within the positivist paradigmatic orientation to research.

By contrast at QualU, the primary purpose of the RM module at the Master’s level was "to unsettle students about questions relating to ontology, epistemology and ethics" (Philip, VFG) and to engage with the diversity of approaches and methods. Philip claimed that there was a deliberate intent to “unsettle” the illusory certainty of students at the Master’s level, but that the necessary thinking tools were provided to manage the uncertainty, including the Toulmin model and Rogerian approaches to argument (Philip, Interview). This increase in philosophical complexity and diversity contrasts with the more focused philosophical and technical increase in complexity claimed by Frank.

In conclusion, the predominant paradigmatic orientation of the research preparation curriculum has significant relationships with the purposes of the RM modules. The quantitative approach dominates at QuantU, with limited requirements of rigour at the Honours level, which increases at the Master's level—technical rigour is the primary feature of variation. QualU formalises research preparation in a system of prerequisite modules, separating the RM modules from the research project. Increased complexity at Master's level takes the predominant form of philosophical contestation and debate rather than increases in technical complexity.

The next section discusses the content and organisation of the RM modules, identifying links and relationships with the themes already observed. Paradigmatic orientation is expected to influence content substantially.

8.4.1.3 Content and organisation. Both universities claimed and delivered a fairly generic, traditional introduction to research in terms of content at the Honours level. For example, at QualU, the following list of content topics was included in the MO:

- What is research?
- What is IS research?
- Doing a literature review
- Categories of research
- Research methodologies
- Data generation
- Data analysis
- Writing a research essay or mini-dissertation.

The only non-generic topic in this list is defining and distinguishing IS research from research in other disciplines. Lyn claimed that students need "to know what IS research is and what it is NOT" (VFG). Students should "NOT learn bad habits or make false assumptions regarding IS Research that would have to be unlearned" (Lyn, VFG). Research learning is depicted as being either right or wrong, and the content covered needs to convey the "right" type of knowledge. QuantU was similarly generic, although there was a stronger flavour of the positivist paradigm in the content topics of hypothesis generation and the use of statistical software (QuantU, MO).

However, as might be expected, the predominant paradigmatic orientation of each university manifested more strongly in the Master's RM modules. For example, QuantU's RM Master's had a "strong focus on the scientific method and the hypothetico-deductive approach", including statistical testing of hypotheses (MO). Specific mention of how to find, review and reference literature was made, in particular the use of the SLR methodology as an extension of basic literature searching at the Honours level (VFG). At QualU, specific content mentioned in the Master's RM included the "revision of concepts from Honours" (MO) emphasising the prerequisite nature of Honours knowledge for the Master's RM module. Broad topics included quantitative and qualitative research, with a range of specifically qualitative strategies and methods, such as case study, action research, ethnography, and grounded theory. Topics mentioned during the VFG as critical include "in-depth coverage of research paradigms and philosophies, as well as underlying assumptions about knowledge, ontology and epistemology" (Philip), although these were offered in the two ancillary research modules rather than the RM module proper.

Both universities have designed into their Master's curriculum structure additional, ancillary modules as complements to the formal RM modules. QuantU offered a compulsory module that was tightly integrated with the RM module. The two modules were presented by the same lecturer and the MO presented the two modules as an integrated series of seminars, assessments, and readings. QualU offered two compulsory modules that were discrete, assessed separately, and lectured by academics other than the RM module lecturers. Conscious attempts to link the RM module with the ancillary modules were made in the assessment rubrics of QualU. For example, the research proposal rubric included the following evaluation criterion, worth 10% of the total:

Theoretical underpinning: The theory should be summarized and the choice of theory be explained. Theoretical underpinning as derived from [INF8B] or any other module but this must be an established theory (QualU, MO)

Both universities emphasised the importance of theory as a specific topic at the Master's level. This is of interest since an absence of coverage of theory, and IS theories in particular, was noted at the Honours level across South African universities (Chapter 6).

An illustration of this may be seen in the detailed claim for the importance of theory as a topic at the Master's and doctoral levels at QuantU provided by Frank:

Theory is very important to us, and I spend a good deal of time making sure M and D students understand what theory is; how theories, models, frameworks and taxonomies differ; popular theories used within IS research; and how to 'use' theory, i.e. the role of theory in both the hypothetico-deductive research process and the inductive research process. (VFG)

Both theory testing and generation are acknowledged in this claim. Theory testing, a hallmark of the quantitative tradition, was further elaborated:

I believe they need to learn how to test existing theory and find the holes (in the concepts, causal reasoning and internal consistency of existing theory) before they can develop new theory. (Frank, VFG)

General coverage of theory in both inductive and deductive research was the broad framework for in-depth discussion of theory use and application in the preferred method of developing knowledge.

Similarly, no mention of specific IS theories was made by the QualU Master's MO, but a number of qualitative research strategies such as grounded theory and action research were listed. The RM module operated in tandem with the two other research-oriented Master's modules. For example, one module included specific coverage of theories commonly used in IS research, including actor network theory, structuration theory, sociomateriality, and activity theory, foregrounded against common positivist theories such as TAM and UTAUT. Observation of a Master's seminar on structuration theory underlined the approach of having students cover a range of prerequisite material before tackling their research projects. Comprehensive, detailed coverage of the origins, core concepts, and uses of the theory in the social sciences was followed by discussion of the specific use of the theory in the lecturer's own PhD and general research work. This feature of lecturers using their own PhD study or research to provide content for seminar sessions was quite commonly observed. Observation of a Master's session at QuantU on the

limitations of research also provided evidence of extensive use of the lecturer's own research in providing the material for the topic. A journal article in the process of submission was used to illustrate limitations in quantitative research and the technical measures and tests that can be used to support claims of reliability and validity. Similarly at QualU, Philip, for a lecture session on quantitative research at the Master's level, chose to use a work-in-progress research paper on skewness in data to illustrate the process of quantitative research; the lecture included an overview of the construction of the instrument, the concerns with reliability and validity, and the findings, as well as the questions surrounding the identified skewness in the results. Personal research experience thus directly informs the choice of content, theoretically leveraging credibility and usefulness.

The aspect of drawing content from one's own research strengths points to the important dimension of lecturer identity in the enactment of the RM module. The lecturer's own paradigmatic orientation will thus directly and indirectly shape the content and relative emphasis given to specific topics.

8.4.1.4 Towards a position on paradigmatic orientation. Content and purpose are largely aligned with the paradigmatic orientation, especially at the Master's level. Ancillary modules at the Master's level are tightly coupled at QuantU, echoing the close linkages between the RM modules and the research project at all levels. By contrast, QualU has strongly coupled ancillary modules in terms of prerequisites, but modules are less strongly coupled in terms of the research project at the Master's level, in line with the assumption that research preparation is best done in upfront modules that each provide prerequisite knowledge for the research project. Furthermore, lecturer identity emerged as a significant influence on selection of content.

Research preparation in predominantly quantitative approaches showed strong alignment between ancillary research modules and the RM module as well as integration with the research project, and it emphasised technical rigour and theory testing over philosophical considerations and paradigm debates. By contrast, predominantly qualitative research preparation was associated with structurally strong alignment through prerequisites, separation of RM modules from the research project, and emphasis on philosophical underpinning and paradigm debates over technical rigour.

The next section discusses the espoused and enacted pedagogy of the RM modules in relation to the prescribed material. Key themes discussed earlier such as linkage of the RM module to the research project re-surface, as expected.

8.4.2 Pedagogy and materials

The following themes will be discussed and illustrated in this section:

- The degree of linkage between RM modules and the research project, as well as the implication for how the RM curriculum is conceptualised
- Lecturer identity and credibility as teachers of RM
- Lecturer conceptions of research students
- Conceptions and use of textbooks for delivery of the research curriculum.

8.4.2.1 Pedagogical orientation. Two key related themes with pedagogical implications have been discussed in the previous section. Firstly, QuantU integrated the research project with the RM modules whereas QualU delinked the RM modules from the research project. Secondly, research preparation at QuantU is constructed as presenting material ‘just-in-time’ to meet the needs of the research project. QualU conceived research preparation as comprehensive, upfront coverage of a range of different approaches, methodologies, and methods independent of the research project. Material was presented ‘just-in-case’ it was needed in the subsequent research project.

Thus, Frank at QuantU argued the case for students learning research while doing research:

I think another challenge not explicitly mentioned yet is that students will learn most about research while "doing" it, i.e. I believe most learn more about research while they are engaging in their own projects than from the upfront coursework. This may have interesting implications for how RM is taught, when topics are introduced and by whom. (Frank, VFG)

This claim does not reject the value of upfront coursework, but asserts that the majority of research learning occurs during the actual project. The preparatory phase thus needs to be considered in conjunction with actually "doing research".

QuantU launched the actual student research projects at the outset of the Honours RM module – supervisors were allocated and topics provisionally selected. RM material was then presented on a just-in-time basis as needed in the research project—RM was thus “married” to the project (Frank, Interview). The research project effectively drove the RM module with the research proposal being developed and refined alongside the delivery of the RM module (Observation). The Master’s research modules were similarly constructed and presented. Frank was aware of the inherent disadvantages of this approach at all levels since discussion of theories, methodologies, and methods not directly relevant to a particular student’s project will not be fully engaged with by that student, resulting in varied degrees of engagement across a class (Interview). By contrast, QualU had firm advocates for research preparation in formal, preparatory modules that were not linked to the research project. Lyn argued for a "strong preparatory phase" at all levels (Honours, Master’s, and doctoral) (Interview). RM modules at QualU were seen as "pre-requisite" implying sufficient mastery before proceeding to the research project module. This approach included wide, relatively superficial coverage at the Honours level with greater depth at the Master’s level in the form of an RM module, a related theory module, and a related philosophy module (Lyn, VFG). In addition, key concepts of research are learned best by repetition at the different levels (Lyn, Interview), echoing the notion of a spiral curriculum where the same construct is revisited in greater detail and depth in subsequent years.

To provide some form of research context in the RM modules at QualU, Lyn argued for the value of students having personal research ideas which they could use to test against the RM theory being presented (Lyn, Interview). Thus, as she noted, the student could experiment with their topic by framing it from a critical perspective or as a case study, colourfully describing this as “marinating” the research topic in the rich stew of possible research paradigms, methodologies, and methods (Lyn, Interview). By contrast, Philip pragmatically argued for an inclusive approach, urging academics to work against the rules, where appropriate, and developing the research proposal in parallel with the RM module (Interview). He went further, however, to critique the practice of presenting RM preparation from a purely theoretical perspective: "Feeding the students

with content, content, and content of research, yet when they are out in the field, they have to ‘do’ and learn the content again" (VFG). The metaphor here suggests the notion of force feeding students with content and the threefold repetition of ‘content’ captures the strength of the critique, hinting at the perceived irrelevance of all this content to the student’s research project. Philip argued for “forcing students to at least engage with the problems that they seek to resolve and apply research [to]” (VFG) in the RM module; this plea for explicit links to students’ actual research problems is couched in curiously power-laden terms.

There is some sense in which this notion of purposefully moulding the students’ development occurs more at QualU. The Honours activity schedule in the QualU MO charted the work for the entire module and indicates the nature of the teaching approach. Each session included a range of activities, including materials to prepare and learn for the weekly class test and assessment at the start of a session (assessment of both the previous week’s work and that prepared for the current session), followed by class activity (lecture, discussion or online exploration). For example:

Download: PDF Slides
Download: PDF Notes Format Prescribed Textbook Chapters 4 & 6 Pages 43-53; 71-92
Assessment during Class
All assignments, tests and activities count towards your final mark.
Structure of class test:
Section A: Previous session Section B: Preparation current session
Class Activity during class time.
Lecture – highlights of Ch 4 & 6
Academic social network: Mendeley Academic Network
Explore Research Tools: Digital Research Tools (DiRT)

(QualU Module outline)

According to Lyn (Interview), this weekly “regime” had evolved over successive years and various lecturing combinations. This highly structured approach was unique to the Honours year with its typically large groups (66 students in 2012), and the Master’s classes were described as "more grown up", "less structured", and more seminar-based. The intent of the "regime" was to equip

students with a wide range of knowledge and skills that were illustrated in a generic research theme as well as the student project topics (Lyn, Interview). In the Master's seminar at QualU, Philip also made use of one unusual teaching method that echoes this regime of forcing students to prepare for contact sessions. A response paper on the material to be discussed at the next session was set at the current seminar. These response papers were submitted prior to the session and were assessed, the marks counting towards the module mark (QualU, MO, Observation).

8.4.2.2 Lecturer identity and credibility. Another key theme that emerged in the analysis is the notion of lecturer identity and teaching credibility. Thus, QuantU claimed the pedagogical practice of aligning what was taught to the practices of the RM lecturer as the only way to achieve credibility whereas QualU argued, with some divergent views, that credibility was earned by having a broad knowledge and experience of a wide range of possible approaches, methodologies, and methods.

At QuantU, Frank (supported by Gary) argued that an RM lecturer must “preach what he practices” (Interview) and that he could not lecture on a research strategy, for example, the case study approach, that he did not believe in (Frank, Interview). Drawing on the research strengths of other lecturers or drafting in experts was the strategy used to deal with these “alternative” approaches. Credibility, according to Frank, is vested in the experience of actual research in the field rather than book knowledge and this experience provides the invaluable “spare change” that the lecturer can use to illustrate actual experiences with a methodology or technique (Interview). By contrast to Frank, Lyn at QualU claimed that the RM lecturer has a responsibility to be even-handed in presenting the range of possible approaches, methodologies, and methods—this is in line with the philosophy espoused at QualU of thorough preparation before starting the research proper. In this case, the RM lecturer has to be almost “heroic” (Lyn, Interview) in attempting to sufficiently master the diversity of approaches and perspectives. Lyn's strategy was to choose a topic to teach each year that she needed to learn about, thus growing her own research knowledge base (Interview).

Philip again occupies what he called the AND position (Philip, Interview). While he advocated specialisation in a particular approach or methodology at doctoral level, he felt that all academics should be sufficiently competent in the full range of research approaches to be able to

teach all approaches at the Honours level and to examine both qualitative and quantitative work at the Master's level (Philip, Interview), echoing Lyn's stance. He decried the exclusive OR perspectives that some supervisors at QualU take, arguing that at the very least it is imperative to "know the enemy" (Philip, Interview), referring to adherents of opposing paradigms, well enough to take issue with them on aspects of research.

8.4.2.3 Lecturer conceptions of students. Another theme that emerged was lecturers' conceptions of students and the pedagogical implications of these conceptions. QuantU lecturers generally conceived of students as apprentices to the master craftsmen, learning the craft of research whereas QualU lecturers presented a range of conceptions, from students as neophyte researchers to emerging citizens. The issue of perceived student agency thus took on a range of understandings, best revealed in the metaphors used in discussing effective approaches to teaching RM modules.

For example, at QualU, Lyn, in discussing whether the RM modules prepared students adequately for the research project, described the students as follows:

I do not think we close the circle sufficiently often, whether at Honours or Master's level, of getting feedback from the final research paper to the research methodologies lecturer. So you sort of toss them out of the nest, the little fledglings fly off and whether they die on the other side of the stream, we don't know. (Lyn, Interview)

The metaphor of "fledglings" aligns well with the emphasis on thorough preparation in the prerequisite RM modules for the students before they are released from the "nest". The implication of the relative weakness of the "little fledglings" that have been taught to fly in theory introduces the issue of student agency in this approach. The identified gap in the process of checking whether they ever succeed in the full flight of the research and whether the preparation was adequate is also strongly self-critical.

By contrast, Frank at QuantU used overtly religious metaphors in arguing that he has to "preach what he practices" and that he firmly "believes" in the hypothetico-deductive approach as the way to produce new knowledge (Interview). The adherence to a single paradigm aligns with

the notion of faith in the scientific method. Frank's use of religious metaphors created a metaphorical thread that was picked up by other VFG participants. For example, Philip at QualU extended the religious metaphor even further when he scathingly attacked this "puritanical" belief in the scientific method (Interview): "We are still very much like the ancient priests acting out a tedious ritual to predict the weather... and the means have become more important than the ends." (VFG). Philip argued that his role as RM lecturer took the form of an ongoing, lone struggle to develop a "good citizen" rather than a good researcher, trying to introduce the social responsibility perspective on research (Interview). The issue of relevance in research preparation will be discussed in more detail in the section on stakeholders (8.4.4). Philip's overall role as a challenger of the predominant research ethos at QualU continually surfaces as a significant theme.

Links and relationships with the themes already observed will be identified again in the next section, which discusses the uses of the prescribed textbooks in the RM modules.

8.4.2.4 Textbook usage. The role of the textbook in the delivery of the RM modules varied across levels as well as across the individual lecturers. Textbooks were used as foundation texts, with varying degrees of centrality, at the Honours level but generally used as background reading at the Master's level.

At QuantU, the same core textbook (Bhattacharjee, 2012) was prescribed at both levels. Gary argued for the textbook as core preparation source for seminars (Interview). Moderated textbook use was claimed by Frank who felt that the textbook was a useful first reading or introduction but needed to be supplemented by prescribed journal articles for greater depth, especially at the Master's level (VFG). In the past, Frank had not prescribed a book for Master's, but in 2011 prescribed the same textbook as was used in Honours for continuity (Interview). Frank clarified his view on the role of the textbook thus:

But we do supplement, you know, with readings and I think also the best way to sort of do it is not to read methods textbooks but actually to read completed work. So I think rather than read the reliability and validity chapter of a research methods textbook, read three papers that are exemplary in their approach to testing it. (Interview)

He claimed a “translation gap” between the ideal, “right” method described in textbooks and the messiness of real application, stating that the textbook can “help them populate their research methods chapter” rather than inform the actual doing of research (Interview). Observed seminars confirmed the key role of journal articles in introducing and discussing concepts. It is notable that Frank is a firm adherent of the scientific method and its deductive emphasis. He also demonstrated (Observation) the use of exemplary research articles as the primary teaching strategy, particularly at the Master’s level. The prescribed reading list comprised 53 references, mainly journal articles from a range of business disciplines with a predominant thread of technical, positivist methodological, and theoretical topics. Research articles were also used for specific purposes, for example, Frank focused only on the theory section of the article in one session, followed by a return to the same paper to consider methodological issues at a later stage.

A variety of attitudes to and uses of prescribed textbooks was found at QualU. An IS-oriented book was the core text at the Honours level, with a qualitative text, focused on business and management, for the Master’s. Lyn constructed the Honours module around the prescribed textbook (Oates, 2005) as the source of all the “how to” material (Interview); the weekly “regime” of pre-reading from the textbook in preparation for a class test was discussed above. Exemplifying one extreme at QualU, the textbook was claimed as "essential" as there was too much to "cover" in the RM module (Lyn, Interview). Lyn’s choice of verb has a flavour of the applied science approach to research preparation where a range of content needs to be mastered before application. In addition, the textbook chapters are used directly as materials for the regular tests and as seminar material, as discussed above (Observation). Once again, the emphasis on the textbook suggests some alignment with a quantitative, deductive approach at QualU.

A different approach is suggested by Philip at the same institution when he cautions against the possibility that the "way of the textbook" could become the definitive approach, suggesting that research preparation is more than a body of material to be covered. His view further suggests that developing research thinking and a researcher's mindset are better achieved by using a range of varied materials in addition to a textbook. Furthermore, the stronger claim that textbooks may be "biased" (Philip, Interview) towards particular methods and methodologies introduces the issue of paradigmatic or disciplinary preferences that may come into play when prescribing a textbook.

Philip proudly claimed that his copy of Myers was still in its cellophane shrink-wrapping as “there is not that one textbook that you can grab and teach” (Interview). The lecture schedule and observed seminars confirmed non-use of the prescribed textbook. Philip preferred to source a wide range of experts and sources on a topic (including journals, textbooks, and web resources) and then consolidate and repackage the concepts as a story (Interview, Observation). His claimed strategy was to try to engage students in a conversation about the topic under discussion, especially in the more philosophical ancillary modules. He did this by using devices such as debates, for example arguing that ethical considerations unduly constrain research to “unsettle” students (Interview). Paradoxically, he claimed a directly contrasting role in the RM module, where the certainty and predictability of methods and techniques dominate (Interview); in previous years, the sole RM seminar on quantitative research had been handled as content, with slides being used to structure the seminar, but in 2012 the slides were clearly and emphatically not made available to students at all (Interview; Observation). Philip rather emphasised the need for students to construct their own summaries, in contrast to the normal departmental practice of providing slides on the module web site, primarily as pre-reading for lectures.

8.4.2.5 Towards a position on pedagogical orientation. The pedagogical orientation of the lecturers responsible for RM modules at the two institutions is largely aligned with the aspects discussed earlier in the chapter, namely the rationale, content, and paradigmatic orientation of the modules. Thus, Lyn advocated and demonstrated the influential role of the textbook and tests in thoroughly preparing the fledgling researchers before the research project commenced. Here, the lecturer was positioned as needing to be essentially a research methodologist with some focused experience and expertise in at least one of the paradigms and methodologies. By contrast, Frank used exemplary journal articles to illustrate and induct students into the technical requirements of the predominant paradigm at QualU. Gary echoed Frank’s position on most dimensions. Philip, previously a lecturer at QuantU, occupied the interesting position of maverick, sometimes working against the dominant culture and practice followed by Lyn and her colleagues at QualU. He argued for AND inclusivity on most matters, providing an alternative approach to the dominant perspectives at both institutions. For him, credibility depended on the extent of societal engagement and relevance of the research, an aspect on which the other academics were strangely silent.

The pedagogical orientation of the lecturers is thus substantially indicated by the role of the textbook claimed by the lecturers in the RM module. Claims regarding textbook usage varied from the textbook being seen as central to the module to its being regarded as one of many resources and even to deliberate non-use by Philip. At the Honours level, a core textbook was the common practice whereas the textbook generally played only a supportive role for Master's. QuantU emphasised prescribed journal readings at the Master's level whereas QualU evidenced a range of claims on textbook use, ranging from cautions about over-use to deliberate non-use.

The curriculum choice which influences degree of linkage between the RM modules and the research project has a strong influence on pedagogy. Strong linkage results in just-in-time presentation of RM content, as the research project drives pedagogical sequencing whereas weak or no linkage results in just-in-case delivery. Lecturer identity also has an obvious influence on pedagogy, with QuantU advocating the need to be faithful to one's own research beliefs, thus influencing the content that can be covered and ensuring the continuation of the particular paradigm. QualU RM lecturers agreed on the need to attempt to be fair to the wide range of paradigms and approaches, with specialisation only at doctoral level. A predominant qualitative orientation acknowledges the value and place of quantitative approaches and claims the need to provide even-handed coverage of alternative paradigms. The historically hegemonic, dominant status of positivist research in IS is reflected in the quantitative exclusivity whereas the emergent, tentative status of qualitative approaches is seen in the accommodating and inclusive attitude to alternative approaches.

Conceptions of student agency are relatively weak in both the quantitative and qualitative traditions, but in different ways. The conception of students as apprentices, following the prescribed formulae of research demonstrated by the masters, is the hallmark of the quantitative tradition. By contrast, a dominant qualitative tradition places the student as neophyte researcher, requiring extensive theoretical grooming and preparation, as well as controlled exposure to simulations of research in the RM module before being certified as ready for 'real' research. These varying conceptions of student agency have implications for the choice of materials. A predominant quantitative paradigmatic orientation favours exemplary journal articles as the pipeline to the 'truth' of research practice, with research textbooks regarded as useful only for writing up dissertations. A qualitative orientation celebrates textbook knowledge, especially at the

Honours level, and students need to demonstrate their mastery of this prerequisite knowledge before starting the actual research project.

A final noteworthy difference between the two cases is the degree of internal consensus between RM academics on pedagogical practices. QuantU lecturers show relative unanimity on pedagogy whereas QualU demonstrate greater divergence, with Philip arguing for pedagogy that allows linkage to the research project as well as providing thorough theoretical preparation.

8.4.3 Assessment

The following themes will be discussed and illustrated in this section:

- The influence of dominant paradigmatic orientation on assessment
- The degree of linkage between RM modules and the research project as well as the implication of this for assessment of research preparation.
- Tests and examinations as assessment strategies at PG levels.

Assessment details of a module generally signal the aspects that lecturers regard as important. RM modules are no different. Both universities include the research proposal as a significant deliverable for the RM modules, but the form of the assessment varies considerably. QuantU built up and assessed the research proposal as the RM module unfolded, in line with the structure of strong linkage with students' actual research projects. QualU assessed the research proposals as summative deliverables, in line with the pedagogic approach of front-loading students with preparatory research knowledge and skills before starting the research project. Table 8.2 outlines the varying emphases on assessment aspects at both Honours and Master's levels for each case; the percentage in brackets indicates the proportional weightings.

Table 8.2		
<i>Assessment Extracts from Module Outlines</i>		
	<u>Honours</u>	<u>Master's</u>
QuantU	Assignments <ul style="list-style-type: none"> • Finding literature (33%) 	Assignments <ul style="list-style-type: none"> • Submission of protocols for systematic review
Frank	<ul style="list-style-type: none"> • Research methods (33%) 	<ul style="list-style-type: none"> • Submission of phase 1 of the systematic review
Gary	<ul style="list-style-type: none"> • Research Proposal (34%) 	<ul style="list-style-type: none"> • Research Proposal Part A (Intro., Background, Model and Hypotheses) • Research Methods - Take Home • Research Proposal Part B (Methods)

QualU	Class mark (50%)	Class mark (50%)
Lyn	• Literature review (40%)	• Assignments - general (40%)
Philip	• Tests (30%)	• Assignments Research proposal (50%)
	• Assignments (30%)	• Class participation (10%)
	Examination (50%)	Examination (50%)
	• Research proposal (Take home)	• Research proposal (Take home)

At QuantU, strong and repeated emphasis on the literature review at both levels was the primary focus. Frank emphasised the need for students to ground their own studies in the literature (Interview), confirmed by the relatively high weighting allocated to literature review assignments. The assessment mode was by way of individual assignments, with no tests or examination: “We tend to shy away from closed book tests” (Interview). In direct contrast to QuantU, QualU included class tests and an end-of-semester examination where the final research proposal was constructed under quasi-examination conditions. This form of examination was referred to as an open book, take-home examination as the students knew the exact format of the examination beforehand and were required to prepare their own research proposal within the format provided for the examination.

At QualU, class tests were claimed as being useful for assessing the 'what' content (Lyn, VFG). Lyn made a pragmatic argument for the use of tests to ensure that the Honours students acquired a certain level of research knowledge:

Standing up there and lecturing to them does not work, therefore the tests. And I have never done it before. I said, I have inherited this new regime and I think it works. They are reading the text book. We have got a really good text.

(Lyn, Interview)

The 15-minute class tests were closed book and were held at the start of each lecture session, including both questions reviewing the previous session and questions based on the required pre-reading for the specific session. Multiple choice and short answer questions were the norm (Observation). The use of individual assignments was broadly supported to explore “study themes” in the Honours module at QualU (Lyn, Interview), but this refers to generic IS research themes introduced by the lecturer. Explicit links to student research projects in the “study theme”

assignments were minimal. Lyn outlined the way in which more explicit links to student research were introduced at the Master's level:

The research proposal is built incrementally from successive assignments—most assignments require the issue under discussion to be related to the student's proposed research (discuss how you would/ could do a critical case study for a version of your proposed research, etc). (VFG)

The notion of incremental building suggests links with specific research proposal sections as assignments. However, the subsequent illustration that most assignments would make hypothetical links to the proposed research sheds a different light on this. These links are indirect; thus, for example, an assignment would ask the student to frame their study as if it were a critical case study. The benefit of the hypothetical assignment in this example is some student engagement with the concept of a critical case study and the temporary reformulation of and reflection on the proposed research, but this is markedly different to the research proposal as directly unfolding from the assignments.

The mixture of tests and assignments in the Honours RM module at QualU was not reflected in the Master's RM module. Philip used only assignments, not tests in the Master's module; a variation of assignment called a response paper was used. The term suggests reflection on material already covered, but was actually a response to a question posed by the lecturer. Each session, an assignment was discussed and set for students to submit prior to the next seminar. These response papers often took the form of preparation for the material to be covered in the next session, which echoes the Honours approach of class tests on preparatory material.

In conclusion, claims are made for forms of assessment that range from formal assessments, such as class tests and examinations (take-home and traditional), to individual assignments (on generic themes or applied in varying degrees to the proposed research project). The research proposal is, as expected, the key deliverable in terms of assessment across all modules. However, the type and timing of assessment of the research proposal differs significantly across the two cases. QuantU developed and assessed the research proposal as the RM module unfolded whereas QualU positioned the research proposal as a summative assessment (open book

examination). In addition, QualU made use of assessments to drive student preparation for sessions whereas QuantU did not. An integrated approach that links RM modules strongly with the research project will inevitably be reflected in the assessment strategies. Assignments on aspects of the actual research project are reflected in the gradual development of the research proposal. By contrast, the curriculum decision to separate the RM module from the research project results in more emphasis on tests and assignments that are generic preparation for the future research project.

Furthermore, the dominant paradigmatic orientation will influence the content emphasis in assignments and tests. A quantitative orientation is aligned with strong emphasis on literature, in particular the SLR, with its positivist origins, allowing for replication of the literature search by subsequent researchers. Quantitative studies often test existing theories, requiring strong grounding in the literature. Individual assignment was the dominant mode of assessment. QuantU demonstrated all of these characteristics, strongly aligned with its dominant paradigm. By contrast, QualU exhibited a range of assessment strategies, including individual assignments, but notably the use of class tests and a summative examination. The conception that students need to ‘know’ certain research concepts by reproducing these concepts in regular tests is aligned to the curriculum choice to prepare students in generic terms, separate from the future research project. In addition, the unusual strategy of assessing the research proposal by way of a formal take-home examination underlines the notion that students need to demonstrate knowledge in a traditional format as a prerequisite to starting the research project. The assumption seems to be that mastery of theoretical knowledge must be demonstrated before actually doing the research.

Although there is some alignment between paradigmatic orientation and assessment strategies, other aspects are unexpected. Tests and examinations at QualU would have seemed more appropriate at QuantU. Neat categorisation is largely illusory.

8.4.4 Research stakeholders

This section discusses a range of stakeholders who are presented as being influential, that is, the audience or the recipient of the research. These stakeholders include supervisors, the IT industry, the IS research community, the IS discipline, and academia. The following themes will be discussed and illustrated in this section:

- The influence of the IS research community on the nature of the RM modules

- The influence of the IT industry on the nature of the RM modules.

A generic stakeholder in relation to research is the IT industry and the world of IS practice. At QuantU, Frank expressed his frustration at the fact that “practice does not appreciate research” (Interview). Undergraduate programmes did not develop theory with an evidence base, but presented theory as mere “prescription”. Furthermore, especially at the Master’s level, when students returned to further studies after working in the industry, the nature of their work experience was in conflict with the academic approach: students’ predominant work experience of a consulting research mindset had to be unlearned (Frank, Interview). Frank summed up the nature of IS practice:

It is so applied as a field that it has got no connection almost to the academic body of knowledge. (Frank, Interview)

Gary echoed this disconnect between consulting work in IS and academic research when he threatened to go “on a rave about this mode of being in the world” in reference to Master’s students who have been trained as consultants (Interview). Frank further bemoaned the lack of critical engagement by IS practitioners, using the example of the annual Gartner report on IS trends and best practices as an example:

And then not sort of engaging critically in the field. They do not sort of, when Gartner comes in and says well this is best practice, they are not critical of how do you know that is best practice? And best practice for who and under what conditions? They just sort of like suck it up. (Interview)

It is also significant that Frank mentioned external examiners and IS journals first as the influences on his academic views; the IS industry was not mentioned at all. Frank took the position that practice should be evidence-based, but he was quite clear that the IS research community would best provide that evidence.

The challenges of striking a balance between academic rigour and industry relevance at QualU were touched on earlier and the claim was made that IS research can be likened to "ancient priests" performing "tedious rituals" that echo previous findings (Philip, VFG). Lyn states:

I am uncomfortably aware that practitioners require completely different research outcomes than publishable IS research articles and are mystified by the research processes and outcomes that we hold so dear. Although our academic research is intended to be relevant and rigorous I have personally read too many findings that are really only restating the obvious. (Lyn, Interview)

The extent of the gap between published research and practice is highlighted in the claim that practitioners are "mystified" by academic research processes and outcomes that are "held so dear". This provides a different, though supportive, perspective on Frank's depiction of the nature of IS practice.

Practitioner research at the Honours level was suggested by Lyn as a possible way of improving the relevance of the RM module, but she noted that some of the rigour expected in academic research would need to be introduced and diffused (VFG). She defined practitioner research as a

compilation and review of information relating to practice which is largely available as reports on the Internet (web pages, blogs and newspaper reports) and also the large number of research reports done for various international agencies. However, some of these reports, for example those funded by the World Bank, lack rigour in terms of methodology, definitions, assumptions and critique of sources. (VFG)

The nature of the UG and PG degree structures in IS was seen by Lyn as directly reflecting the tension between industry relevance and academic research emphases. Thus, UG modules are focused on primarily technical aspects of the discipline, including systems design, modelling, development and implementation. In her view, at the PG level, students are required by government policy to do RM and a research project, both of which typically involve traditional IS academic research rather than an extension of the applied research foundations built up in the UG programme (Lyn, VFG). Philip, however, held that research at the Honours level should rather be aligned with the applied, business/management focus of UG programmes similarly to other disciplines such as Physics (VFG). The disconnect between UG and PG degree structures, specifically around research preparation, is identified as an anomaly (Philip, VFG).

Philip further felt that universities that adopt a single approach, such as the scientific method, claim an unwarranted, "puritanical" superiority in this approach as the way to all truth (Interview). He made the assertion, littered with religious metaphors, that this approach to teaching IS research is counter-productive in terms of preparing students for the workplace:

I have a particular issue with teaching IS research in that it is a departure from how managers actually work in practice so the relevance of the scientific method in the 'puritanical' way it is sometimes preached can get in the way of students being effective managers. (Philip, Interview)

Research topics were too strongly influenced by international journal agendas rather than uniquely local issues according to Philip (Interview). He saw relevance to the local South African context and the IT industry as a goal that is not being realised and suggested ways to improve research relevance. Improved and increased links with stakeholders external to the university were encouraged as a way to improve the relevance key performance indicator (Philip, VFG). Lyn suggested the design science approach to research as a possible way of improving relevance, but the dangers of further blurring the identity of IS as a discipline with software engineering and CS were raised (VFG).

Philip critiqued the low concern for relevance in research strongly and directly:

The only thing that is in my mind. I am just pretty disappointed with how little we focus on relevant IS research. (Interview)

He described the experience of participating in the VFG:

It felt like here is a tribe and the tribes are having a discussion and the tribe did not see any correlation to what they do and how the world behaves. (Interview)

He went on to clarify his position as not wanting "to sell more electronic stuff to poor people", but rather to design "inventive" IT artefacts that can "change the world", especially "those parts of our societies and communities that could benefit from this a lot" (Interview). Gary at QuantU indirectly supported these claims when he averred that the predominant measure of quality in premium IS

journals is “craftsmanship” (Interview). In other words, attention to the details of how the research is conducted is somehow regarded as more important than the research focus.

It is significant that no direct or indirect mention was made of any stakeholders in the Honours MO at QuantU. By contrast, the Master’s MO specifically mentioned the “field of IS” and the “IS research community” as contextual influences. The discipline of IS, from the perspective of the broad field as well as the more specific IS research community, was seen as a primary influence. One of the learning outcomes in the Master’s MO emphasised the importance of the IS research community by referring to the goal of exploring “the fundamental philosophical issues faced by IS researchers (e.g. what is truth, what is knowledge)... [and] examin[ing] how differing schools of thought have shaped the prevailing paradigms within the IS research community” (QuantU Master’s MO).

By contrast to QuantU, the Honours RM MO at QualU listed one learning outcome as indicating the probable contribution of the research to IS or ICT. The learning outcome was to “indicate the probable contribution of the research to Information Systems or ICT” (QualU, Hons MO). IS practice was mentioned, but the broader field of ICT was also significantly included. Both were acknowledged as possible recipients of the research. At the Master’s level at QualU, one of the learning outcomes read:

An understanding of research issues and skills in qualitative research methods that can be used in master’s and doctoral thesis work and in system development projects (QualU Master’s MO).

The description is largely contextualised within academia, but the curious addition of “systems development projects” at the end of the MO entry introduces the IS practitioner community, specifically the focused arena of system development, as a stakeholder.

In conclusion, a number of gaps were identified and acknowledged by the academics, including that between the UG curriculum focus and PG research, and academia and the IT industry. Diagnoses and prescriptions for improvement varied considerably. Frank claimed that the problem lay with IS practice, where evidence-based research was not recognised. He argued

for IS practice, as exemplified in UG preparation, to develop a research base. Philip claimed that the problem lay with the IS academic community, which needed to align the research focus with the broader development agenda to improve social conditions, especially in under-developed communities. Lyn supported Philip's view in her willingness to explore practitioner research, where academic approaches are imported into IS practice research.

The analysis indicates that a dominant quantitative paradigmatic orientation is associated with acknowledgment of the influence of the largely IS research community; IS practice is regarded as lacking the necessary evidence base more commonly associated with strong quantitative research. By contrast, the dominant qualitative paradigm is associated more strongly with the needs of IS practice rather than valorisation of the IS research community. The readiness of IS academics at QualU to embrace approaches such as practitioner research underlines the importance to these academics of relevance to practice rather than adherence to the standards of rigour espoused in top quality IS journals. From the discussion, it appears that Philip at QualU is one of the lone voices for a variation of the critical paradigm, advocating IT development and a corresponding research focus on the development and usage of IT in support of disadvantaged sectors of society. It also appears that, the curriculum choice to have strong linkages between the RM modules and the research project has the implication of strong supervisor involvement and influence on research preparation at QuantU. The choice to separate RM modules from the research project has the concomitant implication of limited to no supervisor involvement and influence on RM modules at QualU.

The final section in the chapter considers particular aspects of research preparation and the RM curriculum that were not raised by means of the various data generation strategies.

8.4.5 Silences

This section deals with some aspects of research preparation in IS that were absent or where discussion was conspicuously brief in the VFG discussion and interviews. The assumption is that the silences may signal something about research preparation rather than being simple omissions. It is widely accepted in qualitative research that an absence of data is data. As Poland and Pederson (1998) claim in the context of personal interviews "what is not said may be as revealing as what is said" (p 293). Omission is thus not neutral but may provide insight into the researched

phenomenon. This has also been identified in analysing focus groups (Smithson, 2002) and documents (Huckin, 2004). In the co-construction of meaning in qualitative research, one form of silence in the data may be identified as researcher expectations of discussion on a particular topic that are not realised in actual data generation (Rapley, 2001).

The following silences were noted:

- Ethics
- DSR, critical paradigm, and mixed methods

Only two brief comments were made on the teaching of ethics during the VFG, indicating a relative lack of controversy or particular interest. Firstly, a consideration of ethics in RM was referred to as an “irritating necessity”, and it was indicated that the approach taken was to give only sufficient attention for compliance with institutional requirements; secondly, it was maintained that institutional processes were sufficient to ensure ethical adherence and thus compliance was not problematic (Frank, Interview). The notion of ethics was generally treated as an independent process that needed to be completed by means of submission of the research protocol to university ethics committees rather than a matter of considering the ethical aspects of research choices throughout the research process. It is significant that Lyn notes differences in understanding about plagiarism as a key issue in the RM module, but the ethical aspects of this issue were not taken up by other participants (VFG). The general sense of the low importance of ethics in research is confirmed by Philip’s handling of ethics as a topic for debate (Interview). As an illustration of his teaching practice, he reported on how he tried to foster a debate around whether the strong institutional concern with ethics is actually a constraint on research. His main emphasis in this report was confined to the difficulty in engaging with the students and to get them to think innovatively; he despaired that they were so “puritanical” and “in the box” (Philip, Interview).

Another significant omission includes the fact that the globally topical issue of design science as the ‘new paradigm’ in IS research was not taken up during the VFG discussion or interviews. Since Hevner et al.’s (2004) seminal article on DSR, several journal articles and special issues have discussed the possibilities of this new paradigm, yet this seems not to have sparked

much interest in South Africa. Similarly, mixed methods approaches and the critical paradigm were also not discussed directly

8.5 Overview of Emerging Themes

Using the four key themes from Chapter 7, Table 8.3 identifies the differences that have emerged from the discussion of the enacted curriculum at the two universities.

Thus, QuantU adopted a strongly quantitative approach to research. The RM modules were dominated by research preparation in the quantitative methodology and methods, although qualitative methodologies and methods were presented as counterpoints to the quantitative approach. Students' actual research projects were developed and strongly linked to the unfolding RM modules, with strong supervisor involvement. By contrast, QualU represented a strongly qualitative approach to research. Students' actual research projects were weakly linked to the RM modules, in which the student's potential or imagined research topics were theoretically explored in relation to the RM material being presented. Research supervisors played almost no role in the RM modules, receiving the students and their fully developed research proposals at the end of the RM modules.

Table 8.3

Differences Between QualU and QuantU in Relation to Key Themes

<u>Theme</u>	<u>QuantU</u>	<u>QualU</u>
Paradigmatic orientation	<ul style="list-style-type: none"> • General coverage, though quantitative dominates at Honours • Quantitative focus for the Master's • Concept of research paradigms not emphasised/discussed • Focus on literature review, especially systematic literature review 	<ul style="list-style-type: none"> • General coverage, though qualitative dominating at Honours • Qualitative focus, especially at Master's level, with some elements of the critical approach • Concept of research paradigms being emphasised, but some contestation between academics about value of this emphasis
Linkage with research project	<ul style="list-style-type: none"> • Research project unfolding alongside RM module • Supervisors integrally involved with RM module 	<ul style="list-style-type: none"> • Strong preparation for research project in RM • Handover of research proposals to supervisors at module end—no involvement with RM
Pedagogical orientation	<ul style="list-style-type: none"> • Assignments • Students as apprentices, learning the craft of research from the master craftsman • Textbook as background reading for the Master's, used in seminars • Journal articles as primary material used in the Master's 	<ul style="list-style-type: none"> • Tests, examinations, and assignments • Students as fledgling researchers, needing to be thoroughly prepared before venturing into actual research • Textbook as background reading for the Master's, not used in seminars • Journal articles plus all other expert sources as primary material used in the Master's
Key research-stakeholders	<ul style="list-style-type: none"> • IS research community as significant influence • IS practice not recognising evidence-based research 	<ul style="list-style-type: none"> • Field of ICT/ systems development as audience • Practitioner research as possible future focus • Gap between UG (applied) and PG research • Gap between published research and needs of practice • Critical of low importance of research to society, especially under-developed communities

A further contrast is noted in the orientation towards societal stakeholders. QuantU foregrounded the IS research community as a strong influence on research, with IS practitioners seen as lacking appreciation of evidence-based research in their practice. QualU recognised rather the broader ICT industry, which includes IS, as the recipient of research outputs while, like

QuantU, acknowledging the gap between published research and the needs of practice. A possibility for bridging this gap was seen to be located in the offering of a form of practitioner research preparation at the Honours level, where the department would be moving closer to the needs of industry. By contrast, QualU held the position that it is practice that needs to move closer towards recognising the benefits of academic research. A further aspect of interest at QualU was the repeated occurrence of systems development as a specific area of claimed focus in research preparation. This suggests possible links with the predominant emphasis on systems design and development at UG level.

Table 8.4 summarises the commonalities, similarities, and differences between the two cases, suggesting new themes that emerge from the case analysis. The summary provides an overview of the discussion in this chapter as part of the process of crystallising prevalent themes.

Table 8.4		
<i>Commonalities and Differences Between QualU and QuantU</i>		
Common	<ul style="list-style-type: none"> • Present research process as if definitive and simplified for Honours • Teaching informed directly by own research • Core textbook for Honours • Ancillary research-oriented modules supplement RM module at Master's level • Silences on research ethics and DSR as a new paradigm 	
Differences	<p><u>QuantU</u></p> <ul style="list-style-type: none"> • Teach to own research strengths 	<p><u>QualU</u></p> <ul style="list-style-type: none"> • Even-handed coverage of range of approaches as goal
Similarities, but with some differences	<ul style="list-style-type: none"> • Deepen complexity at Master's level by technical detail • Ancillary research-oriented module tightly linked with RM 	<ul style="list-style-type: none"> • Increase complexity at Master's level by unsettling philosophical basis • Ancillary research-oriented module less tightly linked with RM

At QuantU, the dominating influence of quantitative research preparation aligned strongly with several aspects of the enacted curriculum. Emphasis on a systematic literature review approach to sourcing references aligns well with the quantitative focus at QuantU. Relatively little focus was placed on discussion of various paradigms as the dominant paradigm with its scientific method and evidence-based assumptions were presented as the best way to develop knowledge. This belief was presented employing the imagery of religious faith with its associations of certainty and confidence. Students were seen as apprentices to the master craftsman, learning the

increasingly technical aspects of the craft at the various academic levels. Unsurprisingly, RM lecturers focused on teaching to their own personal strengths in this best way to generate new knowledge.

By contrast, QualU with its dominant qualitative emphasis in research preparation lacked the strong alignment of enacted curriculum with dominant paradigm and unity of purpose seen at QuantU. Instead discussion, self-criticism, and contestation around paradigms, the use of a textbook as core resource and issues of relevance in research were the order of the day at QualU. This welter of contesting positions was curiously at odds with the strong regime of thorough theoretical preparation (front-loading) adopted at all levels. Students were seen as neophyte researchers (fledglings) needing to be front-loaded with prerequisite knowledge before the actual research project was started. Tests and examination formats underpinned this approach, emphasising that research preparation entails ‘knowing’ what to do and how to do it rather than learning by doing. RM lecturers at QualU claimed the need to be proficient across the full range of approaches and methodologies, by contrast to the specialised focus at QuantU. This heroic effort to master a wide range of approaches was accompanied by a certain attitude of humility and self-doubt, in contrast to the almost religious belief and confidence at QuantU. It is also noteworthy that Philip at QualU advocated greater familiarity with aspects of the quantitative approach for both academics and students, as well as passionately arguing for greater social relevance in the research emphasis. Critical voices and emphases appeared to colour the strongly interpretivist position at QualU. The dominant qualitative approach at QualU thus seems to accommodate internal dissent and divergence to a greater extent than QuantU.

As a result of the process followed above, the following new themes have emerged from the cross-case analysis:

- Lecturer identity
- Teaching to own strengths, and use of own research in teaching
- Research development over different levels: simplified at the Honours level; deepened at the Master’s level
- Key research stakeholders, including the IS research community and the IT industry.

8.6 Concluding Remarks

In general, curriculum choices have far-reaching effects on the content, organisation, materials, pedagogy and assessment in the modules concerned. In particular, the research preparation curriculum as planned and enacted in the formal RM modules appears to be strongly influenced by two key curriculum choices as follows:

- Degree to which the RM module is linked to the content of students' actual research projects
- Paradigmatic orientation of the RM module in terms of the degree to which a range of paradigms are presented.

The following claims emerge from the consideration of two cases and would benefit from being tested across a wider range of universities before claiming any general position.

The choice to enact the RM modules with strong linkages to the research project directly influences the sequence and timing of the material, where just-in-time delivery of concepts for the project tends to dominate. Research articles on relevant research practices dominate the teaching resources used. Assessment practices also tend to be dominated by modes that contribute to the gradual development of the research project, with the research proposal being developed iteratively via the module assessments. The focus in the RM modules is on doing the research. Research knowledge is conceived as a resource that must be relevant and directly applicable in the research project. Research learning is thus reactive and interactive with the needs of the research project. Supervisor involvement and influence tend to be correspondingly strong.

By contrast, the choice to enact the RM modules with weak linkages to the research project is associated with the front-loading approach of just-in-case delivery of concepts. Comprehensive coverage of all approaches, methodologies, and methods that could possibly be used in future research projects at all levels tends to be the focus, with extensive reliance on RM textbooks to provide this wide coverage. Assessment practices include tests and assignments assessing the breadth of textbook knowledge. The focus is on knowing about research and how to do it as an abstract set of theoretical and practical principles rather than as resources for immediate application. The conception of research learning is of a package of knowledge to be acquired and

demonstrated in a range of assessment tasks, a commodity that is needed before actually doing research. Supervisor involvement in the RM modules is not required.

The choice of the dominant paradigmatic orientation of the RM modules has equally wide-ranging effects. Content, materials, and influential stakeholders are strongly affected. A quantitative focus is often associated with adopting the perspectives of the IS research community as the touchstone of research practices. Exemplary journal articles provide the models and examples that students should follow in their research. Technical mastery of the craft of research is valued over philosophical debate about paradigms. By contrast, a pluralist or predominantly qualitative paradigmatic orientation to the RM module is often associated with adopting the perspective of the IS practitioner as the index of research value. Relevance to the industry and society in general is valued above technical rigour. Philosophical debate about paradigms and approaches is of high intrinsic value.

The RM lecturer is involved in whichever of these curriculum choices is adopted and thus has strong agency in the nature and form that the RM curriculum will take. Structural influences such as the institutional and departmental ethos, discipline history, and location interact with the lecturer's personal identity, influenced by educational background, PG supervision, and own doctoral study. The next chapter will go on to explore this range of competing and converging influences on the RM lecturer's curriculum choices.

Chapter 9

Theoretical Analysis of Information Systems Research Methodology Curricula

9.1 Introduction

Chapters 6 and 7 provided detailed analyses of the intended curricula which specify the IS RM modules at Honours and Master's levels across the South African public university landscape. Chapter 8 focused on the enacted RM curricula at two, contrasting universities, deepening and extending some of the themes from Chapter 7 as well as introducing the new themes of lecturer identity, research stakeholders and the identity of IS as a discipline.

In summary, the following key themes influencing research preparation in IS emerged from chapters 6 and 7:

- Paradigmatic orientation of the lecturer and RM module
- Pedagogical orientation of the lecturer and RM module
- Degree of linkage of the RM module to the research project
- Generic or specialised nature of the RM module
- Degree of research rigour as opposed to societal relevance of research
- Silences.

The following additional themes emerged or received prominent emphasis in Chapter 8:

- Key research stakeholders, including the research community and IT industry
- Lecturer identity
- The identity of IS as a discipline.

The primary aim of this chapter is to start engaging with critical research question 3: Why are the IS RM curricula the way they are? This will entail crystallising the various themes into key overarching themes and bringing these key themes into dialogue with the literature. Links between the key themes will also be explored, anticipating further discussion of critical research question 3 in Chapter 10.

In chapters 6 and 7, the unit of analysis was the specific RM modules as reflected in the formal, written curriculum documents. In Chapter 8, the enacted curriculum in the two selected cases focused on the broader RM curriculum across the various PG levels, with relatively less emphasis on the discrete characteristics of the RM modules. This trend towards greater abstraction will continue in this chapter. Attempts to theorise from a sectoral analysis of curriculum documents and two cases will be aimed at building a theory for testing on a more representative level.

The following overarching themes consolidate the various themes from Chapters 7 and 8 and will be used to structure the discussion in this chapter:

- Paradigmatic orientation of the RM curriculum
- Pedagogical orientation of the RM curriculum
- Identity of the discipline of IS
- RM Lecturer identity
- Key research stakeholders, including the research community and IT industry
- Silences in the data.

The earlier theme of degree of linkage between the RM module and the research project from Chapter 6 becomes a sub-theme under pedagogical orientation. Similarly, rigour versus relevance is subsumed under key research stakeholders, and generic-specialised is a sub-theme under discipline identity.

The next section explores the key theme of paradigmatic orientation of the research preparation modules. Key IS literature is used to contextualise the various paradigms used in research, followed by discussion of six sub-themes.

9.2 Paradigmatic Orientation of the Information Systems Research Methodology Curriculum

In Chapter 6, the paradigmatic orientation of a module was described. It was noted that modules can be characterised as being predominantly positivist, interpretive or critical; eclectic orientations of pluralism, mixed methods or pragmatism are also possible.

While the essence of this understanding of the meaning of paradigmatic orientation is relevant in this chapter, the focus here will be less on individual modules than on the RM

curriculum as the combined set of RM and research-oriented ancillary modules across Honours and Master's levels.

As discussed in greater detail in Chapter 2, IS research has been traditionally positivist in nature, drawing substantially on its origins in CS. Positivism was identified by Orlikowski and Baroudi (1991) as the dominant research approach across all journal articles published from 1983 to 1988, but significantly they argued for the value of diverse paradigms in IS, specifically advocating the interpretive and critical approaches as complementary to positivist approaches. The interpretive cause was further advocated by Walsham (1995a; 1995b), culminating in Klein and Myers (1999) confirmation of general acceptance of interpretive approaches in *MISQ*. Several subsequent articles that conducted journal analyses charted the increased proportion of interpretive approaches (Chen & Hirschheim, 2004). Key articles by Mingers (2001; 2003) advocated multi-methodology and mixed methods as appropriate approaches for IS researchers. Recently, Myers and Klein (2011) have supported the critical approach, Wynn and Williams (2012) have argued for critical realism as the paradigm of choice for IS, and, in 2013, general principles for conducting mixed methods research in IS were outlined by Zacharadias et al. in *MISQ*.

9.2.1 Paradigmatic orientation and content

Against this background of shifting attitudes to the various paradigmatic orientations in the discipline, it is apparent that the curriculum choice to orientate RM modules towards a specific paradigm will have direct influences on the content. Although many of the formal MOs for Honours RM modules claimed a pluralist approach in line with the suggestions of Trauth (2011) and Wagner (2009), the proportional emphasis given to topics such as hypothesis testing and statistics revealed the dominance of broadly quantitative approaches. At the Master's level, four of the five universities offering research preparation modules claimed a predominantly quantitative orientation, confirmed by the strong emphasis on quantitative topics in the MOs and handbooks. Minimal mention was made of the critical approach, except for mentioning it as one of the three main research paradigms, and the mixed methods approach received at best footnote attention. Neither critical realism as advocated by Roode (2003) for IS nor the grounded theory method supported by Brown and Roode (2004) is mentioned. The core pillars of IS research, namely action research, development work and grounded theory, as advocated by de Villiers (2005) are hardly mentioned except in one MO. Paradigmatic orientation of the research preparation curriculum in

South African public universities thus appear to be lagging the trends in the literature, with a dominant quantitative tradition, the emergence and acceptance of some qualitative approaches, and recent, though isolated, interest in the critical approach.

In Chapter 8, QuantU and QualU were selected for focused case analysis as illustrations of predominantly quantitative and qualitative approaches to research preparation respectively. As expected, QuantU espoused and enacted the research curriculum with a strong technical emphasis. Thus, substantial coverage of hypothesis testing and statistical tests of significance at the Honours level was further developed at the Master's level with extensive discussion of topics such as reliability, validity, generalizability, and limitations from a technical perspective. Coverage of theories specific to IS in the Honours RM module emphasised TAM and IS continuance (Bhattacharjee, 2001), which are firmly positivist in form and nature. Several 2012 Honours research projects were designed as topics to test these existing theories within varying contexts. Some Honours research projects were based on interpretivist theories, but these theories were introduced to the students by their supervisors, outside of the formal RM module. Thus, the positivist theories constituted the formally delivered curriculum content and dominated the project topic choices; interpretivist approaches were dependent on supervisor input outside of the formal RM module.

At the Master's level at QuantU, the majority of research projects were strongly positivist in nature, in line with the claimed focus on the hypothetico-deductive approach to research. The sample of Master's research proposals, although on a variety of topics, exhibited strong similarity in structure, form, and content. The consistent emphasis was on preparing students to rigorously test existing IS theories in varying contexts, thus extending the domain of the theory. The impression created is of a strong research formula that works (in other words it is accepted and reproduced in the leading journals) and is thus reproduced in the teaching and subsequent execution of research. Students are apprentices to the master craftsman, observing and internalising the technical nuances and rigours of the tried and tested formula. The master craftsman is best exemplified by Frank, who was utterly convinced of the value and rightness of the quantitative approach, extolling its virtues in semi-religious metaphors.

By contrast, at QualU, claimed intentions of pluralism in terms of delivery of paradigms, methodologies, and methods at the Honours level were acknowledged as idealistic and the

dominant focus was on qualitative approaches. The Master's research preparation modules had a strongly interpretive flavour, although quantitative theories, methodologies, and methods were used as counterpoints to the main focus. All of the research-oriented modules had a less technical emphasis than was the case at QuantU, with far greater focus on philosophical aspects of research, including ontology, epistemology, and methodology. As expected, coverage of IS-specific theories emphasised the interpretive basket of theories such as sociomateriality, structuration, and actor-network theory, with the more positivist theories TAM and UTAUT used only as contrasting counterpoints.

In summary, the paradigmatic orientation manifests in the emphasised content as expected. Predominantly quantitative approaches emphasise rigour, especially technical aspects such as reliability and validity measures, whereas predominance of the qualitative approach is associated with increased philosophical discussion around the various paradigms and methodologies and less emphasis on technical rigour. As indicated by Trauth (2011), methodological pluralism remains a challenge for IS research preparation.

9.2.2 Paradigms and assuredness

Research curricula that exhibit quantitative dominance include strong attitudes of belief and assuredness in the paradigm and incontestable principles whereby research is taught and undertaken. The sense is of a paradigm that has been proven and does not require justification. Alternative approaches are acknowledged but are perhaps regarded as pretenders to the throne. Qualitatively dominant research curricula showed similar assuredness, but within more accepting attitudes toward alternative approaches, including the quantitative approach. However, this assuredness is tempered by the need to justify and re-frame qualitative concepts in terms of the quantitative equivalents, almost defining itself in relation to the quantitative gold standard rather than in its own right.

The quantitative attitude of certainty and superiority is also evidenced in the relative silence in both written and enacted curricula on the topic of paradigms. The standard of positivism has become so ingrained as to not require discussion or explanation. By contrast, qualitatively oriented curricula unpack the concept of a 'paradigm' as well as explain and illustrate the concomitant concepts of ontology and epistemology. Interpretive approaches are problematised by their

adherents as part of the mindset of reflection, introspection and self-criticism. Positivist curricula focus much more on deepening the degree of technical rigour and do not allocate much, if any, time to philosophical considerations.

In general, a predominantly positivist research curriculum is advocated with converging consensus (QuantU) on matters of content, pedagogy, and assessment. By contrast, predominantly interpretive research curricula (QualU) evince divergence of opinion and contestation on such matters. Trauth's (2011) identification of the need for researchers to articulate their perspective and world view in their work appears to be somewhat achieved at QualU, but minimally so at QuantU.

9.2.3 Paradigm continua

Lather (2006) argues for “paradigm proliferation” (p. 35) in the teaching of research methods, echoing Wagner (2009) and Trauth's (2011) advocacy of pluralism in research education. Denzin (2008) supports this position, calling for “paradigm dialogs” (p. 315) rather than a return to the paradigm wars of the 1980s. According to these scholars, students should thus be familiar with a range of paradigms and should practice viewing problems through different paradigmatic lenses in order to get a sense of the complexity of the problem. From this perspective, lecturers have an obligation to engage students with multiple paradigms and enable this paradigmatic experimentation. QualU approximated this teaching approach in their Honours RM module where positivist, interpretive, and critical paradigms were covered and assignments required students to imagine a research topic from various paradigms and methodologies. Furthermore, even in the predominantly interpretive Master's RM module, positivist concepts such as reliability and validity were used as counterpoints to illustrate equivalent qualitative concepts such as transferability and credibility.

By contrast, QuantU were far more focused on deepening the quantitative aspects of research preparation in the RM modules. Discussion of paradigms was not foregrounded for student discussion. The overriding approach was to teach the generic, uncontested concepts and skills required in the implementation of the research project, grounded on the implicit positivistic assumption that these were simply required and did not warrant philosophical debate or unnecessary complication. At the Honours level, the RM module is significantly described as

providing a “toolkit” for research. The metaphor emphasises the technical, utility value of the concepts and skills in the toolkit, but also implicitly suggests that the concepts and skills are functional and without underlying assumptions, values, or contested issues.

In summary, qualitatively-oriented curricula engage more fully with philosophical foundations of research, in particular the construct of a paradigm. Quantitatively-oriented curricula minimise or tacitly ignore these complicating philosophical uncertainties, presenting concepts as essentially value-free and requiring only sound rational and technical understanding in order to use them in the research projects.

9.2.4 Paradigms and lecturer identity

Paradigmatic orientation of the RM curriculum reflects curriculum choices made by the lecturers. Furthermore, these choices reflect aspects of lecturer identity. For example, Frank at QuantU was emphatically clear that he will only “preach what he practices”, resulting in a singular focus on best preparing students in the quantitative basket of techniques that he has mastered and uses extensively in his own research. Frank described himself essentially as a positivist researcher and believes that the hypothetico-deductive approach is the best way to generate new knowledge. This conception extends logically into his perspective of his role as an RM lecturer – it is to spread the faith to his student followers. He has been “schooled” in the approach reflected in the institutional and faculty ethos, and his own research activity has resulted in quantitative thinking becoming “ingrained”.

By direct contrast, Lyn at QualU described her role as an RM lecturer as requiring ongoing self-development and exposure to alternative paradigms, methodologies, and methods so that she is able to provide as broad and varied a research preparation experience for students. She aspires to the role of a continually developing research methodologist who is able to match the most appropriate paradigm, methodology, and method to the specific research problem at hand. She claimed that emphasis on a range of paradigms in the RM curriculum was an indicator of disciplinary strength, not an indication of a weak identity.

Philip at QualU defined himself as the “AND guy”, reflecting the need he saw to be familiar with both quantitative and qualitative approaches to research. However, he was critical of the limited social relevance of research in both of these traditions, hinting at elements of the critical

paradigm. He was strongly critical of the “puritanical superiority” of those who preach the scientific method as the only pipeline to truth, but was equally critical of qualitative researchers unfamiliar with quantitative approaches. He saw himself as an outsider to the predominantly qualitative focus at QualU, while simultaneously extolling the virtues of the interpretive way that had been institutionalised in the department. He represents an interesting paradox in terms of identity: initially employed and having studied at QuantU, PhD-qualified and currently employed at QualU, consistently critical of both paradigmatic orientations and hinting at an imminent critical paradigmatic stance.

Gary at QuantU provides an illustration of an outsider to IS aspiring to be part of the research culture. His varied academic background and relative inexperience as an IS RM lecturer, allied to his relationship with Frank as supervisor and mentor, place him in the role of apprentice to the master. He echoes Frank’s words, for example, that research experience can be used as “spare change” in providing research examples and illustrations to RM students. However, at another level, he expresses an openness to qualitative research that is different to Frank’s strong advocacy of the superiority of the scientific method. Circumstances place him in the temporary position of pushing the positivist approach, but in the longer term there are suggestions that he may assume a critical position similar to that of Philip at QualU.

In summary, the relationships between individual paradigm, chosen paradigmatic orientation for the RM curriculum and conceptions of lecturer identity are multiple, sometimes paradoxical. A personal quantitative paradigm is associated with a tacit, singular, and exclusionary focus on quantitative concepts, methodologies and methods—preaching what you practice. Individual qualitative paradigms are associated with openness to the proliferation of paradigms in the research preparation curriculum with the attendant complexities, contestation, and complicated research choices for students. Predominantly qualitative institutions seem better able or willing to accommodate the contestation and diversity, providing a home for lecturers with a leaning towards the critical paradigm.

The issues of lecturer identity and the influences upon identity both as researcher and as RM lecturer will be further probed in section 9.5 under the specific theme of lecturer identity.

9.2.5 Paradigms and disciplinary identity

The paradigmatic orientation of the RM curriculum is influenced by and in turn influences the notion of disciplinary identity. Thus, the logical location of the discipline of IS within the university structures will be related to paradigm alignment. For example, a quantitative orientation to research would best fit within a department/faculty/college structure that supports or at least accommodates this approach. Staff qualifications would also be expected to align with the dominant paradigmatic orientation to some degree. The unique aspect of IS staff UG and PG qualifications will be further discussed in the key theme of disciplinary identity in section 9.4.

9.2.6 Paradigms and contradictions

The degree of contestation on the issue of the importance of paradigms in general and of specific research paradigms in particular has been alluded to in a previous section. Quantitatively dominated RM curricula are often silent on the topic, focusing on technical preparation, whereas qualitatively oriented curricula pay significant attention to identifying personal paradigms and underlying assumptions in preparing students for research. Within qualitatively dominated orientations, a high degree of contestation and debate about paradigmatic issues is generally encouraged.

It was also apparent in some of the formal curriculum documents that issues of paradigmatic orientation are sometimes only partially understood and are even viewed in contradictory ways. For example, one institution included an overtly qualitative textbook by Myers (2009) on the reading list but defined research as “discovering facts”. Embedded, tacit understandings of the traditional positivist approach to research in IS and CS occupy substantial linguistic territories in the thinking of some IS lecturers. Attempts to introduce alternative paradigms are often couched in the language of the dominant paradigm, a trend characteristic of emerging paradigms and disciplinary transitional states. These contradictions and embedded thinking can be seen not only as signals of intended transition but also as indicators of the strength and implied resistance of the research territory possessor.

In summary, the paradigmatic orientation of the RM curriculum influences content and emphasis and links with lecturer and disciplinary identities, attitudes, and values in expected ways, as well as providing the terrain to detect possible transitions or competition between various

paradigms. Traditional positivist orientations appear to have a singular, implicit focus while qualitative orientations are multiple, more explicit and open to the contestation of the uneven, complementary, and competitive terrain. Advocacy of paradigmatic and methodological pluralism by Trauth (2011) and Wagner (2011) are not in general evidence, with approaches generally more aligned to the mono-method focus advocated by Myers (2011) with varying degrees of prescription.

The next section explores the key theme of pedagogical orientation of the research preparation modules.

9.3 Pedagogical Orientation of the Information Systems Research Methodology Curriculum

It would be natural to expect that paradigmatic orientation of the RM curriculum would align strongly with pedagogical orientation, that is, that a positivist paradigmatic orientation would align with instructivist pedagogies and that a qualitative paradigm would be associated with constructivist pedagogies. This neat alignment does not appear to be the case, and it is often unexpected occurrences that point to significant themes and possible explanations.

In Chapter 7, I used Toohey's typology of pedagogical approaches to categorise RM modules across South African PG IS RM modules. The instructivist approach aligns well with the notion of the student as a consumer of research knowledge and skills in preparation for application in the actual research (Murtonen & Lehtinen, 2005) and with the front-loading approach (Winch & Clark, 2003). There was almost no evidence of a critical pedagogy and approximately equal distribution across instructivist and constructivist approaches. At the Honours level, instructivist approaches were slightly more common, with constructivist approaches marginally dominant at the Master's level. Thus, the research preparation landscape appears to offer no clearly identifiable patterns or landmarks. The field seems to be in a state of transition as constructivist approaches gain ground steadily in the face of the dominant instructivist approach.

9.3.1 Pedagogical orientation and the research project

IS PG RM modules across South African universities can be strongly or weakly linked to the actual research project. In Chapter 7, it was found that the majority of RM modules are strongly linked to the research projects of students, with the sequence and content of the RM module being

largely driven by the immediate needs of the research project. QuantU described this strong linkage as presenting research concepts just-in-time for use in the research project. Significantly, some RM modules adopted a firm position of minimal linkage to the actual research project, in particular at QualU. Theoretical research preparation was required as a prerequisite for starting the research project so that the student had a broad research understanding before embarking on decisions of project topic, methodology, and method. The latter front-loading approach has suggestions of instructivist downloading of content to relatively passive students; material is covered just-in-case it is needed later in the project.

This curriculum choice of deciding on the extent of linkage to the research project is underpinned by obvious pedagogical assumptions. Strong linkage to the project assumes that students learn best by doing, as advocated by Roth (2006), compared with the assumption of the need for thorough theoretical and generic content preparation assumed in the weak linkage option. The front-loading or just-in-case approach aligns directly with Whiteman and Oliver's (2008) practical approach, which emphasises the need to rehearse thoroughly before applying the well-practised knowledge in practice. It is perhaps significant that the strong advocates for and users of a front-loading approach lecture are at one of the few universities that follow a strongly interpretive approach.

9.3.2 Textbook use

A wide range of prescribed and recommended textbooks were observed during analysis of the MO documents in Chapter 6. For example, QualU advocated central use of a textbook to drive research preparation at the Honours level by contrast to QuantU, where the textbook was regarded as background reading, useful mainly during the writing up of the dissertation. At the former, the textbook by Oates (2006) formed the core material of lectures, tests and assignment work. Fortnightly class tests were directly drawn from the textbook material prescribed for preparation for the session. The front-loading approach in the Honours module at QualU is thus associated with use of a prescribed textbook as the core driver of teaching and learning activities. By contrast, prescribed textbooks did not play a significant role at the Master's level at QualU where the emphasis fell on drawing from as wide a range of resources as possible.

However, in contrast to the extensive use of a prescribed book at the Honours level, the Master's RM modules at QuantU regarded journal articles as key research preparation resources. Frank claimed that the "real" research in journal articles with its limitations and learning points both illustrated and prepared students for research work far better. The dominant quantitative paradigm at QuantU neatly matches the strong quantitative dominance in IS research journals.

Assessment practices are also an indicator of pedagogical orientation. For example, assessment is directly influenced by the degree of linkage to students' actual research projects, as will be discussed below.

9.3.3 Assessment

In Chapter 6, it was noted that the majority of IS RM modules involved assignments as the dominant mode of assessment, one of which was the submission of a research proposal. A small number of modules made use of tests and examinations. For example, QualU made extensive use of class tests as an incentive or lever to promote independent research reading and preparation by students. QualU also required the research proposal to be submitted as a summative examination assignment.

In general, QualU, with its overt interpretive paradigmatic orientation, enacted the RM curriculum with a combination of instructivist pedagogies and assessment practices that emphasise memorisation of content, the textbook as driver of the curriculum content and assessment, and an unusual take-home examination format for the summative research proposal submission. Instructivist pedagogies and assessment practices align strongly with the curriculum decision to front-load the RM module with broad theoretical knowledge, with minimal linkage to students' specific research topics. This basket of pedagogical practices is largely traditional and instructivist in nature, somewhat at odds with the expected constructivist assumptions and epistemologies of the interpretivist paradigm. By comparison, QuantU enacted the RM curriculum using a largely instructivist pedagogy. Assignments were the dominant mode of assessment, including formative feedback on submissions that form cumulative components of the research proposal. However, these assessment practices embody constructivist assumptions as students build their individual research thinking in the context of their own research topics.

Pedagogical orientation of the RM curriculum is thus characterised by varying mixes of instructivist and constructivist assumptions and practices. We now turn to consider some of the distinctive pedagogical approaches observed in the QuantU and QualU cases, in order to explore the possibility of identifying distinctive pedagogies for quantitative and qualitative research preparation curricula.

9.3.4 Signature pedagogies

Shulman's (2005; 2007) construct of signature pedagogies for professional disciplines has been appropriated somewhat loosely in order to capture a sense of some of the notable pedagogies in IS research teaching. Documentary analysis of MOs was constrained by the generally parsimonious description of teaching strategies in the written documents. However, the two case visits afforded a glimpse of what may be indicators of specifically IS research signature pedagogies or more general research signature pedagogies. Each of the identified pedagogies is also associated with implicit conceptions of students and student learning.

Frank at QuantU was described by colleagues and observed in practice as the master craftsman, performing, illustrating, and exemplifying the technical rigour, precise discourse, and impeccable logic of the hypothetico-deductive method. The lecture mode dominated seminar sessions, accompanied by handouts to guide discussion or by slides that illustrated technical concepts such as reliability and validity with statistical precision and clarity. Students were explicitly described and implicitly regarded as apprentices, that is, novice researchers who would learn both explicit and tacit tricks of the trade from the master craftsman. The onus was on students to observe and emulate the master.

By contrast, Philip at QualU exemplified the critical, chameleonic facilitator of discussion, presenting material in the form of stories, illustrated with historical background and anecdotes and role-played as debates, with students taking opposing paradigmatic positions on issues. Lecture sessions were interactive with no handouts or presentation slides provided to students. Philip insisted that the students construct their own understandings of the material covered rather than wait for any definitive handouts from the lecturer. Students were clearly assumed to be active constructors of their learning with the lecturer as a creator of opportunities to engage with the complexity of issues which are generally regarded as multiply layered.

By further contrast, Lyn constructed lecture sessions that were built around the core textbook. Assessment and the accompanying marks acted as the driver of student learning, with all assignments, class tests, and group assignments contributing in some way to the final mark. She exemplified the pedagogical role of teacher, providing a thorough, well scaffolded system of activities to ensure student learning. Students were described as “fledglings”, a term carrying connotations of neophyte unreadiness best remedied by a strict regime of generic research knowledge and skill development.

In conclusion, the three pedagogical styles described may be seen as representing an initial take on possible signature pedagogies in research preparation in IS: quantitative approaches dominated by mentoring and instruction in the technical arts of the approach; qualitative/critical approaches exemplified by stories, role playing, and debates where students are required to construct their own understandings rather than by definitive formulae.

9.3.5 Ways of thinking and practicing

The construct of WTP was discussed in some detail in Chapter 2. Academic disciplines have characteristic WTPs in approaching problems in practice and research. These characteristics include conceptual and methodological tools, procedures, practices, and habits of mind that may be explicit or implicit. IS as an emerging, applied discipline has its own domain of problems and would be expected to have its own WTP or set of related WTPs. More specifically, IS research problems or issues would also be expected to exhibit some of these WTPs, for example, articulation of problems, methods of inquiry and reporting, and also what counts as evidence (Kreber, 2009). For this study, the relationship between WTPs, the RM curriculum, and pedagogical orientation is of particular interest.

Following the socio-cultural approach, Northedge and McArthur (2009) discuss the role of the teacher in guiding students into a discipline, identifying four different approaches:

- Apprentice–scholar
- Lecture-centred, emphasising content and driven by the lecturer
- Constructivist, where lecturers create opportunities for students to actively construct their individual understandings of the disciplinary thinking
- Student-centred, starting from and driven by students’ personal conceptual frameworks.

These approaches link directly with the previous discussion of possible signature pedagogies in IS, with Frank epitomising the apprentice–scholar approach with an admixture of the lecture-centred approach. Philip exhibited strong aspects of the constructivist approach. Lyn demonstrated a combination of the lecture approach, combined with some elements of constructivism.

Northedge and McArthur (2009) specify the role of higher education teaching as being to provide students with “interim access to the disciplinary community” (p. 110) and with the necessary support to allow them to engage and test their ideas within this simulated disciplinary community. However, providing this access to students requires approaches other than traditional lecture-centred methods. In general, IS RM modules in South African universities follow a lecture-centred approach, with a strong emphasis on content. Both Frank and Lyn, and, to a lesser extent, Philip, employ variations of the lecture mode in their seminars. However, Frank’s approach at the Master’s level is to perform, demonstrate, illustrate, and explain actual research by focusing on explaining in detail his own research, in particular works in progress for publication. Some of the WTP conceptual procedures and practices are invisible, tacit, and thus not easily “sayable” (Kreber, 2006), so the master demonstration enables students to observe technical research thinking in progress. This approach resonates with the “decoding the discipline” approach outlined by Sundt (2010), as an adaptation of the work of Middendorf and Pace (2004). The difference is that Sundt attempts to make explicit some of the implicit assumptions and practices whereas Frank models the practices without necessarily attempting to make all aspects explicit.

Philip’s unusual seminar facilitation style at the Master’s level similarly demonstrates research thinking but in a more philosophical way. He attempted to engage students in debates in order to open up the multiple dimensions of issues rather than adopting a simplified singular view of an issue. Even when discussing technical issues such as validity and reliability, he followed an approach of opening out the complexity of the issue and encouraging students to take their own perspective. In addition, he claimed the strong view that a research mindset cannot be developed from studying textbooks but that students need to draw on a wide variety of sources in developing independent research thinking. This approach aligns well with Whiteman and Oliver’s (2008) discourse approach, where students engage critically with contested ideas and concepts in the discourse of the discipline.

In summary, the previous two sections have suggested some nascent models of signature pedagogies for quantitative and qualitative research preparation. In particular, some of these pedagogies offer examples of processes of guiding students into the WTP of the discipline of IS. Additional influences in Trowler's eight TLR moments will be used to unpack disciplinary influences on pedagogies under the key theme of disciplinary influence in section 9.4.

9.3.6 Pedagogic differences in emphasis across postgraduate levels

Curriculum choices in terms of differences between emphases at PG levels seem to be strongly influenced by paradigmatic orientation. Thus, QuantU chose to simplify the Honours research preparation curriculum by eliminating or minimising certain aspects of research rigour. Rigour is one of the hallmarks of the positivist approach to research and it is significant that the Honours RM modules were simplified on this dimension rather than any others. QualU chose to simplify the Honours research preparation curriculum by presenting the research process as if definitive, thereby minimising philosophical contestation about various research approaches. Once again, the simplification was located in one of the hallmarks of the qualitative research tradition, namely acknowledgment and articulation of the messy complexity of the research process with its ethical, power, and philosophical complications. Both approaches compromised on an essential feature of their approaches in simplifying the Honours RM curricula for accessibility of the novice researchers.

9.3.7 Linkage to research-oriented ancillary modules

Both QuantU and QualU offered compulsory research-oriented modules in addition to the RM module at the Master's level. The RM curriculum was thus spread over the set of research-oriented modules, apart from the research project itself. Each university attempted to provide linkages between the set of research modules, but QuantU showed a more strongly aligned link than QualU. QualU relied on internal linkages such as the requirements in the RM module that the theoretical framework selected for the research proposal should be drawn from the theories covered in the research-oriented ancillary module. Different lecturers were involved with the set of research modules. However, at QuantU, the two research modules were tightly integrated in a single schedule of seminars for the pair of modules, both lectured by the same academic. Once again, predominantly quantitative research curricula exhibit stronger alignment and coherence than qualitative curricula.

In summary, it was found that pedagogical orientations of RM curricula are influenced by and in turn influence modes of delivery, assessment, textbook and resource usage, and teaching strategies adopted for novice researchers. Nascent signature pedagogies for quantitative and qualitative IS research preparation were identified, including some elements whereby emerging researchers are guided into the disciplinary discourse.

These issues will be further explored under the key themes of disciplinary and lecturer identity in sections 9.4 and 9.5 respectively.

9.4 Disciplinary Identity in Information Systems

As discussed in the review of the literature on IS as a discipline in Chapter 2, the conception of an academic discipline has undergone substantial change over the past few decades. Barnett (2009) captures the change from disciplines as “powerful ways of knowing the world” (p. 6) in the early twentieth century to more recent debates about generic skills, student voice, and vocational influences. Disciplines are thus always “in-the-making” (Barnett, 2009, p. 7), but there are specific characteristics that can be used to identify the core of relatively stable aspects that identify a field of study as a discipline.

As discussed in Chapter 4, O’Donovan and Roode (2002) formulated a useful ontological framework for IS research, identifying the cultural structure and contexts of significance as the two broad dimensions. Cultural structure includes the institutional structure, discipline history, and shared intellectual world of collectively accepted meanings (norms and conventions) that guide practice (O’Donovan & Roode, 2002). These authors describe contexts of significance as including IS academics, networks, research projects, and publications. Disciplinary identity thus evolves dynamically out of the interaction between the contexts of significance and the cultural structure (O’Donovan & Roode, 2002). These two dimensions will be used to organise the discussion in this section, focusing specifically on disciplinary culture and lecturer identity as key aspects. Structural aspects such as logical location of the discipline within the university organisational structure, discipline history and academic staff components will be considered first.

9.4.1 Cultural structure

The physical context of a discipline provides a macro-indicator of disciplinary identity. This would include the organisational placement as well as the name of the discipline. In Chapter

6, most IS departments were seen to be located in commerce and some in science, while exceptions were identified in social sciences. Non-traditional groupings such as built environment and IT were also identified. Information Systems was the most common name across the sector, but grouping with CS is common. Less common names were also identified, including informatics. This diversity reflects the history of the discipline, as outlined in Chapter 2, but it is significant that an individual IS department will be influenced by its organisational location and the dominant culture(s) within that structure. Placement within a faculty of science and close grouping with CS would thus impact on the paradigmatic orientation of research and research preparation differently to placement within a faculty of social science.

Similarly, the academic staff composition would be influenced by the organisational location. The profile of academics' qualifications and research interests would, to some degree, reflect the overall culture of the home faculty or college. For example, in Chapter 8, QuantU claimed a strong quantitative tradition of research within sister disciplines in the faculty as well as in the discipline itself. This confirms the alignment of disciplinary research with the faculty culture, but it is significant that pockets of qualitative research interest are also accommodated at QuantU. By contrast, QualU espouses a predominantly qualitative approach to research, despite being loosely paired with CS in the faculty structures. The influence of organisational location is thus by no means a linear and simple vector; however, some broad alignment of research traditions and paradigmatic orientation has been identified.

Finally, the institutional history of the discipline provides a cultural structure that will influence the research direction of a department. For example, QualU's adoption of the qualitative approach to research is largely attributed to the powerful influence of an influential researcher and academic leader.

We now consider the cognitive structure of the discipline, with a specific focus on aspects of knowledge production and research preparation.

9.4.2 Cognitive structure

Donald's (2002) generic conception of an academic discipline is helpful in linking disciplines to research preparation. She conceives disciplines as comprising an accepted body of theory and generally agreed research strategies and techniques for replicating and validating

knowledge (Donald, 2002). Her cognitive framework for disciplinary thinking contains concepts, conceptual structure, methods and modes of inquiry, and processes and criteria for validating knowledge. It is significant that a particular challenge noted in Chapter 7 was the gap between the IS UG curriculum, which emphasises concepts and logical structure in a prescriptive, uncontested way, and the introduction of research thinking at PG level, with its focus on methods of inquiry and knowledge validation. In addition, the two specific cases explored in Chapter 8 exemplified specific methods of inquiry, namely the hypothetico-deductive approach at QuantU and the qualitative approach, emphasising the case study strategy, at QualU.

Furthermore, Donald's understanding of disciplinary thinking foregrounds the centrality of an accepted body of theory to an academic discipline. In Chapter 6, it was noted that the majority of Honours RM modules do not include specific coverage of the accepted IS theories, such as TAM and UTAUT. At the Master's level, specific IS theories are covered, but it does suggest that the majority of Honours curricula are presented as relatively generic rather than having a specific IS flavour. Since research preparation only starts at the Honours level, it is understandable that the approach is generic, but the lack of specific IS theory coverage does underline the point that Honours students do not develop a strong sense of IS theory.

The related issue of textbooks prescribed in the RM modules is another indicator of whether IS as a discipline contains a substantive body of research knowledge. The sectoral analysis in Chapter 6 indicated a range of prescribed textbooks for RM, ranging from general methodology texts for social science, business, computer science and education. The textbook by Oates (2006), prescribed at some of the universities and recommended at others, is the only methodology text that is located within a disciplinary context. Furthermore, the text incorporates both CS and IS disciplinary emphases.

9.4.3 Structural typologies

As discussed in Chapter 2, Becher and Trowler's (1989) classic text on academic disciplines uses the metaphors of tribes and territories to characterise disciplines. These metaphors emphasise boundaries and turf protection in line with the traditional notion of disciplines as inherently separate and competing with others. Becher and Trowler's structural typology of disciplines into hard or soft and pure or applied based on typical knowledge forms located IS in

the applied quadrant with a more contested placement in the hard–soft continuum. The specific cases discussed in Chapter 8 provide exemplars of predominance of the hard (QuantU) and soft (QualU) quadrants respectively.

However, Becher and Trowler’s essentialist typology also includes a social dimension in the disciplinary practices of the “tribes”; thus, academic disciplines can be classified as convergent or divergent, based on their practices. In this simple typology, QuantU could be argued to be largely convergent whereas QualU could be claimed to be largely divergent. However, simple allocation to a category belies the complex reality of each case. QuantU predominantly followed the scientific method, yet a number of supervisors belonged to research clusters that were plainly following the soft, strongly qualitative approach. Similarly, QualU espoused adherence to qualitative research, yet some supervisors led only topics that are quantitative in nature. In each case, one of the broad approaches predominates, but alternative approaches/worldviews are accommodated in varying forms.

9.4.4 Sociocultural approaches

Trowler and Wareham’s (2007) socio-cultural approach has extended Becher’s structural emphasis by foregrounding the role played by context. Their construct of TLRs provides a more nuanced way of looking at the practices of the tribes than that afforded by the convergent/divergent axes. In addition, the interplay between structural factors and the agency of the academics is emphasised. Trowler’s (2008) eight moments of TLRs provide a powerful metaphor of the interplay between the deterministic forces of the structures and individual agency. These moments include tacit assumptions, implicit theories of teaching and learning, recurrent practices, conventions, codes of signification, discursive repertoires, and power relations, all relating to teaching and learning.

In Chapter 8, some of Trowler’s moments play out in interviews and seminar observations. One of the recurrent practices at QuantU includes lecturing as the mode of transmission, albeit within a seminar setting. The specific practices and techniques associated with the hypothetico-deductive method are best conveyed by precise explanation and description by the master craftsman. Student engagement is primarily to understand and master the well-trodden techniques. By contrast, QualU used more open-ended seminar discussions, particularly at the Master’s level,

where the emphasis was on exploring issues from all angles and building a holistic picture of the issue. The well entrenched “regime” of test, lecture and activity in the QualU Honours modules has evolved over time, representing lecturers’ perceptions of best practices. The so-called take-home examination at all levels at QualU is another example of a recurrent practice that continues to be used without question.

Tacit assumptions were also evident, especially at QuantU. The MOs are relatively silent on the dominant paradigm, but the implicit assumption is that the scientific method and its quantitative methods are the essence of good quality research. Furthermore, implicit theories of teaching and learning at QuantU included the seminar as primarily driven by transmission of content by the lecturer. Moreover, the dominant discourse at QuantU and QualU is naturally aligned with the quantitative and qualitative emphases respectively. It is significant that the occasional interpretive Honours research proposals at QuantU were critiqued largely in the language of quantitative research, emphasising sampling strategies and representativity, which are essential characteristics of quantitative studies. The marking rubric was also structured and couched in the dominant discourse. The voices of supervisors of qualitative studies were relatively muted alongside the powerful critiques and comments made by Frank and Philip during the feedback on proposals. Alternative discourses and approaches are thus tolerated and accommodated but limited by the power of the dominant discourse to influence allocation of marks and the relative standing of studies with a more qualitative leaning. Trowler’s power relations moment is clearly seen in operation at QuantU, where the dominant discourse strongly influences the assessment agenda. Another instance of a power dynamic at QuantU is the antagonistic relationship with the consulting, practitioner mindset of some of the students. Both Frank and Gary discount and denigrate the value of the practitioner perspective relative to the highly valued quality research as published in top IS journals. By contrast, Lyn at QualU is open to the possibility of practitioner research at the Honours level.

The moment of codes of signification refers to topics that arouse an emotional response. For example, Gary’s rave about the consulting mindset carried a weight of emotion. Another example is Philip’s revealing verbal attack on the “puritanical” assumptions of those espousing the scientific method.

9.4.5 Ways of thinking and practicing

An associated construct discussed both in Chapter 2 and earlier in this chapter is Hounsell and Anderson's (2009) WTP. As discussed in more detail in Chapter 2, specific disciplines are characterised by particular WTPs. These WTPs inform and inhabit the delivery of disciplinary subject content, often in an implicit and assumed rather than explicit form. A specific example of a WTP is the traditional UG curriculum which focuses on preparing students for careers in the IT industry, often without critical engagement with the assumptions underlying the skills focus. The practitioner emphasis in the UG curriculum as opposed to the more academic focus at the Honours level was identified as the UG–PG disconnect in Chapter 7.

In addition, the introduction to research and research thinking at PG level affords the opportunity for students to engage with the research thinking that has been used to construct the body of IS knowledge. Chapter 2 touches on the claims of Northedge and McArthur (2009) and McCune (2009) that academics in a discipline have a duty to induct students into the WTPs of the discipline. Northedge and McArthur describe this as providing support for students to participate in the disciplinary discourse. The teaching challenge is to make students interim practitioners in order to engage with these WTPs and to make the implicit thinking processes explicit (McCune, 2009). In Chapter 8, two different approaches to introducing PG students to research thinking in IS in the RM modules were encountered, influenced strongly by the dominant paradigmatic orientation. Thus, at QuantU, the master craftsman demonstrated, explained, and illustrated the tried and tested scientific method, emphasising the key technical techniques to follow and technique limitations to avoid; students predominantly observed and learned from the master craftsman's exposition, implementing and applying this knowledge and skill-set in their individual research projects. On the other hand, at QualU, the Honours RM module relied heavily on an IS-oriented textbook to cover prerequisite research knowledge and skills, with a strong emphasis on the students demonstrating this knowledge in tests and class work; induction into disciplinary thinking was thus largely dependent on the disciplinary emphasis in the textbook. At the Master's level at QualU, seminars were designed and specifically implemented so as not to be instructivist, with repeated emphasis on the need to discuss and interrogate issues from all perspectives; submission before the seminar of a preparatory response paper on the topic, as well as deliberate

techniques to foster discussion amongst the participants, ensured that students were drawn into these discussions.

In summary, the two cases may be seen as exhibiting different ways of introducing students to research thinking in the RM modules. A dominant quantitative tradition largely presents and illustrates good examples of the universally accepted techniques and procedures that are used to generate and validate new knowledge. The benefits of simplicity and of following a known knowledge generation formula are offset by the reduction of problems to those fitting the mould. By contrast, a dominant qualitative approach generally problematises research issues by considering them from various perspectives and adopting a research strategy appropriate to the nature of the research problem. The benefit of holistic consideration of the full problem domain is offset by the plethora of choices and trade-offs required in the research design.

9.5 Research Methodology Lecturer Identity in Information Systems

In this section, the agency of RM lecturers is discussed, followed by consideration of the extent to which personal research influences teaching and lecturer perceptions of research stakeholders. Research stakeholders are entities that potentially have influence on and are recipients of academic research. Examples of research stakeholders are the IT industry and practitioners and the academic community, including postgraduate study, conferences, and journals.

9.5.1 Agency

As discussed in Chapter 3, Trowler's (2009) understanding of disciplinary culture also allows for the agency of academics, who demonstrate personal identities within the culture. The relationship between the disciplinary culture, as seen in Trowler's eight moments, and lecturer identity is thus a complex one. The disciplinary culture is to some extent exemplified in the lecturer's identity rather than being a totally discrete entity.

Thus, for example, Frank from QuantU is steeped in the discipline of IS as offered at the institution as both his Master's degree and doctorate were completed at QuantU. The quantitative approach has become 'embedded' in his research thinking. By contrast, Gary holds Honours degrees in both mathematics and philosophy and a Master's in IS (supervised by Frank), all from QuantU. Although Gary's route into IS is via mathematics and philosophy, it is significant that

both RM lecturers studied IS at QuantU, imbibing the disciplinary ethos. The critical aspect of supervisory influence on research thinking and disciplinary culture also manifests here.

By contrast, at QualU, Lyn holds a BSc in mathematics and CS, an Honours degree in CS and IS, and a Master's degree in CS, all from universities other than QualU and QuantU. However, she holds a PhD from QualU, supervised by Margaret. Philip holds a MCom in IS from QuantU, supervised by Frank, and a PhD from QualU, supervised by Margaret. The obvious common factor is the PhD supervisory influence of Margaret, who was instrumental in establishing qualitative IS research at QualU. The earlier heterogeneous academic influences seem largely to be trumped by the nature and form of the doctoral study and supervisor, although Philip is able to draw on his strong grounding in quantitative research at QuantU, where he also lectured under Frank's academic leadership. In Chapter 8, it was noted that Philip presents himself as the "AND guy", selecting the approach most appropriate to the problem rather than being tied to a specific paradigm. It is also significant that he is the only RM lecturer to exhibit characteristics of a nascent critical paradigm. He has mastered the hypothetico-deductive approach under Frank, been shown the way of qualitative research by Margaret and has developed aspects of the critical perspective.

9.5.2 Research informing teaching

Several instances of RM lecturers indicating the value of using personal research experience and examples to illustrate research concepts were discussed in Chapter 8. Frank at QuantU referred to the value of having research stories and experience as "spare change" during sessions. Gary echoed his wording, suggesting the influence of Frank as his supervisor and mentor. Furthermore, Philip uses a personal research paper as the primary source of discussion in a Master's seminar at QualU. Frank uses a similar strategy when he builds an entire Master's session around the analysis of a quantitative research paper that he published with a student; he indicates explicitly the need to "preach what you practice" as a guiding philosophy in his teaching. Credibility as a RM lecturer is thus enhanced by citing one's own personal research.

Lyn at QualU takes a different view, claiming that credibility as a RM lecturer requires one to have a broad, substantive knowledge of a full range of methodologies and methods in addition to one's own research specialisation. In her view, credibility is gained by the wide range of methodologies rather than the specialisation. Philip partially supports Lyn, arguing that substantive

knowledge and experience of both quantitative and qualitative methodologies is a requirement as a RM lecturer. He occupies the AND position again and pushes the notion of lecturer identity further in claiming the need for specialisation as well, identifying himself strongly with actor–network theory as his preferred lens for tackling research problems. He aligns himself strongly with the writings of Latour as a sociologist of knowledge. Thus, in general, academics involved in research preparation modules at QualU also gravitated towards associating their academic identities with specific IS theories as their niche areas of expertise.

9.5.3 Research stakeholders—perceptions of RM lecturers

In Chapter 2, one of the key debates that recurs in the history of IS as a discipline is relevance versus rigour. It is often presented as an opposition with ardent proponents arguing for the importance of relevance to the industry and society and others advocating the predominant value of academic rigour (King and Lyytinen, 2003). Furthermore, EBP in research education has recently been advocated by Oates (2011) and others. The essence of this approach is to foreground relevance of research topics as well as publish the results of research in a form accessible to practitioners. Ellis and Levy's (2008) problem-based research also emphasises relevant problems drawn from practice as the core concerns of IS research.

In Chapter 6, the intended curricula are relatively silent on the issue of relevance. Occasional references to the IT industry are found in the documents, but in general research preparation is treated as an academic endeavour with greater emphasis on academic rigour and the conventions of research.

In Chapter 8, the relevance and rigour debate is given more prominence as the RM lecturers' perceptions of the relative importance of the academy, the industry, and society are explored. For example, Frank at QuantU emphasises the importance of aligning research preparation with best practices in academia, citing top IS journals, particularly in the US and Australia, as the primary influences on research. In addition, the external examiner of the RM modules at QuantU is acknowledged as a key influence on their shape and form, once again a primarily academic influence. By contrast, Frank is strongly disapproving of the IT industry as being largely uncritical in their adoption of strategies and methodologies. His claim that the industry values work experience more than the evidence base underlines his largely negative

perception of the value that the industry brings to research; he is clear that the industry would benefit greatly from basing practices on the research base in journals. Gary echoes this general lack of value for the industry in his ‘rave’ against the consulting mindset. Both of the lecturers at QuantU are silent on broader societal influences on research and research preparation.

At QualU, the perceptions of the RM lecturers are less consistent and tend to be distributed across the dimensions of rigour and relevance. For example, Lyn supports the value of academic reading in preparing students for research, thus leaning towards the value of the academy, but is also open to suggestions of practitioner research for the Honours module. Particularly at the Honours level, she favours a more practical approach that will assist students in their careers in the industry rather than an overly philosophical, academic emphasis. Philip recognises the “world of social science” as the primary influence on research, placing more emphasis on broader societal needs than the industry or academy.

In summary, the cases show strong alignment with the academy at QuantU and a mixture of alignments with the academy, the industry, and society at QualU. Echoes of the strong advocacy of the scientific method at QuantU and the greater degree of internal differences at QualU are discerned.

9.6 Silences in the Data

This study has identified a number of significant silences across the intended and enacted curricula in IS RM. Some of these relate to new developments in the field such as DSR and the relatively new research paradigms of critical realism, critical theory, and mixed methods. Grounded theory and action research are also largely absent from the research preparation curriculum. These silences may thus represent topics yet to be explored.

A significant topic that received muted coverage in the formal, written documents, and a degree of avoidance in the interviews and focus group discussions was the issue of ethics in research preparation. For example, Frank was comfortable that the institutional requirements on students to apply for ethical approval for research studies covered all the ethical dimensions adequately. The literature specifically discusses the limitation of teaching ethical aspects of research in the context of bureaucratic requirements only (McAuliffe, 2009). McAuliffe (2009) argues that ethical issues of research should be considered across the range of topics, presenting

the ethical decisions and risks in all aspects of the research process. Philip merely hinted at this type of approach at QualU when he referred to setting up a debate on whether ethical concerns unduly constrain research.

The previous sections have discussed the key themes of paradigmatic and pedagogical orientation, disciplinary and lecturer identity and considered some of the silences identified during data analysis. These themes are now brought into dialogue with the constructs of the curriculum framework that was used in the analysis of the data. The following section discusses specific aspects of Lattuca and Stark's (2011) curriculum model, identifying aspects that align with the model as well as motivating extensions to the model.

9.7 Extending Lattuca and Stark's Model of Curriculum

The analysis of the intended curriculum in Chapters 6 and 7, using formal, published curriculum documents in the form of calendars and module outlines, made use of Lattuca and Stark's (2011) curriculum framework. The categories provided and the processes explained by the model largely align with the RM curriculum in IS. In particular, the external influences on the curriculum in the model are able to include disciplinary associations such as ACM, AIS, and IFIP with their contributions to UG curricula, conferences, and journals. These professional bodies and more general disciplinary groupings also include special interest groups. In the case of the RM curriculum, these disciplinary associations would include the IS academic community (by way of academic journals) and peer review (by way of external examination by other academic universities). Lattuca and Stark's model also includes market forces as possible influences on curriculum in general. The study has shown that, although this is contested, the IT industry and practitioners have a significant influence on RM curricula; problems in the IT industry can be a source of research ideas. An additional external force that could influence curriculum content is that of societal needs.

The analysis of the data and the themes that emerged from chapters 6, 7, and 8 also suggested a number of possible extensions to the model. Thus it is possible to explain the RM curriculum in PG IS by means of an extended model. These extensions could in the future be considered in the context of the RM curricula of other emerging applied academic disciplines and as possible additions to the generic curriculum framework for tertiary level institutions.

Lattuca and Stark (2011) list possible internal influences at the unit level of the curriculum in the model. These include faculty (academics), discipline, and student characteristics. The possibility of additional influences is also accommodated by the way the model is described. In the higher education sector, the influence of the lecturer presenting a module is significant, since responsibility and accountability for individual module design and enactment rest with the lecturer (Bridges, 2000). This research study has highlighted the pivotal influence of the constructs of disciplinary identity and lecturer identity, specifically in the context of the IS RM curriculum and primarily at the unit level of the IS department. Thus lecturer identity has emerged as a central construct in explaining the design and enactment of IS RM curricula. This construct evolved during the course of the data analysis, and it comprises various aspects, including paradigmatic and pedagogical orientation, conceptions of research, students and teaching RM, and personal academic qualifications. Experience of research, teaching, supervision, PG examination, and IT practice also feature as important components of lecturer identity. The lecturer's perspective on the respective influences of academia and the IT industry has also emerged as an aspect of RM lecturer identity. The relative freedom to design and enact the RM curriculum in the higher education sector affords lecturers substantive agency in shaping the curriculum.

Another key construct influencing the RM curriculum that has emerged in the study is discipline identity, often operating in interaction with the agency of the lecturer. Each university IS department has its own unique disciplinary culture, evidenced in curriculum documentation (module templates and departmental policies), the academic staff profile, and the history and resource repository of curriculum implementation. Trowler's (2008) TLR also informs this discipline identity, including the tacit assumptions, implicit theories, recurrent practices, conventions, discursive repertoires, and power relations that occur within the discipline.

A specific example drawn from the data illustrates the interaction between the constructs of discipline and lecturer identity. The regulatory framework of higher education in South Africa requires that the design of each module needs to be specified in an official curriculum template. These documents represent an aspect of discipline identity and are intended to assure quality and continuity. In Chapter 6, programme and module templates as representing the official curriculum were found not to be used directly to guide module implementation and are often regarded as purely providing proof of compliance with CHE requirements. Requests for such official

documents from universities participating in the study and the low response rate confirm their minimal direct impact on the curriculum. It would appear that lecturer influence on the design and enactment of the curriculum is dominant.

In Lattuca and Stark's (2011) model, institutional influences are included as a construct, including exemplars such as the mission of the institution, resources, and governance. In the case of IS, with which this study is concerned, the location of the discipline within the broader organisational structure of the institution was identified as a significant influence. It is suggested that aspects of structure, such as organisational location, could be added to the list of possible institutional influences.

Therefore, drawing on the findings of the study, it is suggested that the curriculum model be extended to reflect the specific context of IS RM curriculum as follows in Figure 9.1. Additions to the original model are highlighted in the extended model.

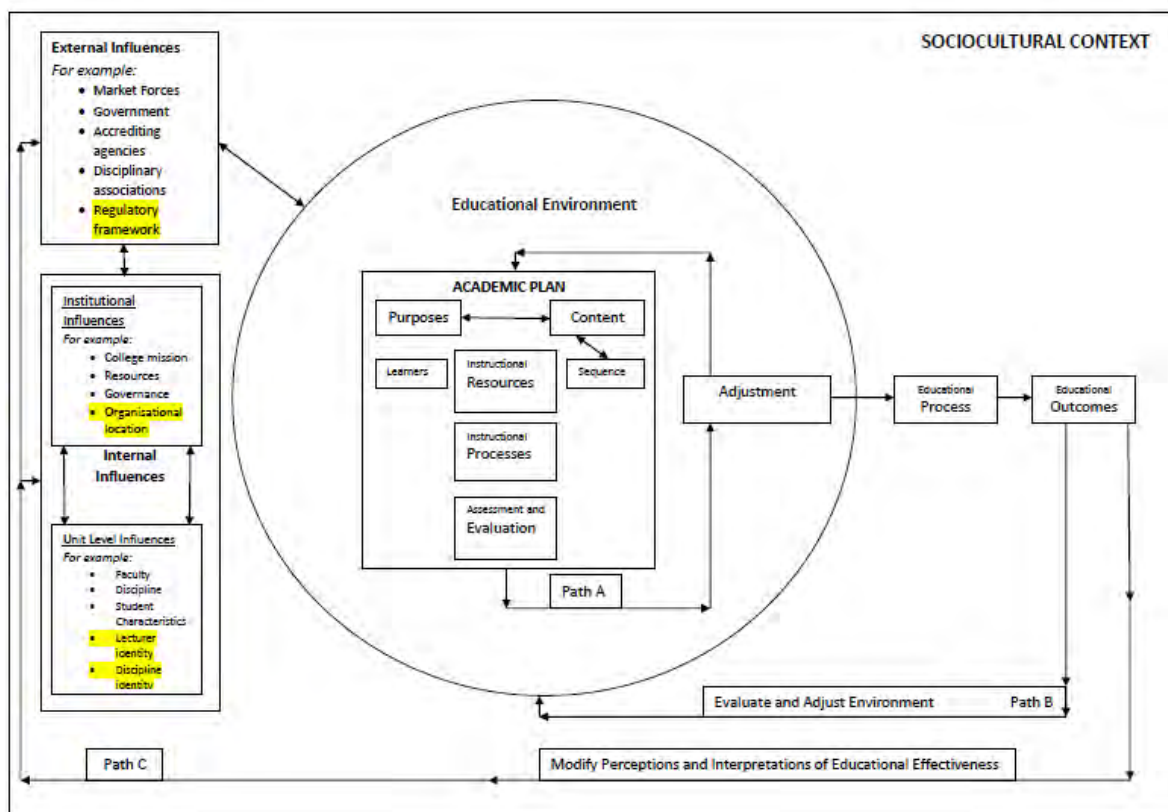


Figure 9.1. Extensions to Lattuca and Stark's curriculum model (2011).

Also significant are the silences identified in the study with regard to the RM curriculum in IS. These gaps include coverage of ethics and several new approaches to research in IS, such as DSR, critical realism, and mixed methods. Lattuca and Stark's (2011) academic-plan view of curriculum is useful in focusing on the decision points in designing and implementing a curriculum, but it would be instructive to have a category to cover the content matter that the curriculum designer specifically decided not to include. Thus, the curriculum designer would be expected to articulate and make explicit topics that will be excluded. Clearly, one is not arguing for everything outside the curriculum to be specified but only excluded topics that were possible candidates for inclusion. This may assist in providing a richer sense of the possibilities and choices made; the limited mention or absence of topics such as ethics, DSR, and the mixed methods paradigm would thus need to be justified. A more explicit consideration of the curriculum design decisions by the module designer would be enabled.

In summary, the primary aspect of the curriculum as academic plan in the adapted Lattuca and Stark (2011) model has been a useful framework in analysing RM curricula. The eight categories of the academic plan model align well with the findings discussed in chapters 6, 7 and 8 and the key themes discussed earlier in this chapter. The suggested extensions and additional emphasis to aspects of the model for RM curricula are all related to the external and internal influences on curriculum. Thus, in the new model, lecturer and disciplinary identity emerge as strong, more specific internal influences. The broad influence of the global IS academy, the IT industry as the world of practice and broader societal issues are included as external influences. Furthermore, the possibility of an additional category under content to account for possible relevant topics that have been excluded would enrich the model.

9.8 Concluding Remarks

This chapter has identified and discussed five key themes that have emerged from Chapters 7 and 8 in relation to the literature. These themes of paradigmatic orientation, pedagogical orientation, lecturer identity, key research stakeholders, and disciplinary identity, all drawn from the data, have been crystallised and compared to themes from the literature discussed in Chapters 2 and 4. Extensions and refinements to Lattuca and Stark's (2011) curriculum framework have been suggested.

The next chapter continues the process of refining the key themes and categories, outlining a model that offers some explanatory power in answering the question: Why the IS RM curricula are the way they are? The structure–agency relationship between disciplinary culture and RM lecturer identity will be shown to offer a key explanation for the diversity in evidence across the PG research sector.

Chapter 10

Towards an Information Systems Research Methodology Curriculum

Identities-in-Dialogue Model

10.1 Introduction

This chapter initially summarises the themes that have evolved during data analysis of the curriculum documents, the VFG and the cases. This summary charts the emergence of two key themes, namely disciplinary identity and RM lecturer identity. The construct of identity as the common base of disciplinary and RM lecturer identity is introduced with reference to the literature.

Disciplinary identity and RM lecturer identity are discussed in terms of their implicit and explicit components and the dialectical relationships between the themes are explained and illustrated in the identities-in-dialog model and the structure-agency matrix. These models form the primary contribution to knowledge of the thesis. The findings of the study are drawn together in these models to explain the primary themes, together with their components, that influence the shape that a specific instance of the RM curriculum will take. It is suggested that this instantiation of a RM curriculum can be conceived of as a constructed curriculum identity.

The chapter is organised as follows. The emergence of the key themes of disciplinary and RM lecturer identity is summarised. The construct of identity is then discussed in terms of various understandings of the construct and adoption of a useful analytical framework for group identity. The subsequent section summarises the key explicit and implicit components identified in the study under the themes of RM lecturer identity and disciplinary identity. A list of aspects that were identified as silences is also provided, including the missing critical paradigm. The components are arranged into a model that seeks to explain the dialectical process between RM lecturer identity and disciplinary identity whereby a specific RM module is instantiated. The model is illustrated and the implications for practice are considered. I also argue for a re-conceptualisation of the importance of the RM curriculum to the formation and evolution of disciplinary identity. The chapter ends with some concluding remarks, including limitations, recommendations for practice and suggestions for future research.

10.2 Summary of Themes from Data Analysis

The first step is thus to take stock of the analytical journey that has been travelled thus far. The descriptive sectoral analysis of the intended RM curricula (Chapter 6) has identified a number of initial themes, including

- dominant paradigmatic orientation of the RM module
- degree of specialisation in a set of related methodologies/methods
- degree and nature of focus on the IS practitioner
- degree of linkage of the RM module to actual research project
- dominant pedagogical orientation of the RM module
- silences in the data.

The thematic analysis of these themes in relation to the intended RM curricula (Chapter 7) resulted in a refinement of the initial themes into fewer, more abstract overarching themes, namely:

- Paradigm, purpose, content, and organisation
- Pedagogy and materials
- Assessment
- Research stakeholders.

In the analysis in Chapter 8, two of the earlier themes emerged as key choices to be made by the RM lecturer that shape the curriculum:

- Degree to which the RM module is linked to the content of students' actual research projects
- Paradigmatic orientation of the RM module in terms of the degree to which a range of paradigms are presented.

Furthermore, the agency of the RM lecturer, as a product of their personal backgrounds, qualifications, and research experience, emerged as an overarching influence on the shape and form of the RM curriculum.

Chapter 9 teased out the relationship between the themes that had emerged from the data analysis (the sectoral overview in Chapters 6 and 7, exemplified in the two cases in Chapter 8) and the literature (Chapters 2 and 4). The key themes that have emerged from this dialogue include:

- paradigmatic orientation of the RM lecturer and the module
- pedagogical orientation of the RM lecturer
- disciplinary identity
- lecturer identity.

The treatment in Chapter 9 addresses the third critical question to some extent, but this question is more directly addressed in this chapter. Why are IS RM curricula the way they are? What explains the diversity of curricula across the sector, as identified in Chapter 6 and 7 and exemplified in Chapter 8? How does a specific RM curriculum become instantiated?

In Chapter 4, O'Donovan and Roode's (2002) ontological framework for representing the discipline of IS was briefly discussed. This framework claimed the interaction between the cultural structure (conventions, accepted practices, and disciplinary norms) and contexts of significance (academics, networks, and projects) in the dynamic evolution of the identity of the discipline. The framework suggests the possibility of a further realignment of the four themes that remained at the end of Chapter 9 into two primary constructs:

- Disciplinary identity—an instance of the cultural structure
- RM lecturer identity—an instance of the context of significance.

Disciplinary identity would thus include the paradigmatic orientation of the RM module and personal paradigmatic orientation would be subsumed within the construct of RM lecturer identity. Pedagogical orientation would fit under the RM lecturer identity construct rather than being a separate theme.

It is significant that the construct of identity has emerged as pivotal to an understanding of RM curricula in IS. Chapter 2 described the various quests for disciplinary identity and legitimacy in the evolution of IS, and this construct has also been identified in the analysis chapters, especially Chapters 8 and 9. The influence of the RM lecturer was also identified as significant as the analysis unfolded in Chapters 8 and 9.

10.3 Identity as a Social Construct

The scholarship of identity covers a range of disciplines, and the construct is variously described and contested (Castells, 2011; Gee, 2000). The literature distinguishes broadly between individual and group identity, although some attempts at definition include both, for example, where identity refers to both the distinctive characteristics of an individual and those shared by members of a group (Weinrich & Saunderson, 2005). There is broad agreement that identity is both relational and contextual as it is constructed in relation to others and within specific contexts (Weinrich & Saunderson, 2005). Gee (2000) describes four distinctive though related ways to view identity, with varying degrees of agency: Nature-identity refers to a biological view that reflects a state that is beyond the agency of the individual; institution-identity is a role or position allocated and authorised by institutions; discourse-identity is the recognition of individual traits by others; affinity-identity refers to practices and experiences that accrue due to the individual's active affiliations with groups. Individuals have unique combinations of these views and the combinations are dynamic over time (Gee, 2000). Individual identity is thus an amalgam of individual biological characteristics and behavioural traits as well as relations with institutions, groups, and other individuals.

The role of RM lecturer is clearly a position allocated and authorised by the institution. The academic qualifications and RM experience of the allocated lecturer would have been used as criteria for this allocation. However, the lecturer brings to this role a range of experiences and practices, including experience of research, teaching and PG supervision and examining, as well as attendance at RM modules. Previous IT industry and work experience also influences the lecturer's perspective on who the research stakeholders might be. In addition to these affinity-identities, RM lecturers will exhibit a range of individual traits and assumptions, including paradigmatic and pedagogical orientations, as well as implicit and recurrent practices.

A useful framework for understanding group identity was developed by Abdelal (2009). This framework enables comparisons of different types of identity. Abdelal, Herrera, Johnston and McDermott (2006) thus conceptualise identity as a variable, either independent (influencing something) or dependent (influenced by something). Identity varies in terms of content (the meaning of the collective identity) and contestation (the extent of agreement on content) (Abdelal, 2009). The content dimension has four components, namely, constitutive norms (formal and

informal rules that specify group membership, either consciously or implicitly), social purposes (goals shared by group members), relational comparisons (views of other groups), and cognitive models (common worldview or ways of seeing and reasoning) (Abdelal, 2009).

The identity framework posited by Abdelal (2009) has substantive links with the earlier discussion of disciplinary identity in Chapter 2 and the discussion of Trowler's (2008) TLR and Hounsell and Anderson's (2009) WTPs. Specifically, the IS quests for some defining characteristic that is unique to the discipline represent attempts to establish formal rules of belonging. The TLR and WTPs can be seen as more implicit norms, values, and beliefs that characterise membership of the discipline as well as having social purposes as sets of shared values and beliefs. The recurring attempts to distinguish IS from related disciplines such as CS and organisational studies represent instances of relational comparisons, whereby one defines oneself in terms of what one is not. Finally, the persistent thread of paradigmatic orientation in the analysis chapters and the historical paradigm wars discussed in Chapter 2 illustrate the cognitive model dimension. The contestation dimension seems almost to have been selected with IS in mind in view of the multiple areas of contestation in IS that were charted in Chapter 2; these areas include the Europe–US polarity, rigour versus relevance, paradigm wars, focus versus diversity and academic versus practitioner. This backdrop of individual and group identity will be the context for more detailed discussion of the constituent components of RM lecturer and discipline identity.

10.4 Constituting the Identities Influencing the Research Methodology Curriculum

It will be useful to summarise the influencing components that have been identified in the analysis chapters with regard to RM lecturer identity and disciplinary identity (see Tables 9.1 and 9.2 below). A distinction is made between components that are explicit and visible (analogous to the overt, formal, written curriculum) and those that are less explicit or hidden. Table 9.1 summarises the explicit components that have been identified in the study in no particular order.

Table 9.1		
<i>Explicit Components Influencing RM Lecturer and Discipline Identity</i>		
	<u>RM Lecturer Identity</u>	<u>Disciplinary Identity</u>
Explicit	Academic qualifications Research experience IT industry experience Supervision experience PG examiner experience Teaching experience Influence of PG supervisor Perspective on research stakeholders Participation in RM modules, seminars, and workshops	Faculty location in university structure Academic staff profile Institutional history of RM history Repository of RM resources Institutional module templates Departmental policies Perspective on research stakeholders

The explicit components constituting RM lecturer identity include individual academic qualifications as well as experience of teaching in general, teaching RM, research, supervision, dissertation examination, and IT industry and work experience. These components were identified in the case analysis in Chapter 8. The influence of the philosophical and paradigmatic orientation of the lecturer’s PG supervisor was also identified in the interview data in Chapter 8. Individual attitudes to the relative importance of academia, industry, and wider society as research stakeholders in curriculum design and enactment were discussed in the same chapter. Finally, a miscellaneous component includes the individual’s means of entry to RM, including knowledge and skills gained from research modules, seminars, and workshops. Frank specifically mentioned the importance of this aspect in the interview data from Chapter 8.

Disciplinary identity is influenced by the location of the discipline within the university structure, discussed in Chapter 5. The overall profile of academic staff, departmental policies and ethos were mentioned in the interview data in Chapter 8. Specific RM components comprising disciplinary identity include the institutional history of RM modules offered (for example, Lyn identified the departmental regime at QualU in Chapter 8), module outlines/syllabi/templates, existing resource material (notes, assignments, and past projects), and textbooks that have been prescribed and recommended in the past. The discipline as a whole will also have a perspective on the relative importance of academia, industry, and wider society as research stakeholders.

In addition to these explicit components of the two major constructs, there are a number of components that are less visible and more implicit. Table 9.2 summarises these implicit components.

Table 9.2		
<i>Implicit Components Influencing RM Lecturer and Discipline Identity</i>		
	<u>RM Lecturer Identity</u>	<u>Disciplinary Identity</u>
Implicit	Paradigmatic orientation Pedagogical orientation Conceptions of: <ul style="list-style-type: none"> • Research • Teaching RM • Research students Trowler's internal TLR (recurrent practices, implicit theories, tacit assumptions, and discursive repertoires)	Trowler's TLR (tacit assumptions, implicit theories, recurrent practices, conventions, discursive repertoires, and power relations) Hounsell and Anderson's WTP (ways of thinking and practising)

These less explicit components influencing the identity of the RM lecturer include personal paradigmatic and pedagogical orientation (persistent themes in Chapters 6, 7, and 8) as well as the lecturer's conceptions of research, teaching RM, and research students (discussed in the case analyses). Some of Trowler's (2008) eight moments of TLR can be seen as individual identity indicators, including recurrent practices, implicit theories, tacit assumptions, and discursive repertoires. Intersections of these generic moments with the more specific components of paradigm, pedagogical orientation, and conceptions can be seen; the generic moments are included to cover implicit components that are not listed.

Disciplinary identity is indicated by Trowler's (2009) eight moments of departmental TLR, including tacit assumptions, implicit theories, recurrent practices, conventions, discursive repertoires, and power relations. These were first introduced in Chapter 2 and then illustrated in Chapter 9. Similarly, Hounsell and Anderson's (2009) construct of WTP of the discipline is also an indicator of disciplinary identity.

Finally, certain themes received minimal mention in the various module documents, focus group discussion, and interviews and are thus conceptualised as silences. These include

- ethics and RM
- practitioner research

- the relatively recent approaches to research such as DSR, mixed methods and critical realism, and
- the critical paradigm.

These silences form a backdrop to the explicit and implicit components listed above. In time, they may emerge as new components in the model as it evolves. These silences represent aspects of the hidden (values, beliefs, and ideologies that are invisibly assumed) and the null curriculum (topics specifically and consciously omitted) of RM. The silences around the first three aspects have been discussed earlier in the thesis. Some elaboration on the missing critical paradigm is, however, now necessary.

The UG–PG curriculum disconnect is widely acknowledged and was identified as one of the practical challenges for teaching RM in Chapter 6. However, this disconnect may speak to wider issues of identity. At UG level, students are generally trained in the methods and practices of the IS industry, including requirements elicitation, modelling of business problems, and technical methods of developing solutions (prototypes). The primary purpose of the UG programme is thus to produce graduates skilled in meeting the needs of the IT industry, a functional and utilitarian goal. Critique and consideration of the beneficiaries of this utilitarian role is muted at best.

At the PG level, the predominantly quantitative approaches covered in the RM modules in public universities may be seen to continue this supportive, utilitarian role. The dominant mode of research approach in quantitative modules is testing existing theories such as TAM, IS continuance, and UTAUT for confirmation or possible extension. A common approach is to test the theory in a new context. Universities that espouse a predominantly qualitative approach to research often focus on interpretive case studies as the methodology of choice. This methodology often seeks best practice from the cases, once again fulfilling a function supportive of the IT industry. Studies that interrogate the interests served by technologies or the agendas behind the introduction of new technologies in organisations are few and far between. It would seem that the RM curricula, notwithstanding the acknowledged gaps between UG and PG programmes of study, fulfil a role largely supportive of industry practice.

10.5 Identities in Dialogue

The primary constructs of RM lecturer identity and disciplinary identity with their indicative components are mapped into two separate groups in Table 9.3 below, using a continuum of weak to strong agency for each component. The indicative components are not presented in any order of relative influence. Each specific component, for example, academic qualifications, would be rateable on a weak to strong continuum. The combination of ratings would provide aggregate RM lecturer identity and disciplinary identity ratings along the weak–strong continuum. Explicit and implicit components are grouped separately, and, in addition, silences are included as a third dimension.

Table 9.3		
<i>Identities in Dialogue Model</i>		
	<u>Agency</u>	<u>Structure</u>
	RM Lecturer identity	Disciplinary identity
Explicit	Academic qualifications Research experience IT industry experience Supervision experience PG examiner experience Teaching experience Influence of PG supervisor Perspective on research stakeholders Participation in RM modules, seminars, and workshops	Faculty location in university structure Academic staff profile Institutional history of RM history Repository of RM resources Institutional module templates Departmental policies Perspective on research stakeholders
Implicit	Paradigmatic orientation Pedagogical orientation Conceptions of <ul style="list-style-type: none"> • Research • Teaching RM • Research students Trowler’s internal TLR (recurrent practices, implicit theories, tacit assumptions, and discursive repertoires)	Trowler’s TLR (tacit assumptions, implicit theories, recurrent practices, conventions, discursive repertoires, and power relations) Hounsell’s WTP (ways of thinking and practising)
Silences	Ethics and RM Practitioner research Recent topics such DSR, mixed methods and critical realism. Critical paradigm	

The identities-in-dialogue model locates a range of influences under the broad constructs of RM lecturer identity and disciplinary identity, representing instances of the macro constructs of individual agency and structure respectively.

A model is a simplification of reality in an attempt to better understand elements in the real world and would thus include inevitable reduction and simplification. The components are placed where they seem to fit best and some appear in multiple places; it is acknowledged that an argument could be made for some to be located in different places. It will be noted that lecturers' perceptions of the relative importance of key research stakeholders is repeated as a disciplinary identity component, where the general disciplinary perception of these stakeholders is taken into account. As a further example, paradigmatic orientation has been placed as an implicit component in the lecturer's identity, but it could be argued that it should be categorised as an explicit component, as many RM lecturers would have a clear conception of their own paradigmatic position. Furthermore, it could be claimed that an individual's paradigmatic orientation is indirectly part of the wider disciplinary identity. Such complexities are acknowledged, but in the interests of explanation, the simplified form of the model is based on the predominantly best fit for each component.

The model posits a dialectical relationship between RM lecturer identity and disciplinary identity. Thus, if a lecturer or team of lecturers is allocated responsibility for a RM module in a particular year, the nature and form of the RM curriculum would emerge largely as a result of the interactions between the various components. In broad terms, the aggregate of the components forming the lecturer identity would constitute the RM agency of the individual lecturer, rated from weak to strong. Similarly, the disciplinary identity is an aggregate of its components. In simple terms, an experienced RM lecturer with extensive qualifications and research in addition to supervision and examiner experience in the discipline would have greater RM agency in this relationship than a newly appointed lecturer with qualifications from a cognate discipline such as CS and relatively limited research output, supervision, and examiner experience.

It is claimed that the disciplinary identity of a university department can also be categorised along a continuum of RM culture from weak to strong, dependent on the constituent components. Thus, a newly formed department of IS would have limited history, resources, and institutional memory in comparison to a well-established department that has built up a particular disciplinary

identity over time. In this study, for example, QualU and QuantU had developed strong identities through their academic staff profile, research output, niche projects, PG outputs and history.

10.6 Applying the Identities in Dialogue Model: the Structure-Agency Matrix

The instantiation of a specific RM module is a product of the dialogue between the constructs of the RM lecturer and discipline identity and the respective components of these constructs. In general, a RM lecturer enjoys varying degrees of autonomy in designing and enacting a module, within the structural constraints of the department. Some departments may impose managerial limitations on this autonomy by insisting on adherence to official module templates that have been devised and approved as the generic form of the module, in compliance with the regulatory framework. Others may allow greater autonomy to the RM lecturer provided that the specific module instantiation is broadly in line with the official module template. Specific choices of sequence, textbook, resources, and teaching methods may be similarly constrained or not, depending on the departmental and institutional culture.

The individual RM lecturer will thus design and enact the specific RM module within the disciplinary culture of the institution. The strength of the lecturer's identity as an RM lecturer, drawing on the range of influencing components, interacts with the array of forces representing the strength of the disciplinary identity. Lecturer RM agency will also be influenced by the personal attributes of the lecturer, but the model does not attempt to factor in individual personality as a factor. Figure 10.1 charts the possible permutations of weak and strong RM lecturer and discipline agency as a four quadrant model. In the model, RM lecturer agency runs horizontally and disciplinary identity runs vertically.

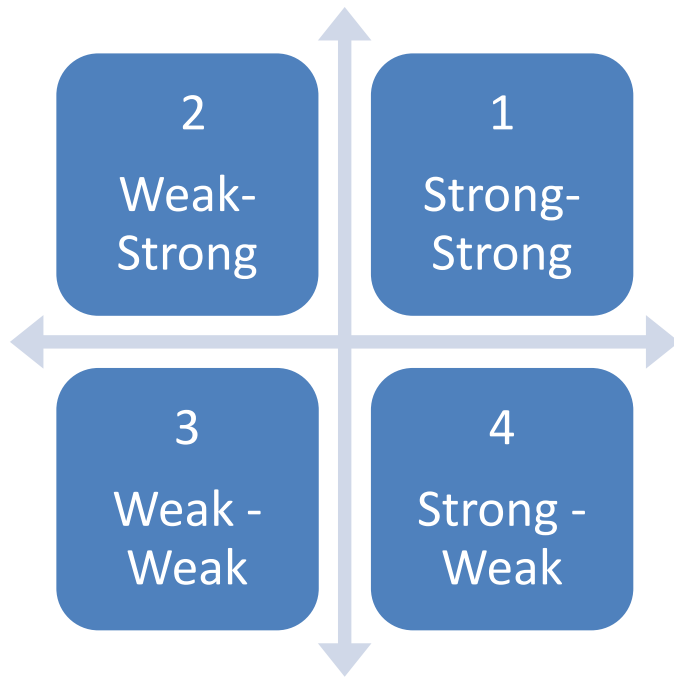


Figure 10.1. RM Structure-Agency matrix.

Some examples may help illustrate the operation of the matrix. Firstly, two possible scenarios will be considered which exemplify quadrant 2, where a lecturer with weak RM agency works in a strong disciplinary culture. A newly appointed lecturer in IS tasked with lecturing the RM Honours module in a department with a strong disciplinary culture and well-established RM culture would probably adopt the existing RM curriculum, possibly making only relatively minor adjustments in assessment and assignment tasks. Another scenario is that of a RM lecturer with primary qualifications outside of the discipline of IS, for example, in CS. The relatively weak RM agency of the lecturer in a strong disciplinary culture would suggest wholesale adoption of the previous RM curriculum. The opposite extreme is shown in quadrant 4, where a RM lecturer with strong RM agency works in a relatively weak disciplinary culture. The model would suggest that the lecturer would design and enact the curriculum in line with their personal views on how RM should be delivered. A possible scenario in this quadrant might be one where the lecturer has a strong RM base in a related discipline rather than in IS, with the possibility of flavours of the related discipline being introduced. An alternative scenario is one where an experienced IS RM lecturer is allocated to teach RM within a relatively newly formed department.

The remaining quadrants 1 and 3 offer a range of possibilities as they both have equivalent lecturer and disciplinary RM agencies. In quadrant 3, the weak–weak interaction would suggest that the lecturer would need to draw on other sources for guidance. The RM MOs from other institutions or close adherence to a widely used prescribed textbook are possible courses of action. In quadrant 1, the strong–strong interaction yields a further pair of possibilities. If the two dimensions are in alignment, then the RM curriculum would benefit from the strong history supplemented by the strong individual RM agency. If the two dimensions are in opposition, then conflict is possible, ranging from destructive to constructive. A largely destructive outcome could occur if aspects of value in the disciplinary culture are changed or lost as the RM lecturer designs and enacts the curriculum. A predominantly constructive outcome would be where RM lecturer agency further strengthens the disciplinary RM culture.

The operation of the matrix will be illustrated briefly below with examples drawn from the VFG discussion and the case data.

10.7 Illustration of the Identities-in-Dialogue Model and the Structure-Agency Matrix

In Chapter 5, the operation of the VFG discussion was described. All participating universities were invited to participate in a VFG discussing the teaching and learning of RM, and 12 RM lecturers representing eight universities signed up. The facilitator represented a ninth university. The discussions lasted for eight weeks, but it was notable that the distribution of posts was skewed. Despite all participants being anonymous, some of the participants made no comments at all, despite frequent attempts by the facilitator to draw brief comments from everyone. In an attempt to get some factual information, such as textbook use and the assessment strategies used, a sub-group of the VFG comprising non-posters was formed; however, none of the non-posters responded. This sub-group represented largely the smaller IS departments across the country. In terms of the RM structure-agency matrix, it is speculated that some of these silent participants and their disciplinary culture could have been located in the weak–weak (quadrant 3) or weak–strong (quadrant 2) RM structure-agency quadrants.

The VFG discussion operated largely as a discussion between four RM lecturers from three institutions. The strength of opinions expressed by these participants and their descriptions of the practices at their respective institutions would suggest a location in quadrant 3 (strong–strong). In

most cases, the RM lecturer and discipline identity were in alignment, although an exception was noted where strong RM lecturer agency questioned aspects of a strong disciplinary structure.

Some brief illustrations of the RM agency of these active participants will provide some texture to the identities-in-dialogue model. Frank from QuantU would be classified as having strong RM agency (senior academic, strong research profile, national recognition and strong record of supervision and examination in IS) and being in alignment with the strong disciplinary culture at QuantU. Similarly, Lyn at QualU would be classified as having strong RM agency (senior academic, strong research profile and strong record of supervision and examination in IS), largely in alignment with the strong disciplinary culture at QualU. Both of these exemplify instances of constructive strong-strong RM agency in quadrant 1. Philip at QualU would also be classified as having strong RM agency (senior academic, emerging research profile, and supervision and examiner record) within a strong disciplinary culture. However, he represents an example of strong RM agency partly at odds with aspects of the disciplinary culture. Openly critical of some of the embedded practices at QualU, he exemplifies the potentially constructive tension between strong RM lecturer agency and a strong disciplinary RM culture. It is also possible that his critique of aspects of the strong disciplinary culture and its practice could be seen as destructive by members of the dominant research culture.

A final example is that of Gary from QuantU, who registered for the VFG discussion but did not activate his online persona at all, despite repeated requests. He could be classified as having weak to moderate RM agency (relatively new RM lecturer, working on a doctorate, emerging research and supervision record). He would fall into quadrant 2 (weak RM lecturer agency in a strong disciplinary culture) and the interview data place him as being mentored and supervised by Frank. As the RM lecturer in training, he exemplifies adoption of the dominant disciplinary culture at QuantU.

The model and the matrix thus offer an elegant means of explaining possible influences on the shape of the RM curriculum at a specific institution. They are both largely descriptive as models. Possibilities of predictive power include as a broad guide to academic managers in their selection of academics or academic teams to bear responsibility for the RM curriculum. Clearly, such selection processes would have considered aspects of lecturer RM agency directly, for

example, research experience, supervision, and examiner record, but the model provides an explicit articulation of the range of influencing aspects that could also be considered.

10.8 Research Methodology Curriculum Identity as Product of the Structure-Agency Matrix

The instantiated RM curriculum that emerges from the interaction of RM lecturer identity and disciplinary identity will itself have a unique identity. This identity can be conceptualised in terms of the understanding of identity discussed earlier. The content (topics, learning objectives, resources, and purpose) and pedagogy (teaching strategies and assessment) that are chosen for a particular module represent the constitutive rules of the curriculum. The decision points in Lattuca and Stark's (2011) curriculum framework can be used to constitute the curriculum. The paradigmatic and pedagogical orientations represent the cognitive model or world view of this constructed curriculum identity. The instantiated RM curriculum will have affinities with or differences from other RM curricula along philosophical (such as positivist, interpretive, critical, or critical realist), approach (quantitative, qualitative, or mixed) and methodology (such as action research, case study, survey, or ethnography). The RM curriculum can thus be conceived as having an identity of its own, forged primarily from the interaction between RM lecturer agency and discipline structure. This curriculum identity shapes the research identities of students and its functions deserve careful consideration.

The complex nature of the interactions between the RM curriculum identity and the discipline identity of IS is discussed in the next section. It will be argued that the RM curriculum identity impacts and is impacted on by the evolving overall discipline identity

10.9 Importance of the Research Methodology Curriculum to the Information Systems Discipline

This study has explored the nature and form of PG RM curricula in IS. One of the key findings is the diversity in purpose, content, resources, and assessment strategies across the public university landscape. This diversity resonates with the historical debates over the identity of IS as a discipline and the numerous and varied quests to find a centre in a paradigm, methodology, theory, relevance or core concepts, as discussed in detail in Chapter 2.

The identities-in-dialogue model and RM structure-agency matrix were constructed to better understand the key influences on the RM curriculum. An argument has been made that the form and nature of the RM curriculum is a dynamic product forged from the interaction between RM lecturer agency and disciplinary structure. A specific instantiation of an RM curriculum has its own, unique curriculum identity as the product of this interaction. Furthermore, RM curricula are influenced by the canon of existing research, since subject material and research exemplars are drawn from the existing body of knowledge. Novice researchers thus have their research thinking shaped by existing research in the discipline. Lee (2004) states it powerfully: “An IS researcher is a product of IS research” (p. 31).

Conversely, it is claimed that the identity of the IS discipline evolves out of research choices of topic, approach, paradigm, methodology or theory (Boland & Lyytinen, 2004), echoing Donald’s (2002) conception of an academic discipline as comprising theories and methods of inquiry and validation. This disciplinary identity thus exhibits the paradox of consistent characteristics that distinguish it from other fields, yet the identity is simultaneously in a dynamic state of flux as research choices change over time. Boland and Lyytinen emphasise the “recursive, dialectical process of our identity construction...as a set of knowledge production and dissemination practices that define what information system researchers are” (p. 56). The identity of a discipline evolves from the knowledge production and dissemination practices that are constructed from research design choices that are partially shaped and influenced in RM curricula.

The RM curriculum forms a core component of students’ preparation for conducting research. The nature and form of the RM curriculum thus not only has an influence on the type of research that will be conducted as part of the PG study but also more generally influences future research. Furthermore, the research that is conducted and published as theses and journal articles forms a core element of the identity of the discipline. Although the chain of influences is long and would include other influences, such as research supervision, the canon of published work, and developments in the IT industry, the RM curriculum has a not insignificant influence on disciplinary identity. Diagrammatically, these relationships are depicted in Figure 10.2:

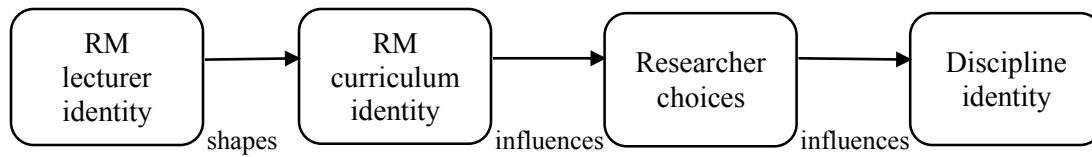


Figure 10.2. Influences on discipline identity.

Thus, the RM lecturer shapes the RM curriculum, which influences students' future research choices, which indirectly influence the future identity of the discipline. The relationships also operate in the reverse direction:

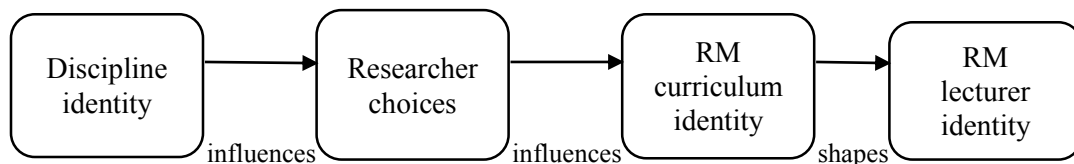


Figure 10.3. Influences of discipline identity.

The disciplinary identity in the form of existing research influences researchers' choices, including those of RM lecturers, who shape the RM curriculum.

The relationship between the identities of the discipline, RM lecturer, and RM curriculum can be represented as a cycle, as shown in Figure 10.4.

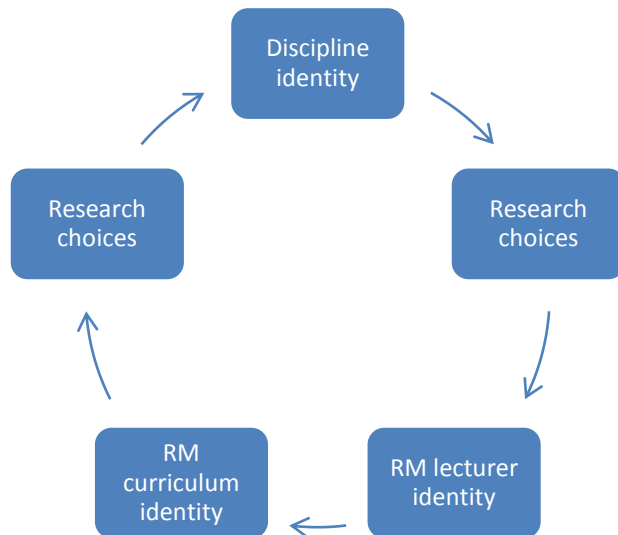


Figure 10.4. Cyclical influences of discipline, RM lecturer and RM curriculum identity.

The identity of the discipline, as exemplified in the existing research canon, influences the research choices of all researchers, including those of the RM lecturer. The identity of the RM lecturer is informed by the range of research choices made by current researchers, often in recent work, as well as their own research choices. This identity in turn shapes the identity of the RM curriculum that is instantiated for novice researchers in a particular year. The RM curriculum identity shapes novice researchers' research choices for their theses and future research, which in the long run will inform the evolving identity of the discipline.

10.10 Concluding Remarks

This chapter has summarised the main themes emerging from the thematic analysis in Chapter 9 and synthesised these themes into two primary constructs, namely, RM lecturer identity and disciplinary identity. A framework for understanding the broad construct of identity was provided as the context for the unpacking of the constructs of RM lecturer and discipline identity. The various components influencing the RM agency of both of these constructs were summarised and described in an identities-in-dialogue model, culminating in discussion of the construct of a RM curriculum identity. The four permutations of the RM agency of the lecturer and discipline were plotted on a RM structure-agency matrix and some of the possible scenarios were discussed. Finally, a cycle of influences was constructed to illustrate the relationships between the identities of the discipline, the RM lecturer and the RM curriculum.

In the following sections, which function as the final conclusion to the thesis, the contribution to knowledge, implications for practice, the limitations of the research, and possibilities for future research are briefly discussed in turn.

10.10.1 Contribution to knowledge

As discussed in Chapter 1, a theoretical contribution to knowledge can take a number of forms, namely extension of existing theory or development of new theory (Sutton & Staw, 1995). Gregor (2006) took a broad view of theory, including conjectures, frameworks and models, in constructing a taxonomy of five distinct theory types in IS. Gregor emphasises that the taxonomy is not a hierarchy and that comparison between types is of no value. Each theory type has a specific value-add to the arsenal of theories in IS. Gregor's (2006) five distinct theory types are:

- Describe and analyse – initial frameworks and descriptions of new research phenomena, including exploration of relationships and associations.
- Explain – seeking to explain why a specific phenomenon is the way it is.
- Predict – strongly causal, often in the form of laws.
- Explain and predict - relationships expressed in causal terms as a grand theory at a general level.
- Design and action – prescriptions on how to design and test an artefact.

As discussed in Chapter 2, Gregor (2006) also distinguishes between meta-theories (theory of theories), grand theories and mid-range theories (limited application in specific context, often appropriate for an applied discipline). Grover and Lyytinen (2015) distinguish between data-driven research with a practical focus, mid-range theory where existing theories are adapted and tested in specific contexts and blue ocean theory which emphasises theory building.

This study used Lattuca and Stark's (2011) curriculum framework to structure the data analysis. Themes that were identified in the data analysis enabled extensions to the framework, adding RM lecturer and discipline identity to the framework. Furthermore, the theoretical construct of a RM curriculum identity was created to conceptualise the RM curriculum.

An identities-in-dialog model was developed, explaining the range of influences that inform the instantiation of a specific RM curriculum at a particular university. A structure-agency matrix was also developed to illustrate the relative strengths of RM lecturer and disciplinary identity in RM curriculum instantiation. The narrative uses empirical data from the cases to illustrate the explanatory potential of the matrix and model. In terms of Gregor's (2006) five theory types, the model and matrix are an example of the Describe and Analyse theory type since they provide an initial explanation of the phenomenon that can be tested in future research. The contribution in this study could be classified as blue ocean theory in Grover and Lyytinen's typology.

10.10.2 Implications for practice

This study has followed an interpretive approach in seeking to understand the phenomenon of the IS RM curriculum. The primary intention was thus not to inform practice directly, but some implications for practice have emerged indirectly. Firstly, the identities-in-dialogue model and the RM structure-agency matrix could be used by department heads in selecting a RM lecturer. The model and matrix provide a number of influencing components that could be used and adapted as selection criteria applicable to the specific context of the institution. Secondly, Lattuca and Stark's (2011) model of the curriculum as extended in Chapter 9 would be a useful tool for the RM lecturer in designing the IS RM curriculum. The model provides a conceptualisation of the various aspects involved in curriculum design and enactment and a holistic understanding of linkages between the components. Thirdly, Chapter 2 provides an overview of the historical evolution of IS as an emerging discipline seeking an identity. It is hoped that this chapter could be used as a basis to introduce these topics to IS research students starting out on their journeys as researchers.

Finally, in considering the conceptualisation and learning of research, a number of useful thinking tools have been identified. These could be useful as teaching tools for research students. The methodology model developed by Cecez-Kecmanovic (2011) provides a flexible framework of research design choices that supports methodological pluralism and could also be used in RM modules. In addition, Gowin's Vee (Stewart, 1997) is a practical heuristic that could assist neophyte researchers in considering the alignment and relationships between philosophy, epistemology, and methodology.

10.10.3 Limitations of this research

All studies have limitations that need to be articulated. A number of the limitations in this study are methodological and have been discussed in Chapter 5. For example, the study does not claim to be representative of the IS PG RM curricula in South Africa, and the findings need to be considered carefully for transferability. Delimitation of the study to public universities in South Africa is a further limitation to transferability. Another delimitation of the study was the conscious decision to focus primarily on the perspective of the RM lecturer. Student perceptions of the RM curriculum were thus not obtained.

In qualitative research, and arguably in all forms of research, the researcher has an influence on the possible and achieved outcomes of the study. In this case, the researcher's own experience as a RM lecturer served as a motivation for the study but also tended to divert focus from the curriculum to issues of practitioner evaluation. A conscious effort was made to minimise these researcher tendencies, but it is certain that some evidence of practitioner interest will remain.

10.10.4 Possibilities for future research

This study has drawn on documentary evidence across the public university sector and two selected cases in developing an initial model explaining the reasons for the diverse RM curricula at postgraduate level in South Africa. The possibilities for similar future research include:

- extending the study by considering other specific IS cases of interest, such as universities offering a fully integrated RM curriculum, universities that have merged with universities of technology, and IS departments housed in the Humanities;
- broadening the lens to consider formal and informal research preparation, including the role of supervisors; and
- conducting a similar analysis of the IS RM curricula at private universities and universities of technology in South Africa. The study could be further extended to universities outside South Africa.

The initial identities-in-dialog model could be tested and refined across all South African universities offering PG IS RM modules. A questionnaire could be used to determine the validity of the constructs identified as well as elicit additional refinements to the model.

This study identified the significant absence of the critical approach in all the RM curricula. Interviews and focus groups could be used to explore the reasons for this absence at public universities in South Africa.

The current study focuses on the intended and enacted PG RM curricula from the perspective of the lecturer. Student perceptions of the attained RM curriculum could be polled by means of a survey or focus group discussions. The constructs in Lattuca and Stark's curriculum framework could be used to structure the survey or focus group discussion, yielding a complement to the perceptions of the lecturers. Lecturer and student perceptions could be brought into dialog for further insights.

A brief epilogue closes the thesis, with reflections on my identity, positionality and personal PhD journey.

Epilogue: Reflections

It is widely acknowledged that a researcher following an interpretive approach should reflect on their own historicity (Myers, 1997) as well as the intellectual journey that the study has provided. Walsham (1995b) also advocates explicit reflection on one's own philosophical stance. Furthermore, research topics and choices often reflect personal quests and the emerging study is a dialogue between the data and the researcher's changing interpretations (Myers, 1997). This epilogue is my attempt to make explicit some of my assumptions at the outset and during the study and will take the form of a reflection on my personal background as an IS lecturer and researcher, as well as the motivation for and initial conceptualisation of the study.

Personal historicity

I made a relatively late career entry into academia in 2000, following early experience as a teacher of Mathematics and Computer Studies and a number of years as subject adviser for the emerging subject Computer Studies in secondary schools. My passion was for programming and solving 'wicked' programming problems, drawing on my studying and teaching of Computer Studies in a largely Computer Science orientation.

My academic qualifications show a diversity that is relatively uncommon in teachers of Computer Studies. My initial full-time studies yielded a Bachelor of Arts, majoring in English and Mathematics, followed by an Honours and Master's in English. My passion was for English literature. Part-time study continued with a Bachelor of Science, majoring in Psychology and Computer Science, followed by a Master's in Business Leadership (MBL) with a mini-dissertation on IT (the Internet as a disruptive technology). It is notable that the BSc degree did have modules in Information Systems as part of the Computer Science major, but the emphasis on IS was secondary.

In all my years of study, formal courses on RM were either not offered or not taken. The MBL included an optional RM module, but the prevailing view was that subject knowledge would be more useful than RM to a career in industry.

My early experience as a lecturer of IS included the customary coverage of undergraduate modules – I was learning the discourse and disciplinary practices as we went along. Staff shortages necessitated some lecturing at Honours level, including topics of critical reasoning and change management. The abiding sense during these lectures was of my relatively shallow IS knowledge and of myself an IS outsider trying to become an insider. Ineffably and inexplicably, I was drawn towards the RM module offered at Honours level.

My entry to the Ways of Teaching and Practicing IS research began with sharing the Honours RM module with a senior colleague (PhD in IS, but Masters' and undergraduate qualifications in Theology and experience in the IT industry). I also co-supervised an Honours project with this colleague, who acted as a mentor. Over time, I assumed increased responsibility for the Honours research modules (RM and the research project), attending every available workshop and seminar on research (including qualitative, critical, mixed methods and quantitative approaches). In addition, I shadowed another senior researcher's (D Litt) RM module for IS Honours students, under the illusion that one could simply "get" research by attending and absorbing.

My early contributions as sole RM lecturer at Honours level leaned heavily on the textbook for structure and content (for example, Leedy & Ormrod; Sekaran) as well as previous years' lecture notes and slides, with a predominantly quantitative emphasis. Student research projects were expected to be survey-driven, testing existing theories via statistical data analysis and the RM module prepared the students for these.

Further research experience was gained by supervising Honours students (approximately 4 each year) and later through sole supervision of a Masters student (predominantly quantitative study). I continued to build research experience as co-supervisor

for a PhD (quantitative) with a senior colleague (PhD in Mathematics) and co-supervised a Masters in Supply Chain Management and IS with another senior colleague (PhD in Management/Entrepreneurship). The predominant emphasis was on building research experience through the research projects of others, often leveraging off the expertise of a co-supervisor. Furthermore, the wide range of informing disciplines of the mentors is notable. Sole Masters' supervision of an equal mix of quantitative and qualitative studies followed.

Similarly, appointment as examiner of Honours research projects, MBA mini-dissertations, coursework Masters mini-dissertations and full research Masters across a range of South African universities provided additional vicarious experience of research.

Participation in Faculty Research proposal committees provided another source of research learning. Students' research proposals from Economics, Public Administration, IT, Management and Finance provided opportunities to learn from different approaches. I both enjoyed and was able to provide valuable research advice on these proposals, despite my relative personal inexperience in actual research.

Finally, the discipline of IS at Natal University (later UKZN) initially had a predominant focus on preparation of undergraduate students as systems analysts for careers in the IT industry. The Honours programme included the first brush with research. Masters' students were few and far between. Typically, the IS department had only one staff member with a PhD and industry experience was a key requirement for employment. The structural context was thus strongly geared to industry relevance, rather than research, a view shared by all the academics at the time.

Some reflections on my practice as an IS RM lecturer prior to the PhD

In terms of agency, I would classify myself as having had weak research agency in a moderately strong structural context that emphasized IT practice. The structural context of research was dominated by an unquestioned belief in the value of the scientific method and a history of survey-driven quantitative research. My approach as an RM lecturer was to adopt

the dominant approach and master the techniques of the approach, using the textbook as the primary driver of the module.

The following conceptions of research, RM and the curriculum are illustrative of my overriding assumptions at the outset of this study:

- Traditional survey-driven research that tests existing theories in different contexts was the safest route to follow.
- The RM lecturer transmitted the necessary material, for example how to design a questionnaire, drawing on research textbooks and illustrative examples of research, and encouraged best practices within the adopted research mode.
- Student preparation for seminar sessions involved pre-reading the chapter and I would lecture/discuss aspects of the chapter that were important or problematic. For example, students often struggled with constructing conceptual frameworks for their research and thus time was spent working with specific conceptual frameworks as practice exercises. The textbook was the primary driver of research preparation.
- The RM module was initially not strongly linked to the students' actual research projects. Thus, the sequence of topics followed the textbook. Over time, the RM module was adapted to link more strongly with the research projects, devoting time for students to present their problem statements, research designs and questionnaires, for example, during seminar sessions.
- Qualitative approaches were introduced as an alternative to the dominant survey-driven mode, but coverage was brief and largely theoretical, as shaped by available material in the textbook. Over time, the emphasis and time spent on qualitative approaches increased, allowing occasional students with strong personal agency to conduct qualitative studies in their projects. Assessment of these 'non-standard' projects was a challenge.
- I was dimly aware that the RM course narrowed options to a quantitative study using a questionnaire as the only / most likely form and that we were providing a "safe"

template for research that was not adequately critiqued. For most students, the quantitative survey would have seemed to be the only way to conduct IS research.

Overall, I felt more of an outsider to IS and IS research, in general, and attempted to instil in students best practices in the narrow, survey-driven approach. The abiding assumption was that mastering and refining the dominant mode of research was a means of becoming a (partial) insider.

Looking back on the study

The study charts an intellectual journey, starting from these original (mis)conceptions and arriving at the explanatory models in Chapter 10. In general, I now regard research preparation in IS as ideally starting with modest consideration of the research roots of the normative methods of analysis and development in undergraduate modules, introduction to a wide range of methodologies at Honours level and a further deepening of the philosophical and theoretical bases of research in Masters.

The reading for and writing of Chapter 2 on the historical background and intellectual quests within the IS community provided a form of vicarious induction into the roots of the discipline. I feel less of an outsider to IS, as though the consideration of the internal debates and writing up these debates has provided me with a form of personal history in the discipline.

My agency as an RM lecturer has been strengthened by the actual process of doing the research, especially as a qualitative study. Challenges and learnings not summarised in research textbooks have been engaged with – the truism that you only learn research by doing research is not a truism for nothing.

References

- Abdelal, R. (2009). *Measuring identity: A guide for social scientists*. Cambridge, United Kingdom: Cambridge University Press.
- Abdelal, R., Herrera, Y. M., Johnston, A. I., & McDermott, R. (2006). Identity as a variable. *Perspectives on Politics*, 4(04), 695-711.
- Academy of Science of South Africa (2010). *The PhD study: An evidence-based study on how to meet the demands for high-level skills in an emerging economy*. Pretoria, South Africa: ASSAF.
- Agarwal, R., & Lucas Jr, H. C. (2005). The information systems identity crisis: Focusing on high-visibility and high-impact research. *MIS Quarterly*, 29(3), 381-398.
- Åkerlind, G. S. (2008). An academic perspective on research and being a researcher: An integration of the literature. *Studies in Higher Education*, 33(1), 17-31.
- Åkerlind, G. S. (2008). Growing and developing as a university researcher. *Higher Education*, 55(2), 241-254.
- Alter, S. (2003). 18 reasons why IT-reliant work systems should replace "The IT artifact" as the core subject matter of the IS field. *Communications of the Association for Information Systems*, 12(1), 23.
- Alvesson, M., & Skoldberg, K. (2000). *Reflexive methodology*. London, England: Sage.
- Armitage, A., & Keeble-Allen, D. (2008). *Undertaking a structured literature review or structuring a literature review: Tales from the field*. Paper presented at the 7th European Conference on Research Methodology for Business and Management Studies (ECRM 2008), London, 19-20 June, 2008.
- Avgerou, C., Siemer, J., & Bjorn-Andersen, N. (1999). The academic field of information systems in Europe. *European Journal of Information Systems*, 8(2), 136-153.
- Badger, F. J., Daly, W., & Clifford, C. (2012). Educating tomorrow's clinical researchers: A review of research preparation in undergraduate education. *Nurse Education Today*, 32(7), 737-743.
- Ball, C. T., & Pelco, L. E. (2006). Teaching research methods to undergraduate psychology students using an active cooperative learning Approach. *International Journal of Teaching and Learning in Higher Education*, 17(2), 147-154.

- Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. *Journal of Social and Clinical Psychology, 4*(3), 359-373.
- Banville, C., & Landry, M. (1989). Can the field of MIS be disciplined? *Communications of the ACM, 32*(1), 48-60.
- Barnett, R. (2009). Knowing and becoming in the higher education curriculum. *Studies in Higher Education, 34*(4), 429-440.
- Barnett, R., & Coate, K. (2004). *Engaging the curriculum*. London, United Kingdom: McGraw-Hill International.
- Baroudi, J. J., & Orlikowski, W. J. (1989). The problem of statistical power in MIS research. *MIS Quarterly, 13*(1), 87-106.
- Baskerville, R. (2008). What Design Science is Not. *European Journal of Information Systems, 17*(5), 441-443.
- Baskerville, R. L. (1999). Investigating information systems with action research. *Communications of the AIS, 2*. Retrieved from <http://cais.isworld.org/articles/2-19/>
- Baskerville, R. L., & Myers, M. D. (2009). Fashion waves in information systems research and practice. *MIS Quarterly, 33*(4), 647-662.
- Bazeley, P. (2009). Analysing qualitative data: More than 'identifying themes'. *Malaysian Journal of Qualitative Research, 2*(2), 6-22.
- Bazeley, P., & Jackson, K. (2013). *Qualitative data analysis with NVivo*. Los Angeles, CA: Sage.
- Becher, T., & Trowler, P. (1989). *Academic tribes and territories: Intellectual inquiry and the cultures of disciplines*. Milton Keynes, United Kingdom: SRHE and Open University Press.
- Benamati, J. (2007). The slippery slope of MIS academia: A discussion of the quest for relevance in our discipline. *Communications of the Association for Information Systems, 18*(1), 32.
- Benbasat, I., & Zmud, R. W. (1999). Empirical research in information systems: The practice of relevance. *MIS Quarterly, 23*(1), 3-16.
- Benbasat, I., & Zmud, R. W. (2003). The identity crisis within the IS discipline: Defining and communicating the discipline's core properties. *MIS Quarterly, 27*(2), 183-194.
- Benson, A., & Blackman, D. (2003). Can research methods ever be interesting? *Active Learning in Higher Education, 4*(1), 39-55.

- Berliner, D. C. (2000). A personal response to those who bash teacher education. *Journal of Teacher Education*, 51(5), 358-371.
- Bhattacharjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly*, 25(3), 351-370.
- Bhattacharjee, A. (2012). *Social science research: Principles, methods and practices*. Open Access Textbooks Book 3. Retrieved from http://scholarcommons.usf.edu/oa_textbooks/3
- Birbili, M. (2002). *Teaching educational research methods*. ESCALATE report. Available from ESCALATE at <http://escalate.ac.uk>
- Bitzer, E., & Botha, N. (2011). *Curriculum inquiry in South African higher education*. Stellenbosch, South Africa: African SUN MeDIA.
- Blumberg, B., Cooper, D. R., & Schindler, P. S. (2011). *Business research methods*. New York, NY: McGraw-Hill Higher Education.
- Boland Jr, R. J., & Lyytinen, K. (2004). Information systems research as design: Identity, process and narrative. In Kaplan, B., Truex, D. P., Wastell, D., Wood-Harper, A.T., & DeGross, J.I. (Eds.). *Information systems research: Relevant theory and informed practice* (pp. 53-68). Boston, MA: Kluwer.
- Boote, D. N., & Beile, P. (2005). Scholars before researchers: On the centrality of the dissertation literature review in research preparation. *Educational Researcher*, 34(6), 3-15.
- Booth, C., & Harrington, J. (2003). Research methods modules and undergraduate business research: An investigation. *The International Journal of Management Education*, 3(3), 19-32.
- Boud, D., & Lee, A. (2005). Peer learning as pedagogic discourse for research education. *Studies in Higher Education*, 30(5), 501-516.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40.
- Braumoeller, B. F. (2003). Perspectives on pluralism. *Political Science and Politics*, 36(03), 387-389.
- Breuer, F., & Schreier, M. (2007). Issues in learning about and teaching qualitative research methods and methodology in the social sciences. Paper presented at the *Forum: Qualitative Social Research*, 8(1), 1-21.
- Brew, A. (2001). Conceptions of research: A phenomenographic study. *Studies in Higher Education*, 26(3), 271-285.

- Brew, A. (2003). Teaching and research: New relationships and their implications for inquiry-based teaching and learning in higher education. *Higher Education Research and Development*, 22(1), 3-18.
- Brew, A., & Boud, D. (1995). Teaching and research: Establishing the vital link with learning. *Higher Education*, 29(3), 261-273.
- Bridges, D. (2000). Back to the future: The higher education curriculum in the 21st century. *Cambridge Journal of Education*, 30(1), 37-55.
- Brown, I., & Roode, D. (2004). Using grounded theory in the analysis of literature: The case of strategic information systems planning. *ACIS 2004 Proceedings*. Paper 113. Retrieved from <http://aisel.aisnet.org/acis2004/113>
- Bryant, A. (2006). *Thinking informatically: A new understanding of information, communication, and technology*. London, United Kingdom: Edwin Mellen Press.
- Bryant, A. (2008). The future of information systems—thinking informatically. *European Journal of Information Systems*, 17(6), 695-698.
- Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, 6(1), 97-113.
- Buckley, J., Brown, M., Thomson, S., Olsen, W., & Carter, J. (2015). Embedding quantitative skills into the social science curriculum: case studies from Manchester. *International Journal of Social Research Methodology*, 18(5), 495-510.
- Burton-Jones, A. (2009). Minimizing method bias through programmatic research. *MIS Quarterly*, 33(3), 4.
- Byrne, E., & Lotriet, H. (2007). Transformation in IS education: Whose concepts should be changing? *South African Computer Journal*, 38, 2-7.
- Cameron, R. (2009). A sequential mixed model research design: Design, analytical and display issues. *International Journal of Multiple Research Approaches*, 3(2), 140-152.
- Castells, M. (2011). *The power of identity: The information age: Economy, society and culture* (Vol. 2). Chichester, United Kingdom: Wiley.
- Cavana, R., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative methods*. Brisbane, Australia: Wiley.
- Cavaye, A. L. (1996). Case study research: A multi-faceted research approach for IS. *Information Systems Journal*, 6(3), 227-242.

- Cecez-Kecmanovic, D. (2011). On methods, methodologies and how they matter. *ECIS 2011 Proceedings*. Paper 233. Retrieved from <http://aisel.aisnet.org/ecis2011/233>.
- Checkland, P. (1981). *Systems thinking, systems practice*. Chichester, United Kingdom: Wiley.
- Chen, W., & Hirschheim, R. (2004). A paradigmatic and methodological examination of information systems research from 1991 to 2001. *Information Systems Journal*, 14(3), 197-235.
- Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16(1), 64-73.
- Churchman, C. W. (1971). *Design of inquiring systems: Basic concepts of systems and organization*. New York, NY: Charles West.
- Collis, J., & Hussey, R. (2003). *Business research: A practical guide for postgraduate and undergraduate students*. New York, NY: Palgrave Macmillan.
- Connelly, F. M. (1980). Teachers' roles in the using and doing of research and curriculum development. *Journal of Curriculum Studies*, 12(2), 95-107.
- Coronel Llamas, J. M., & Boza, Á. (2011). Teaching research methods for doctoral students in education: Learning to enquire in the university. *International Journal of Social Research Methodology*, 14(1), 77-90.
- Council for Higher Education (2004). *The state of the provision of the MBA in South Africa*. Higher Education Monitor No 2. Pretoria, South Africa: CHE.
- Council for Higher Education, Higher Education Monitor No 7. (2009). *Postgraduate studies in South Africa: A statistical profile*. Pretoria, South Africa: CHE.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative and mixed methods approaches*. Los Angeles, CA: Sage.
- Dahlbom, B., & Mathiassen, L. (1993). *Computers in context: The philosophy and practice of systems design*. London, United Kingdom: Blackwell.
- Davenport, T. H., & Markus, M. L. (1999). Rigor vs. relevance revisited: Response to Benbasat and Zmud. *MIS Quarterly*, 23(1), 19-23.
- Davis, F. D. (1993). User acceptance of information technology: System characteristics, user perceptions and behavioral impacts. *International Journal of Man-machine Studies*, 38(3), 475-487.

- Davis, G. B., Gorgone, J. T., Couger, J., Feinstein, D. L., & Longenecker Jr, H. E. (1996). IS'97: Model curriculum and guidelines for undergraduate degree programs in information systems. *ACM SIGMIS Database*, 28(1), 101-194.
- Davison, R. M., & Martinsons, M. G. (2011). Methodological practice and policy for organisationally and socially relevant IS research: An inclusive–exclusive perspective. *Journal of Information Technology*, 26(4), 288-293.
- Deem, R., & Lucas, L. (2007). Research and teaching cultures in two contrasting UK policy contexts: Academic life in education departments in five English and Scottish universities. *Higher Education*, 54(1), 115-133.
- DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*, 3(1), 60-95.
- Denzin, N. K. (2008). The new paradigm dialogs and qualitative inquiry. *International Journal of Qualitative Studies in Education*, 21(4), 315-325.
- DeSanctis, G. (2003). The social life of information systems research: A response to Benbasat and Zmud's call for returning to the IT artifact. *Journal of the Association for Information Systems*, 4(1), 16.
- DeSanctis, G., & Poole, M. S. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization Science*, 5(2), 121-147.
- De Villiers, M. (2005). *Three approaches as pillars for interpretive information systems research: Development research, action research and grounded theory*. Paper presented at the Proceedings of the 2005 annual research conference of the South African Institute of Computer Scientists and Information Technologists on IT research in Developing Countries. 20-22 September 2005, White River, South Africa.
- Diamond, R. M. (2011). *Designing and assessing courses and curricula: A practical guide*. New York, NY: Wiley.
- Dobson, P. (2002). Critical realism and information systems research: Why bother with philosophy? *Information Research*, 7(2). Retrieved from <http://InformationR.net/ir/7-2/paper124.html>
- Donald, J. G. (2002). *Learning to think: Disciplinary perspectives*. San Francisco, CA: Jossey-Bass.
- Donald, J. G. (2009). The commons: Disciplinary and interdisciplinary encounters. In Kreber, C. (Ed.). *The university and its disciplines: Teaching and learning within and beyond disciplinary boundaries* (pp. 35-49). London, United Kingdom: Ashgate.

- Dowling, P., & Brown, A. (2012). *Doing research/reading research: Re-interrogating education*. London, United Kingdom: Routledge.
- Doyle, W., & Carter, K. (2003). Narrative and learning to teach: Implications for teacher-education curriculum. *Journal of Curriculum Studies*, 35(2), 129-137.
- Dressel, P. L., & Marcus, D. (1982). *On teaching and learning in college: Re-emphasizing the roles of learners and the disciplines*. San Francisco, CA: Jossey-Bass.
- Dubé, L., Bourhis, A., & Jacob, R. (2006). Towards a typology of virtual communities of practice. *Interdisciplinary Journal of Information, Knowledge and Management*, 1(1), 69-93.
- Earley, M. A. (2009). Developing reflective practitioners. In Garner, M., Wagner, C., & Kawulich, B. (Eds). *Teaching research methods in the social sciences* (pp. 103-110). London, United Kingdom: Ashgate.
- Earley, M. A. (2014). A synthesis of the literature on research methods education. *Teaching in Higher Education*, 19(3), 242-253.
- Eisenhart, M., & DeHaan, R. L. (2005). Doctoral preparation of scientifically based education researchers. *Educational Researcher*, 34(4), 3-13.
- Ellis, A. K. (2014). *Exemplars of curriculum theory*. London, United Kingdom: Routledge.
- Ellis, T. J., & Levy, Y. (2008). Framework of problem-based research: A guide for novice researchers on the development of a research-worthy problem. *Informing Science: International Journal of an Emerging Transdiscipline*, 11, 17-33.
- Ellis, T. J., & Levy, Y. (2009). Towards a guide for novice researchers on research methodology: Review and proposed methods. *Issues in Informing Science and Information Technology*, 6, 323-337.
- Fitzgerald, B., & Howcroft, D. (1998). Towards dissolution of the IS research debate: From polarization to polarity. *Journal of Information Technology*, 13(4), 313-326.
- Fox, R. (2007). Gowin's knowledge Vee and the integration of philosophy and methodology: A case study. *Journal of Geography in Higher Education*, 31(2), 269-284.
- Fraser, S. P., & Bosanquet, A. M. (2006). The curriculum? That's just a unit outline, isn't it? *Studies in Higher Education*, 31(03), 269-284.
- Galliers, R. D. (2003). Change as crisis or growth? Toward a trans-disciplinary view of information systems as a field of study: A response to Benbasat and Zmud's call for returning to the IT artifact. *Journal of the Association for Information Systems*, 4(1), 13.

- Garner, M., Wagner, C., & Kawulich, B. (2009). *Teaching research methods in the social sciences*. London, United Kingdom: Ashgate.
- Gee, J. P. (2000). Identity as an analytic lens for research in education. *Review of Research in Education*, 5, 99-125.
- George, J. F., Valacich, J. S., & Valor, J. (2005). Does information systems still matter? Lessons for a maturing discipline. *Communications of the Association for Information Systems*, 16(1), 8.
- Gilbert, R. (2009). The doctorate as curriculum: A perspective on goals and outcomes of doctoral education. In D. Boud & A. Lee (Eds.). *Changing practices of doctoral education* (pp. 54-68). London, United Kingdom: Routledge.
- Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS Quarterly*, 19(2), 213-236.
- Gorgone, J. T., Gray, P., Stohr, E. A., Valacich, J. S., & Wigand, R. T. (2006). MSIS 2006: Model curriculum and guidelines for graduate degree programs in information systems. *ACM SIGCSE Bulletin*, 38(2), 121-196.
- Gregor, S. (2006). The nature of theory in information systems. *MIS Quarterly*, 30(3), 611-642.
- Gregor, S., & Hevner, A. R. (2013). Positioning and presenting design science research for maximum impact. *MIS Quarterly*, 37(2), 337-356.
- Gregor, S., & Hovorka, D. (2011). Causality: The elephant in the room in information systems epistemology. *ECIS 2011 Proceedings*. Paper 230. Retrieved from <http://aisel.aisnet.org/ecis2011/230>.
- Grossman, P. (2005). Research on pedagogical approaches in teacher education: The report of the AERA panel on research and teacher education. In Cochran-Smith, M., & Zeichner, K. M. (Eds.). *Studying teacher education* (pp. 425-476). Mahwah, NJ: Lawrence Erlbaum.
- Grover, V., & Lyytinen, K. (2015). New state of play in information systems research: the push to the edges. *MIS Quarterly*, 39(2). 271-296.
- Grundy, S. (1987). *Curriculum: Product or praxis?* London, United Kingdom: Falmer Press.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In Denzin, N. K. & Lincoln, Y. S. (Eds.). *Handbook of qualitative research* (pp. 105-17). Thousand Oaks, CA: Sage.
- Hager, P. (2004). Front-loading, workplace learning and skill development. *Educational Philosophy and Theory*, 36(5), 523-534.

- Hardcastle, D. A., & Bisman, C. D. (2003). Innovations in teaching social work research. *Social Work Education, 22*(1), 31-43.
- Hassan, N. (2014). Useful products in theorizing for information systems. *ACIS 2014 Proceedings*. Paper 5. Retrieved from <http://aisel.aisnet.org/acis2014/5>.
- Hassan, N. R. (2011). Is information systems a discipline? Foucauldian and Toulminian insights. *European Journal of Information Systems, 20*(4), 456-476.
- Hazzan, O., & Nutov, L. (2014). Teaching and learning qualitative research≈ conducting qualitative research. *The Qualitative Report, 19*(24), 1-29.
- Henning, E., Van Rensburg, W., & Smit, B. (2004). *Finding your way in qualitative research*. Pretoria, South Africa: Van Schaik.
- Hevner, A., March, S. T., Park, J., & Ram, S. (2004). Design science in information systems research. *MIS Quarterly, 28*(1), 75-105.
- Hirschheim, R., & Klein, H. K. (2011). Tracing the history of the information systems field. *The Oxford handbook of management information systems: Critical perspectives and new directions* (pp. 16-61). Oxford, United Kingdom: Oxford University Press.
- Hirschheim, R., & Klein, H. K. (2012). A short and glorious history of the information systems field. *Journal of the Association of Information Systems, 13*(4), 188-235
- Hoadley, U., & Jansen, J. D. (2009). *Curriculum: Organizing knowledge for the classroom*. Oxford, United Kingdom: Oxford University Press.
- Holmström, J., & Truex, D. (2011). Dropping your tools: Exploring when and how theories can serve as blinders in IS research. *Communications of the Association for Information Systems, 28*(1), 282-294.
- Hooper, B., Adler, K., & Wood, W. (2011). Strengths and limitations of the occupational therapy Model Curriculum Guide as illustrated in a comprehensive curriculum revision process. *Occupational Therapy in Health Care, 25*(2-3), 194-207.
- Hounsell, D., & Anderson, C. (2009). Ways of thinking and practicing in biology and history: Disciplinary aspects of teaching and learning environments. In Kreber, C. (Ed.). *The university and its disciplines: Teaching and learning within and beyond disciplinary boundaries* (pp. 71-83). London, United Kingdom: Ashgate.
- Hovorka, D. S. (2005). Functional explanation in information systems. *AMCIS 2005 Proceedings*. Paper 393. Retrieved from <http://aisel.aisnet.org/acis2005/393>.

- Hovorka, D. S., Germonprez, M., & Larsen, K. R. (2008). Explanation in information systems. *Information Systems Journal*, 18(1), 23-43.
- Howcroft, D., & Trauth, E. M. (2004). The choice of critical information systems research. In Kaplan, B., Truex, D. P., Wastell, D., Wood-Harper, A.T., & DeGross, J.I. (Eds.). *Information systems research: Relevant theory and informed practice* (pp. 195-211). Boston, MA: Kluwer.
- Howcroft, D., & Trauth, E. M. (2008). The implications of a critical agenda in gender and IS research. *Information Systems Journal*, 18(2), 185-202.
- Huckin, T. (2004). Content analysis: What texts talk about. In Bazeman, C. & Prior, P. *What writing does and how it does it: An introduction to analyzing texts and textual practices*. (pp. 13-32). London, United Kingdom: Routledge.
- Iivari, J. (2003). The IS core-VII: Towards information systems as a science of meta-artifacts. *Communications of the Association for Information Systems*, 12(1), 37.
- Iivari, J. (2007). A paradigmatic analysis of information systems as a design science. *Scandinavian Journal of Information Systems*, 19(2), 5.
- Introna, L., & Whittaker, L. (2004). *Truth, journals and politics: The case of the MIS Quarterly*. In Kaplan, B., Truex, D. P., Wastell, D., Wood-Harper, A.T., & DeGross, J.I. (Eds.). *Information systems research: Relevant theory and informed practice* (pp. 103-120). Boston, MA: Kluwer.
- Jackson, P. W. (1992). Conceptions of curriculum and curriculum specialists. In Jackson, P.W. (Ed.). *Handbook of research on curriculum* (pp. 3-40). New York, NY: Macmillan.
- James, Ward, Dickson-Swift, Kippin and Snow (2009). Best practice in research methods assessment: Opportunities to enhance learning. In Garner, M., Wagner, C., & Kawulich, B. (Eds). *Teaching research methods in the social sciences* (pp. 139-152). London, United Kingdom: Ashgate.
- Jansen, J. D., Herman, C., Pillay, V., & Soobrayan, V. (2004). Research learning. *Journal of Education*, 34, 79-102.
- Jenkins, A., & Healey, M. (2009). Developing the student as a researcher through the curriculum. In Rust, C. (Ed.). *Improving student learning through the curriculum* (pp. 6-19). Oxford Centre for Staff and Learning Development, Oxford Brookes University, Oxford, United Kingdom: OCSLD.

- Jones, M. (1997). It all depends what you mean by discipline. In Mingers, J., & Stowell, F. (Eds.). *Information systems: An emerging discipline?* (pp. 97-112). London, United Kingdom: McGraw-Hill.
- Joyes, G., & Banks, S. (2008). Using technology in research methods teaching. In Donnelly, R. & Sweeney, F. (Eds.). *Applied e-Learning and e-Teaching in higher education* (pp. 220-241). New York, NY: Idea Group.
- Kamler, B., & Thomson, P. (2014). *Helping doctoral students write: Pedagogies for supervision*. London, United Kingdom: Routledge.
- Kaplan, B., Truex, D. P., Wastell, D., Wood-Harper, A.T., & DeGross, J.I. (Eds.). (2004). *Information systems research: Relevant theory and informed practice*. Boston, MA: Kluwer.
- Kawulich, B. (2009). The role of theory in research. In Garner, M., Wagner, C., & Kawulich, B. (Eds.). *Teaching research methods in the social sciences* (pp. 37-48). London, United Kingdom: Ashgate.
- Keen, P. G. (1991). Relevance and rigor in information systems research: Improving quality, confidence, cohesion and impact. In Nissen, H.-E., Klein, H. K., & Hirschheim, R. (Eds.). *Information systems research: Contemporary approaches and emergent traditions* (pp. 27-49). New York, NY: Elsevier.
- Kerlinger, F., & Lee, H. (2000). *Foundations of behavioral research*. New York, NY: Holt, Rinehart and Winston.
- Kiley, M., Boud, D., Manathunga, C., & Cantwell, R. (2011). Honouring the incomparable: Honours in Australian universities. *Higher Education*, 62(5), 619-633.
- Kiley, M., & Mullins, G. (2005). Supervisors' conceptions of research: What are they? *Scandinavian Journal of Educational Research*, 49(3), 245-262.
- King, J. L. (2006). The theoretical core and academic legitimacy: A response to Professor Weber. *Journal of the Association for Information Systems*, 7(1), 27.
- King, J. L. (2013). Balance of trade in the marketplace of ideas. *Journal of the Association for Information Systems*, 14(4), 3.
- King, J., & Lyytinen, K. (2003). When grasp exceeds reach: Will fortifying our theoretical core save the information systems (IS) field? In Järvi, T. and Reijonen, P. (Eds.). *People and computers: Twenty-one ways of looking at information systems: Festschrift celebrating Markku Nurminen's 60th birthday*. TUCS General Publication (26) (pp. 143-165). Turku, Finland: Turku Centre for Computer Science.

- King, J. L., & Lyytinen, K. (2004). Reach and grasp. *MIS Quarterly*, 28(4), 539-551.
- King, J., & Lyytinen, K. (2006a). The future of the IS field: Drawing directions from multiple maps. In King, J. L., & Lyytinen, K. (Eds.). *Information systems: The state of the field* (John Wiley Series in Information Systems) (pp.345-354). Chichester, United Kingdom: Wiley.
- King, J. L., & Lyytinen, K. (2006b). *Information systems: The state of the field* (John Wiley Series in Information Systems). Chichester, United Kingdom: Wiley.
- King, J. L., Myers, M. D., Rivard, S., Saunders, C., & Weber, R. (2010). What do we like about the IS field? *Communications of the Association for Information Systems*, 26(1), 20.
- Kitchenham, B., Brereton, O. P., Budgen, D., Turner, M., Bailey, J., & Linkman, S. (2009). Systematic literature reviews in software engineering– a systematic literature review. *Information and Software Technology*, 51(1), 7-15.
- Kitchenham, B., Pretorius, R., Budgen, D., Brereton, O. P., Turner, M., Niazi, M., & Linkman, S. (2010). Systematic literature reviews in software engineering—a tertiary study. *Information and Software Technology*, 52(8), 792-805.
- Klein, H. K. (2003). Crisis in the IS field? A critical reflection on the state of the discipline. *Journal of the Association for Information Systems*, 4(1), 10.
- Klein, H. K., & Hirschheim, R. A. (2006). Further reflections on the IS discipline: Climbing the Tower of Babel. In King, J. L., & Lyytinen, K. (Eds.). *Information systems: The state of the field* (John Wiley Series in Information Systems) (pp. 307-323). Chichester, United Kingdom: Wiley.
- Klein, H. K., & Hirschheim, R. (2008). The structure of the IS discipline reconsidered: Implications and reflections from a community of practice perspective. *Information and Organization*, 18(4), 280-302.
- Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 23(1), 67-93.
- Klein, H. K., & Myers, M. (2001). A classification scheme for interpretive research in information systems. In Trauth, E.M. (Ed). *Qualitative research in IS: Issues and trends*, pp. 218-239. London: Idea Group Publishing.
- Klopper, R., & Lubbe, S. (2012). Using matrix analysis to achieve traction, coherence, progression and closure in problem-solution oriented research. *CON-FIRM 2012 Proceedings*. Paper 18. Retrieved from <http://aisel.aisnet.org/con-firm2012/18>

- Knox, K. (2004). A researcher's dilemma-philosophical and methodological pluralism. *Electronic Journal of Business Research Methods*, 2(2), 119-128.
- Kreber, C. (2006). *Exploring research-based teaching*. London, United Kingdom: Jossey-Bass.
- Kreber, C. (2009). Supporting student learning in the context of diversity, complexity and uncertainty. In Kreber, C. *The university and its disciplines: Teaching and learning within and beyond disciplinary boundaries* (pp. 3-18). London, United Kingdom: Ashgate.
- Kridel, C. (2010a). *Encyclopedia of curriculum studies* (Vol. 1). Los Angeles, CA: Sage.
- Kridel, C. (2010b). *Encyclopedia of curriculum studies* (Vol. 2). Los Angeles, CA: Sage.
- Kvale, S. (1996). *Interviews: An introduction to qualitative research writing*. Los Angeles, CA: Sage.
- Land, F. (2010). The use of history in IS research: An opportunity missed? *Journal of Information Technology*, 25(4), 385-394.
- Landry, M., & Banville, C. (1992). A disciplined methodological pluralism for MIS research. *Accounting, Management and Information Technologies*, 2(2), 77-97.
- Lange, C. (2005). *Development and status of the information systems/wirtschaftsinformatik discipline—an interpretive evaluation of interviews with renowned researchers: Part II—results information systems discipline*. ICB-Research Report. Retrieved 11 Nov., 2014, from <http://www.econstor.eu/handle/10419/58151>
- Lather, P. (2006). Paradigm proliferation as a good thing to think with: Teaching research in education as a wild profusion. *International Journal of Qualitative Studies in Education*, 19(1), 35-57.
- Lattuca, L. R., & Stark, J. S. (2011). *Shaping the college curriculum: Academic plans in context*. New York, NY: Wiley.
- Leary, D. E. (1992). Communication, persuasion, and the establishment of academic disciplines: The case of American psychology. In Brown, R. A. (Ed.). *Writing the social text: Poetics and politics in social science discourse* (pp. 73-90). New York, NY: Aldine De Gruyter.
- Lee, A. S. (2004). Doctor of Philosophy, heal thyself. In Kaplan, B., Truex, D. P., Wastell, D., Wood-Harper, A.T., & DeGross, J.I. (Eds.). *Information systems research: Relevant theory and informed practice* (Vol. 143), (pp. 21-34). Boston, MA: Kluwer.
- Lee, A. S., & Baskerville, R. L. (2003). Generalizing generalizability in information systems research. *Information Systems Research*, 14(3), 221-243.

- Leedy, P. D., & Ormrod, J. E. (2005). *Practical research*. 8th ed. Upper Saddle River, NJ: Pearson Education.
- Lei, S. A. (2010). College research methodology courses: Revisiting general instructional goals and objectives. *Journal of Instructional Psychology*, 37(3), 236-240.
- Levy, Y., & Ellis, T. J. (2006). A systems approach to conduct an effective literature review in support of information systems research. *Informing Science: International Journal of an Emerging Transdiscipline*, 9(1), 181-212.
- Longstreet, W. S., & Shane, H. G. (1993). *Curriculum for a new millennium*. Boston, MA: Allyn & Bacon.
- Lyytinen, K. (1999). Empirical research in information systems: On the relevance of practice in thinking of IS research. *MIS Quarterly*, 23(1), 25-27.
- Lyytinen, K., & King, J. L. (2004). Nothing at the center? Academic legitimacy in the information systems field. *Journal of the Association for Information Systems*, 5(6), 8.
- Macdonald, D. (2003). Curriculum change and the post-modern world: Is the school curriculum-reform movement an anachronism? *Journal of Curriculum Studies*, 35(2), 139-149.
- Manathunga, C. (2005). Early warning signs in postgraduate research education: A different approach to ensuring timely completions. *Teaching in Higher Education*, 10(2), 219-233.
- Maree, K. (2007). *First steps in research*. Pretoria, South Africa: Van Schaik Publishers.
- Margolis, E. (2001). *The hidden curriculum in higher education*. New York, NY: Routledge.
- Marsh, C. J. (2009). *Key concepts for understanding curriculum*. London, United Kingdom: Routledge.
- Marsh, C.J., & Willis, G. (2007). *Curriculum: Alternative approaches, ongoing issues*. Upper Saddle River, NJ: Pearson Education.
- McAuliffe, D. A. (2009). Incorporating the ethical dimension in the teaching of research methods. In Garner, M., Wagner, C., & Kawulich, B. (Eds.). *Teaching research methods in the social sciences* (pp. 91-102). London, United Kingdom: Ashgate.
- McCune, V. (2009). Teaching within and beyond the disciplines: The challenge for faculty. In Kreber, C. (Ed.). *The university and its disciplines: Teaching and learning within and beyond disciplinary boundaries* (pp. 231-237). London, United Kingdom: Ashgate.
- McGinn, M. K., & Bosacki, S. L. (2004). Research ethics and practitioners: Concerns and strategies for novice researchers engaged in graduate education. Paper presented at the *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*. 5(2), 1-19.

Retrieved 2 Dec., 2015, from <http://www.qualitative-research.net/index.php/fqs/article/viewArticle/615>.

- McNamee, M., & Bridges, D. (2002). *The ethics of educational research*. London, United Kingdom: Wiley-Blackwell Publishing.
- Merriam, S. B. (2014). *Qualitative research: A guide to design and implementation*. New York, NY: Wiley.
- Metz, M. H. (2001). Intellectual border crossing in graduate education: A report from the field. *Educational Researcher*, 30(5), 1-7.
- Middendorf, J., & Pace, D. (2004). Decoding the disciplines: A model for helping students learn disciplinary ways of thinking. *New Directions for Teaching and Learning*, 98 (Summer 2004), 1-12.
- Mingers, J. (2001). Combining IS research methods: Towards a pluralist methodology. *Information Systems Research*, 12(3), 240-259.
- Mingers, J. (2003). The paucity of multimethod research: A review of the information systems literature. *Information Systems Journal*, 13(3), 233-249.
- Mingers, J. (2004). Real-izing information systems: Critical realism as an underpinning philosophy for information systems. *Information and Organization*, 14(2), 87-103.
- Mingers, J., Mutch, A., & Willcocks, L. (2013). Critical realism in information systems research. *MIS Quarterly*, 37(3), 795-802.
- Mouton, J. (2007). Post-graduate studies in South Africa: Myths, misconceptions and challenges. *South African Journal of Higher Education*, 21. *Postgraduate Supervision 2007: Special Edition 8*, 1078-1090.
- Murtonen, M., & Lehtinen, E. (2005). Conceptions of research and methodology learning. *Scandinavian Journal of Educational Research*, 49(3), 217-224.
- Murtonen, M., Rautopuro, J., & Väisänen, P. (2007). *Learning and teaching of research methods at university*. Turku, Finland: Finnish Educational Research Association.
- Myers, G. T. (2011). Research methodology by numbers—teaching tool. *Electronic Journal of Business Research Methods*, 9(1), 66-77.
- Myers, M. (1997). Interpretive research in information systems. In Mingers, J., & Stowell, F. (Eds.). *Information systems: An emerging discipline?* (pp. 239-266). London, United Kingdom: McGraw-Hill.

- Myers, M. D. (2009). *Qualitative research in business and management*. London, United Kingdom: Sage.
- Myers, M. D., & Klein, H. K. (2011). A set of principles for conducting critical research in information systems. *MIS Quarterly*, 35(1), 17-36.
- Naimi, L. (2007). Strategies for teaching research ethics in business, management and organisational studies. *Electronic Journal of Business Research Methods*, 5(1), 26-39.
- Nandhakumar, J., & Scarbrough, H. (2011). Open sources? A commentary on 'IS research methods: Inclusive or exclusive?' *Journal of Information Technology*, 26(4), 302-303.
- Nind, M., Kilburn, D., & Luff, R. (2015). The teaching and learning of social research methods: developments in pedagogical knowledge. *International Journal of Social Research Methodology*, 18(5), 455-461.
- Northedge, A., & McArthur, J. (2008). *Guiding students into a discipline*. In Kreber, C. (Ed.). *The university and its disciplines: Teaching and learning within and beyond disciplinary boundaries* (pp. 107-118). London, United Kingdom: Routledge.
- Novak, J. D. (1984). *Learning how to learn*. Cambridge, United Kingdom: Cambridge University Press.
- Nunes, J. C. B. (2009). Teaching the use of technology in research methods. In Garner, M., Wagner, C., & Kawulich, B. (Eds.). *Teaching research methods in the social sciences* (pp. 131-138). London, United Kingdom: Ashgate.
- Oates, B. (2011). Evidence-based information systems: A decade later. *ECIS 2011 Proceedings*. Paper 222. Retrieved from <http://aisel.aisnet.org/ecis2011/222>.
- Oates, B. J. (2006). *Researching information systems and computing*. London, United Kingdom: Sage.
- Oates, B. J., & Capper, G. (2009). *Using systematic reviews and evidence-based software engineering with Masters' students*. Paper presented at the Evaluation and Assessment of Software Engineering (EASE) Conference. Durham University 20 – 21 April.
- Oates, B. J., Edwards, H., & Wainwright, D. W. (2012). A model-driven method for the systematic literature review of qualitative empirical research. *ICIS 2012 Proceedings*. Paper 5. Retrieved from <http://aisel.aisnet.org/icis2012/5>.
- O'Donovan, B., & Roode, D. (2002). A framework for understanding the emerging discipline of information systems. *Information Technology and People*, 15(1), 26-41.

- Okoli, C., & Schabram, K. (2010). A guide to conducting a systematic literature review of information systems research. *Social Sciences Research Network*, May 5, 2010. Retrieved from <http://ssrn.com/abstract=1954824>
- Olivier, M. S. (2009). *Information technology research: A practical guide for computer science and informatics*. Pretoria, South Africa: Van Schaik.
- Onwuegbuzie, A. J., Johnson, R. B., & Collins, K. M. (2009). Call for mixed analysis: A philosophical framework for combining qualitative and quantitative approaches. *International Journal of Multiple Research Approaches*, 3(2), 114-139.
- Onwuegbuzie, A. J., & Leech, N. L. (2005). On becoming a pragmatic researcher: The importance of combining quantitative and qualitative research methodologies. *International Journal of Social Research Methodology*, 8(5), 375-387.
- Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: Research approaches and assumptions. *Information Systems Research*, 2(1), 1-28.
- Orlikowski, W. J., & Iacono, C. S. (2001). Research commentary: Desperately seeking the “IT” in IT research—a call to theorizing the IT artifact. *Information Systems Research*, 12(2), 121-134.
- Page, D. (2008). Systematic literature searching and the bibliographic database haystack. *The Electronic Journal of Business Research Methods*, 6(2), 171-180.
- Pascal, J. W., & Brown, G. A. (2009). *Ontology, epistemology and methodology of teaching research methods*. In Garner, M., Wagner, C., & Kawulich, B. (Eds.). *Teaching research methods in the social sciences* (pp. 71-80). London: United Kingdom: Ashgate.
- Pather, S., & Remenyi, D. (2005). Some of the philosophical issues underpinning research in information systems—from positivism to critical realism. *South African Computer Journal*, 35, 76-83.
- Paul, R. (2002). Is information systems an intellectual subject? *European Journal of Information Systems*, 11(2), 174-177.
- Paul, R. J. (2008). The only duty we owe to history is to rewrite it: Reflections on Bob Galliers’ article ‘A discipline for a stage?’ *European Journal of Information Systems*, 17(5), 444-447.
- Pearson, M., & Brew, A. (2002). Research training and supervision development. *Studies in Higher Education*, 27(2), 135-150.
- Pearson, M., Pearson, A., & Shim, J. (2005). The relevancy of information systems research: The practitioner's view. *Information Resources Management Journal (IRMJ)*, 18(3), 50-67.

- Poland, B., & Pederson, A. (1998). Reading between the lines: Interpreting silences in qualitative research. *Qualitative Inquiry*, 4(2), 293-312.
- Polkinghorne, D. E. (1992). Postmodern epistemology of practice. In Kvale, S. (Ed.). *Psychology and postmodernism* (Vol. 9) (pp. 17-30). Los Angeles, CA: Sage.
- Ponterotto, J. G. (2006). Brief note on the origins, evolution, and meaning of the qualitative research concept thick description. *The Qualitative Report*, 11(3), 538-549.
- Posner, G. J. (1998). Models of curriculum planning. In Beyer, L. E., & Apple, M. W. (Eds.). *The curriculum: Problems, politics and possibilities* (pp. 267-283). Albany, NY: SUNY Press.
- Posner, G. J. (2004). *Analyzing the curriculum*. 3rd ed., New York, NY: McGraw-Hill.
- Posner, G. J., & Rudnitsky, A. N. (1994). *Course design: A guide to curriculum development for teachers*. 4th ed., New York, NY: Longman.
- Power, D. J. (2003). The IS core-II: The maturing IS discipline: Institutionalizing our domain of inquiry. *Communications of the Association for Information Systems*, 12(1), 32.
- Preissle, J. & Roulston, K. (2009). *Trends in teaching qualitative research: A 30-year perspective*. In Garner, M., Wagner, C., & Kawulich, B. (Eds.). *Teaching research methods in the social sciences* (pp. 11-21). London: United Kingdom: Ashgate.
- Prosser, M., Ramsden, P., Trigwell, K., & Martin, E. (2003). Dissonance in experience of teaching and its relation to the quality of student learning. *Studies in Higher Education*, 28(1), 37-48.
- Ramiller, N. C., & Pentland, B. T. (2009). Management implications in information systems research: The untold story. *Journal of the Association for Information Systems*, 10(6), 474-494.
- Rapley, T. J. (2001). The art (fulness) of open-ended interviewing: some considerations on analysing interviews. *Qualitative research*, 1(3), 303-323.
- Raymond, E. (1999). The cathedral and the bazaar. *Knowledge, Technology and Policy*, 12(3), 23-49.
- Remenyi, D. (2002). Research strategies—beyond the differences. *Electronic Journal of Business Research Methods*, 1(1), 38-41.
- Reynolds, W. M. (2003). *Curriculum: A river runs through it*. Berne, Switzerland: Peter Lang.

- Rezabek, R. J. (2000). Online focus groups: Electronic discussions for research. *Forum: Qualitative Social Research*, 1 (1). Article 18. Retrieved 11 Nov., 2014, from <http://www.qualitative-research.net/index.php/fqs/article/view/1128/2510>
- Robertson, J., & Blackler, G. (2006). Students' experiences of learning in a research environment. *Higher Education Research and Development*, 25(3), 215-229.
- Robey, D. (2003). Identity, legitimacy and the dominant research paradigm: An alternative prescription for the IS discipline: A response to Benbasat and Zmud's call for returning to the IT artifact. *Journal of the Association for Information Systems*, 4(1), 15.
- Robey, D. (2006). Cleaning the mirror: Desperately seeking identity in the information systems field. In King, J. L., & Lyytinen, K. (Eds.). *Information systems: The state of the field* (John Wiley Series in Information Systems) (pp. 332-337). Chichester, United Kingdom: Wiley.
- Robitaille, D. F. (1993). *Curriculum frameworks for mathematics and science*. TIMSS Monograph No. 1. Vancouver, Canada: Pacific Educational Press.
- Roode, D. (2003). Information systems research: A matter of choice? *South African Computer Journal*, 30, 1-2.
- Rosemann, M., & Recker, J. C. (2009). Rigour versus relevance revisited: Evidence from IS conference reviewing practice. *Australasian CIS 2009 Proceedings*. Paper 15. Retrieved from <http://aisel.aisnet.org/acis2009/15>.
- Ross, A. (1999). *Curriculum: Construction and critique*. London, United Kingdom: Psychology Press.
- Roth, W. (2006). Textbooks on qualitative research and method/methodology: Toward a praxis of method. *Forum: Qualitative Social Research*, 7(1). Article 11. Retrieved 11 Nov., 2014, from <http://www.qualitative-research.net/index.php/fqs/article/view/216/478>
- Roth, W. (2009). Apprenticeship: Induction to research through praxis of method. In Garner, M., Wagner, C., & Kawulich, B. (Eds.). *Teaching research methods in the social sciences* (pp. 111-118). London, United Kingdom: Ashgate.
- Roulston, K., Preissle, J., & Freeman, M. (2013). Becoming researchers: Doctoral students' developmental processes. *International Journal of Research and Method in Education*, 36(3), 252-267.
- Sammon, D., Nagle, T., & Finnegan, P. (2011). Design of a pedagogical artefact for doctoral researchers to assess theoretical strength. *ECIS 2011 Proceedings*. Paper 232. Retrieved from <http://aisel.aisnet.org/ecis2011/232>.

- Saunders, C., & Wu, Y. (2003). The IS core-VI: Further along the road to the IT artifact. *Communications of the Association for Information Systems, 12*(1), 36. Retrieved from <http://aisel.aisnet.org/cais/vol12/iss1/36>.
- Saunders, M., Lewis, P., & Thornhill, A. (2003) *Research methods for business students*. Harlow, United Kingdom: Financial Times Prentice Hall.
- Saville, B. K. (2008). *A guide to teaching research methods in psychology*. London, United Kingdom: Wiley-Blackwell Publishing.
- Sawyer, S., & Crowston, K. (2004). Information systems in organizations and society: Speculating on the next 25 years of research. In Kaplan, B., Truex, D. P., Wastell, D., Wood-Harper, A.T., & DeGross, J.I. (Eds.). *Information systems research: Relevant theory and informed practice* (pp. 35-52). Boston, MA: Kluwer.
- Scherman, V., & Du Toit, P. (2008). Cooperative learning in postgraduate lectures: Possibilities and challenges. *South African Journal of Higher Education, 22*(2), 423-438.
- Schön, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. San Francisco, CA: Basic Books.
- Scott Jones, J., & Goldring, J. E. (2015). I'm not a quants person'; key strategies in building competence and confidence in staff who teach quantitative research methods. *International Journal of Social Research Methodology, 18*(5), 479-494.
- Sekaran, U., & Bougie, R. (2003). *Research methods for business: A skill building approach*. New York, NY: Wiley.
- Shackelford, R., McGettrick, A., Sloan, R., Topi, H., Davies, G., Kamali, R., Cross, J., ...& Lunt, B. (2006). Computing curricula 2005: The overview report. *ACM SIGCSE Bulletin, 38*(1), 456-457.
- Shulman, L. (2007). *The signature pedagogies of the professions of law, medicine, engineering, and the clergy: Potential lessons for the education of teachers*. Paper presented at the Math Science Partnerships (MSP) Workshop, Teacher Education for Effective Teaching and Learning, National Research Council's Center for Education. 6-8 February 2007.
- Shulman, L. S. (2005). Signature pedagogies in the professions. *Daedalus, 134*(3), 52-59.
- Sidorova, A., Evangelopoulos, N., Valacich, J. S., & Ramakrishnan, T. (2008). Uncovering the intellectual core of the information systems discipline. *MIS Quarterly, 32*(3), 467-482.
- Silver, C., & Woolf, N. H. (2015). From guided-instruction to facilitation of learning: the development of five-level QDA as a CAQDAS pedagogy that explicates the practices of expert users. *International Journal of Social Research Methodology, 18*(5), 527-543.

- Silverman, D. (2011). *Interpreting qualitative data*. London, United Kingdom: Sage.
- Silverman, D. (2013). *Doing qualitative research: A practical handbook*. London, United Kingdom: Sage.
- Smithson, J. (2000). Using and analysing focus groups: limitations and possibilities. *International journal of social research methodology*, 3(2), 103-119.
- Somers, M. J. (2010). Using the theory of the professions to understand the IS identity crisis. *European Journal of Information Systems*, 19(4), 382-388.
- South African Qualifications Authority, (2007). *Level descriptors for the South African National Qualifications Framework*. March, 2007. Retrieved 28 Oct., 2013, from <http://www.saqa.org.za/docs/papers/stats2011.pdf>
- South African Qualifications Authority, (2012). *Level descriptors for the South African National Qualifications Framework*. November, 2012. Retrieved 28 Oct., 2013, from <http://www.saqa.org.za/docs/policy/stats2011.pdf>
- South African Qualifications Authority, (2013). *Statistics on post-school education and training in South Africa: 2011*. Retrieved 28 Oct., 2013, from <http://www.saqa.org.za/docs/papers/stats2011.pdf>
- Stewart, G. (1997). The use of Gowin's Vee to improve post-graduate critical analysis of research papers. *AMCIS 1997 Proceedings*. Paper 101. Retrieved from <http://aisel.aisnet.org/amcis1997/101>.
- Straub, D. (2012). Editor's Comments: Does MIS have native theories? *MIS Quarterly*, 36(2), III-XII.
- Straub, D. W., & Ang, S. (2008). Editor's comments: Readability and the relevance versus rigor debate. *MIS Quarterly*, 32(4), 2.
- Straub, D. W., & Ang, S. (2011). Editor's comments: Rigor and relevance in IS research: Re-defining the debate and a call for future research. *MIS Quarterly*, 35(1), iii-xi.
- Strayhorn, T. L. (2009). The (in) effectiveness of various approaches to teaching research methods. In Garner, M., Wagner, C., & Kawulich, B. (Eds.). *Teaching research methods in the social sciences* (pp. 119-130). London, United Kingdom: Ashgate.
- Struwig, F., & Stead, G. (2001). *Planning, designing and reporting research*. Cape Town, South Africa: Pearson.

- Sundt, J. (2010). Overcoming student resistance to learning research methods: An approach based on decoding disciplinary thinking. *Journal of Criminal Justice Education*, 21(3), 266-284.
- Sutton, R. I., & Staw, B. M. (1995). What theory is not. *Administrative Science Quarterly*, 40(3), 371-384.
- Tams, S. (2010). On the appropriateness of theory borrowing in IS: An interdisciplinary evaluation. *Southern Association for Information Systems Proceedings*. 26-27 March 2010, Atlanta. Paper 23. Retrieved from <http://aisel.aisnet.org/sais2010/23>.
- Tashakkori, A., & Teddlie, C. (2003). Issues and dilemmas in teaching research methods courses in social and behavioural sciences: US perspective. *International Journal of Social Research Methodology*, 6(1), 61-77.
- Taylor, A. (2007). Learning to become researching professionals: The case of the doctorate of education. *International Journal of Teaching and Learning in Higher Education*, 19(2), 154-166.
- Taylor, H., Dillon, S., & van Wingen, M. (2010). Focus and diversity in information systems research: Meeting the dual demands of a healthy applied discipline. *MIS Quarterly*, 34(4), 647-667.
- Toohy, S. (1999). *Designing courses for higher education*. Buckingham, United Kingdom: The Society for Research into Higher Education and Open University Press.
- Topi, H., Valacich, J. S., Wright, R. T., Kaiser, K., Nunamaker Jr, J. F., Sipior, J. C., & de Vreede, G. J. (2010). IS 2010: Curriculum guidelines for undergraduate degree programs in information systems. *Communications of the Association for Information Systems*, 26(1), 18.
- Trauth, E. M. (2006). Theorizing gender and information technology research. In Trauth, E. M. (Ed.). *Encyclopedia of gender and information technology*, Vol. 2 (pp. 1154-1159). Hershey, PA: Idea Group.
- Trauth, E. (2011). What can we learn from gender research? Seven lessons for business research methods. *The Electronic Journal of Business Research Methods*, 9(1), 1-9.
- Trochim, W. M. (2006). *Research methods knowledge base*. Retrieved 28 Oct., 2013, from <http://www.socialresearchmethods.net/kb/>
- Trowler, P. (2008). Beyond epistemological essentialism: Academic tribes in the twenty-first century. In Kreber, C. (Ed.). *The university and its disciplines: Teaching and learning within and beyond disciplinary boundaries* (pp. 181-195). London, United Kingdom: Routledge.

- Trowler, P., & Wareham, T. (2007). *Tribes, territories, research and teaching: Enhancing the 'teaching-research' nexus literature review* (Unpublished draft). University of Lancaster, United Kingdom.
- Truex, D., Holmström, J., & Keil, M. (2006). Theorizing in information systems research: A reflexive analysis of the adaptation of theory in information systems research. *Journal of the Association for Information Systems*, 7(12), 33.
- Unrau, Y. A., & Beck, A. R. (2004). Increasing research self-efficacy among students in professional academic programs. *Innovative Higher Education*, 28(3), 187-204.
- Unwin, P. (2009). *ICT4D: Information and communication technology for development*. Cambridge, Cambridge University Press.
- Van Niekerk, J. C., & Roode, J. (2009). Glaserian and Straussian grounded theory: Similar or completely different? Paper presented at the *Proceedings of the 2009 Annual Research Conference of the South African Institute of Computer Scientists and Information Technologists*. 13-14 October, 2009, Vanderbijlpark, South Africa.
- Venable, J., & Baskerville, R. (2012). Eating our own cooking: Toward a more rigorous design science of research methods. *Electronic Journal of Business Research Methods*, 10(2), 141-153.
- Venable, J. R. (2010). Design science research post Hevner et al.: Criteria, standards, guidelines and expectations. *Global Perspectives on Design Science Research. Proceedings of DESRIST 2010* 109-123.
- Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly*, 37(1), 21-54.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186-204.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.
- Vithal, R. (2003). Methodological challenges and criteria for researching a social, cultural, political approach. In Vithal, R. (Ed.). *In search of a pedagogy of conflict and dialogue for mathematics education* (pp. 75-106). New York, NY: Springer.
- Vithal, R. (2009). A quest for democratic participatory validity in mathematics education research. In Dhunpath, R., & Samuel, D. M. (Eds.). *Life history research: Epistemology, methodology and representation*. (pp. 67-82). Rotterdam, Holland: Sense.

- Wagner, C. (2003). *Placing Psychology: A critical exploration of research methodology curricula in the social sciences*. Unpublished thesis. University of Pretoria.
- Wagner, C. (2009). The future of teaching research in the social sciences. *South African Journal of Higher Education*, 23(4), 826-838.
- Wagner, C., Garner, M., & Kawulich, B. (2011). The state of the art of teaching research methods in the social sciences: Towards a pedagogical culture. *Studies in Higher Education*, 36(1), 75-88.
- Wagner, C., & Okeke, C. (2009). Quantitative or qualitative: Ontological and epistemological choices in research methods curricula. In Garner, M., Wagner, C., & Kawulich, B. (Eds.). *Teaching research methods in the social sciences* (pp. 61-69). London, United Kingdom: Ashgate.
- Walsham, G. (1995a). The emergence of interpretivism in IS research. *Information Systems Research*, 6(4), 376-394.
- Walsham, G. (1995b). Interpretive case studies in IS research: Nature and method. *European Journal of Information Systems*, 4(2), 74-81.
- Walsham, G. (2006). Doing interpretive research. *European Journal of Information Systems*, 15(3), 320-330.
- Walsham, G. (2012). Are we making a better world with ICTs? Reflections on a future agenda for the IS field. *Journal of Information Technology*, 27(2), 87-93.
- Weber, R. (2003a). Editor's comments: Still desperately seeking the IT artifact. *MIS Quarterly*, 27(2), 183-183.
- Weber, R. (2003b). Editor's comments: Theoretically speaking. *MIS Quarterly*, 27(3), iii-xii.
- Weber, R. (2003c). Editor's comments: The problem of the problem. *MIS Quarterly*, 27(1), iii-ix.
- Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, 26(2), 3.
- Weinreich, P., & Saunderson, W. (2005). *Analysing identity: Cross-cultural, societal and clinical contexts*. New York, NY: Routledge.
- Wenger, E., McDermott, R. A., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Boston, MA: Harvard Business Press.
- Westrup, C. (2012). In need of narratives of IS. *Journal of Information Technology*, 27(2), 106-107.

- Whinston, A. B., & Geng, X. (2004). Operationalizing the essential role of the information technology artifact in information systems research: Gray area, pitfalls and the importance of strategic ambiguity. *MIS Quarterly*, 28(2), 149-159.
- Whiteman, N., & Oliver, M. (2008). Engaging with the research methods curriculum. *Reflecting Education*, 4(1), 63-71.
- Wiggins, G. P., & McTighe, J. (2005). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Winch, C., & Clarke, L. (2003). 'Front-loaded' vocational education versus lifelong learning: A critique of current UK government policy. *Oxford Review of Education*, 29(2), 239-252.
- Wisker, G., Robinson, G., Trafford, V., Creighton, E., & Warnes, M. (2003). Recognising and overcoming dissonance in postgraduate student research. *Studies in Higher Education*, 28(1), 91-105.
- Wynn Jr, D., & Williams, C. K. (2012). Principles for conducting critical realist case study research in information systems. *MIS Quarterly*, 36(3), 787-810.
- Yin, R. K. (2011). *Applications of case study research*. 4th ed. Thousand Oaks, CA: Sage Publications.
- Zachariadis, M., Scott, S., & Barrett, M. (2013). Methodological implications of critical realism for mixed-methods research. *MIS Quarterly*, 37(3), 855-880.
- Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2012). *Business research methods*. Mason, OH: Cengage Learning.

Appendix B Document Analysis Guideline

Critical Question 1: What are the intended Information Systems Research Methodology curricula?

A. Questions per institution:

1. What is the official name of the “Information Systems” discipline?
2. Which faculty/college is the discipline housed in?
3. What are the names and levels of all postgraduate IS RM modules offered?
4. Who lectured the various IS RM modules in the period 2009–2011?
5. Who is lecturing the various IS RM modules in 2012?

B. Questions per module:

1. Does the module appear in the handbook?
 - a. What is the name and code of the module?
 - b. Is the module compulsory or an elective?
 - c. What are the prerequisite or co-requisite modules, if any?
 - d. What are the stated notional hours of the module?
 - e. What is the aim of the module?
 - f. What are the module’s learning outcomes?
 - g. What are the topics/sections in the module?
 - h. What is the published sequence of content?
 - i. What are the published assessment methods, if any, that are used in the module?
2. Does the module have an official module template?
 - a. What are the similarities and differences between the template and the handbook entry?
 - b. What are the assessment criteria for the module?
 - c. What is the official syllabus for the module?

3. Does the module have an official module/student guide?
 - a. What are the similarities and differences between the module guide and the handbook entry and/or template and/or syllabus?
 - b. What are the timeframes for the respective topics in the module?
 - c. Which textbook(s) are prescribed/recommended for this module?
 - d. Which materials are prescribed for use in the module?
 - e. What additional readings or other materials are prescribed or recommended in the module guide?
 - f. Which teaching strategies are declared officially as being used in this module?
4. Is there anything else of interest that is published about the module?

Appendix C Participant Background Information

VOLUNTARY QUESTIONNAIRE INFORMATION SYSTEMS RESEARCH METHODOLOGY CURRICULA

Please indicate your response to each question by deleting unnecessary items or providing information in the space provided.

1. Discipline of postgraduate degree(s):

Honours:

Information Systems

Computer Science

Other (please specify) _____

Masters:

Information Systems

Computer Science

Other (please specify) _____

Doctorate:

Information Systems

Computer Science

Other (please specify) _____

2. At your institution, is any introduction to research, even as part of a module, provided at undergraduate level? If so, please provide details.

3. Please list the Research Methodology modules that you are currently lecturing or have lectured in the past. Please indicate approximate student numbers for each module e.g. Honours 2011 30 students:

4. Please outline any formal Research Methodology training that you have received (this would include RM modules in degree studies):

5. Have you had any training in the **teaching** of Research Methodology? If so, please provide details:

Thank you very much for taking the time to complete this form.

Appendix D Guidelines for Virtual Focus Group Participation

The following guidelines are intended to assist in creating a friendly, respectful forum for the discussion of issues of common interest. They are presented in no specific order of importance. The social learning site EDMODO will be used as the platform for discussion.

1. The purpose of the discussion is to explore diverse practices and understand the perspective and reasons for these practices. There is no intention to reach consensus on issues, although this may occur.
2. The VFG process will remain open to change and suggestion, as necessary.
3. A single group will consider all issues related to the topic, rather than separate into Honours' and Masters' groups. Discussion threads will naturally cluster into the different levels.
4. All posts remain visible for the duration of the VFG, allowing reflection and the opportunity to change one's point of view or comment on one's own comment 😊.
5. All posts on the topic will be public. Private posts/messages to the facilitator could deal with issues of process.
6. Participants will use pseudonyms to remain anonymous and to accentuate the focus on the ideas.
7. Institutional documents and practices will remain confidential during the VFG. Materials such as key articles may be shared.
8. Normal Netiquette will be observed as the VFG includes participants with a range of cultural and language backgrounds.
9. English will be the chosen language of discussion. Spelling, grammar and format of comments are far less important than the clarity of meaning. An informal conversation about issues of common interest would be ideal.
10. Participants are encouraged to comment on key questions, respond to the inputs of others and raise any questions of their own.
11. Differences of opinion are expected and encouraged. All viewpoints will be accorded respect and simple value judgments will be avoided.
12. The central focus on written inputs may lead to misunderstandings – inputs to clarify or paraphrase to ensure common understanding and questions of clarity will all help in deepening understanding.
13. Time to reply will vary due to the asynchronous nature of the VFG, but the aim will be to keep the discussion going.
14. The facilitator role will include posing initial questions, summarising, probing for clarity and maintaining focus on the issue. The process will be semi-structured in order to draw on the expertise of the group.

Appendix E All the VFG Questions

Please note: each section (A – I) below represents a week's discussion.

- A. Introductory: Once again, I am delighted that you have agreed to participate. I have outlined my reasons for running the VFG as a PhD researcher, but I do hope that you will also gain from the process.
- a. What are you hoping to gain from participation in the VFG?
- B. Question 1: Based on your experience as both lecturer and student, what is the primary purpose of postgraduate IS Research Methodology (RM) modules and programmes?
- Possible probes/prompts:
- a. Prepare for research project? General research capacity building?
 - b. Prepare for problem-based research?
 - c. Is your RM module(s) directly linked to the research project/dissertation/thesis or does it focus on building research skills, independent of the research project?
- C. Question 2: In your view, what are the critical topics that are currently covered in your RM modules at the various PG levels?
- Possible probes/prompts:
- a. Which paradigms, if any, are included?
 - b. Does the focus fall on quantitative, qualitative, mixed methods or Design Science approaches? Does a range of approaches receive equitable coverage?
 - c. Which research strategies are included? Descriptive, case study, AR, experiments, simulations?
 - d. Which IS theoretical frameworks, if any, are covered specifically?
 - e. SLR or general LR?
 - f. Critical reading?
 - g. Academic argument?
 - h. Academic writing?
 - i. Statistical analysis?
 - j. Online tools, e.g. surveys?
 - k. Poll to vote on most important? Discuss results?
- D. Question 3: A wide range of prescribed textbooks, recommended books and reading materials are listed in the RM module outlines that have been submitted. The primary focus also ranges from business to IT to general social science. What is your view on the value of having a prescribed textbook in RM modules at the various PG levels?

Honours: e.g. Oates *Researching Information Systems and Computing* (2005), Maree et al. *First steps in research* (2007), Olivier *Information Technology Research* (2009),

Sekaran & Bougie *Research Methods for Business* (2009); Blumberg, Cooper and Schindler *Business Research Methods*

Masters: e.g. Cavana *Applied Business Research* (2002), Oates (2006), Myers *Qualitative Research in Business and Management* (2011)

Possible probes/prompts:

- a. If you use prescribed reading, why have you chosen the specific book and/or readings that you have?
 - b. Do sessions follow the prescribed book quite closely?
 - c. In choosing IS articles as required reading, the following claim has been made: “Only articles that showcase best practice in IS should be included”. How would you respond?
- E. Question 4: Think back to your experience in teaching or studying an IS RM module. What are the key challenges / big issues in teaching an RM module?

Possible probes/prompts:

- a. What do students typically find difficult in the RM module/programme?
Challenges such as research questions / problem statements, research problem within IS, plagiarism, poor grammar, bad referencing, inability to read critically, lit reviews (survey/concept matrix?), ethics, research legitimisation, alignment/coherence, conceptual/theoretical framework, information searching.
 - b. What do students typically enjoy in the RM module/programme?
 - c. What is a typical pass rate in an RM module? How often do students fail an RM module?
 - d. In your view, what is an effective way to teach an RM module?
 - e. How do you know when your teaching has been effective?
 - f. Discuss the roles of lecturers and students in a typical lecture/seminar session.
 - g. Are supervisors allocated to students in working on the research proposal?
Individual or group?
 - h. How are research topics chosen? Students? Supervisors?
 - i. Poll to rate key challenge
- F. Question 5: A wide range of assessment strategies are listed in the RM module outlines that have been submitted. In your view, what is an effective way to assess an RM module?

Possible probes/prompts:

- a. “The only way to ensure that students have the required research skills and knowledge is by assessing using tests and examinations”. How would you respond?
- b. “The entire RM module should be geared to developing a sound research proposal” How would you respond?

- c. Do students present/defend their research proposal in the RM module?
 - d. Role of external examiner
- G. Question 6: Is there anything about your RM module/programme that you would like to change?
- H. Summary of key issues – In your view, what is the most important issue that we have discussed?
- I. We have been discussing the ways that IS RM modules are structured, delivered and assessed. Is there anything you would like to add that we did not discuss?

Appendix F Lecture/Seminar Observation Guideline

Critical Question 2: How are IS RM curricula enacted?

Critical Question 3: Why are the intended and enacted IS RM curricula the way they are?

Aspects to document/note

Methods of delivery

Types of student engagement

Dominant paradigm? Coverage of alternative paradigms?

Aspects of practice that evidence lecturer assumptions about the nature of IS research

Does practice align with interview question answers in Appendix F?

Appendix G Planned Interview Guideline

Acknowledgments to Prof. C Wagner (University of Pretoria) for providing a research instrument that has been adapted for this research

Critical Question 2: How are IS RM curricula enacted?

Critical Question 3: Why are the intended and enacted IS RM curricula the way they are?

A. Background questions:

1. Demographic data: age, gender, race, majors in undergraduate degree, highest qualification, postgraduate degree(s): discipline-qualification (IS/CS).
2. Is any research training provided for IS students at undergraduate level?
3. What is the code and description of the RM module that you teach?
4. What level is it offered at (Honours, Masters.)?
5. Is the module compulsory or not?
6. How many students typically register for your RM module?
7. Please list the names of any other lecturers that teach on this module with you?
8. How did you become involved in teaching a research methods module?
9. Have you had any formal training in Research Methodology? If so, was it helpful and in what way(s)? Please provide details of any courses.
10. Have you had any formal training in the teaching of Research Methodology? If so, was it helpful and in what way(s)?

B. Probing questions:

1. How did your school or department go about developing the research methodology module(s) that are taught? In your view, why were they developed in this way?

2. How did you design/adapt the research methodology module(s) that you teach?
3. Why did you design/adapt the module in the way you did?
4. In your own words, what is the aim of your module and its outcomes?
5. What do you hope to achieve with your module / why do you think these outcomes are important?
6. How does the module fit into the broader training that students receive?
7. Who is your module aimed at / who attends your module?
8. Briefly outline, in your own words, the content you cover in the module?
9. What sequence is the module usually presented in?
10. Why did you sequence it in this way?
11. How do you cover IS-specific theoretical frameworks in the RM module? Should they be covered up front?
12. Should deliverables in a RM course be part of students' research or should examples be standalone (i.e. tighter control over learning outcomes as cases are designed in advance)?
13. Which textbook(s) did you prescribe/recommend for this module?
14. Why did you choose this/these particular textbook(s)?
15. What additional materials do you use in the module?
16. What made you decide to use these materials?
17. How is the module delivered (e.g. lectures, seminars, distance, online, blended)?
18. What are some of the teaching strategies that you use in this module?
19. Why do you use these particular teaching strategies?
20. How do these teaching strategies help, or hinder, student learning?
21. Briefly describe the way that students participate in your RM module. Why have you structured participation in this way? Do you use techniques to 'force' participation?
22. What are the assessment methods that you use in the module?
23. Why do you use these assessment methods?
24. How do these assessment methods help, or impede, student learning?
25. It seems that there is an emerging trend towards teaching students about qualitative or mixed methods research in addition to more traditional quantitative methods. What are your views on this?

26. Do you include any of these approaches in your curriculum? What do you include? How do you include them? Why do you include them?
27. Have you ever discussed your module content or method of instruction with anyone either inside or outside your institution? What did you discuss and why? Did the discussion lead to any actual changes?
28. Is there anything about your module that you would like to change? Why?
29. Describe the ideal research methods module.
30. Is there anything you would like to add that we did not discuss?

Probing answers to Interview questions:

Probe answers of interest for more detail, explanation, fill in gaps.

Probing questions:

1. How do you think your own undergraduate and postgraduate education influences the way that you design, structure, present and assess the IS RM module that you teach?
2. How does the culture of the school/department/institution influence the way that you design, structure, present and assess the IS RM module that you teach?
3. How does the nature of the undergraduate programme in IS influence the way that you design, structure, present and assess the IS RM module that you teach?
4. How does the nature of other modules in the IS Honours programme influence the way that you design, structure, present and assess the IS RM module that you teach?
5. How do you think your perceptions of the students taking the module influence the way that you design, structure, present and assess the IS RM module that you teach?
6. How do you think the nature of the IT industry influences the way that you design, structure, present and assess the IS RM module that you teach?
7. How would you describe the nature and forms of “good” research in IS?
8. How do you think your own perception of the nature of research in IS influences the way that you design, structure, present and assess the IS RM module that you teach?
9. How do you think your own research interests and experience influence the way that you design, structure, present and assess the IS RM module that you teach?

10. How would you describe your own approach to research (paradigm)?
11. How do you think your paradigmatic orientation influences the way that you design, structure, present and assess the IS RM module that you teach?
12. How do you think your view of the expectations of research supervisors in the department influences the way that you design, structure, present and assess the IS RM module that you teach?
13. How do you think the institution's primary research initiatives influences the way that you design, structure, present and assess the IS RM module that you teach?
14. Is there anything you would like to add that we did not discuss?

Appendix H Actual Interview Schedule Example

1. **Ritual**
2. **Pass time**
3. **Reason – interested in the design, structure, delivery and assessment of RM modules and why they are the way they are**
4. **Rules – confidential, anonymity, frank – record to ensure accuracy - notes**
5. **Preview – 1 hour, 6 broad questions with possible probes**

Context

Introductory

1. It is always interesting to hear how academics got involved with lecturing RM. How did you become involved in teaching research methods/preparation module(s)?

Design

Possible probes:

- Did you inherit the RM module(s) you teach or could you design from scratch?
- How did you design/adapt the research methodology/preparation module(s) that you teach?
- Why did you design/adapt the module(s) in the way that you did?

Positioning

2. It is quite common to be asked how we position ourselves as IS lecturers and researchers. How would you describe your own positioning as an RM lecturer and researcher?

Possible probes:

- How would you describe your own approach to research (paradigm)?
- How would you describe the nature and forms of “good” research in IS?
- How do you judge what constitutes an appropriate level of rigour in RM modules at Honours, Masters’ and doctoral levels?
- In your view, what is an effective way to teach an RM module?
- How do you know when your teaching, in terms of research preparation of students, has been effective?
- How much influence do you think you have in terms of shaping a student’s choice of paradigm/approach?

Probing answers to the VFG and documents:

3. Thinking back to the VFG discussions, which aspect(s) stand out for you as being highly significant in terms of designing and implementing RM modules?

Possible probes

- Were any of your assumptions about RM and research preparation challenged in the VFG?
- Application and integration of IS theories in research proposals – often difficult to transfer content to student research projects. How do you aim to achieve this?
- You made a very interesting observation about the need to prepare students thoroughly before they start the research project proper. Please could you explore these implications a bit?
- Relationship between RM lecturer(s) and supervisors including handover, consistency (ethics, referencing) and alignment

Possible probes adapted, based on participant's inputs on VFG:

- You mentioned SLR as a critical topic. Has this been adapted for the various PG levels?
- Why do you choose not to prescribe a core textbook?
- Your Masters reading list is drawn from a wide range of disciplines, primarily Commerce. Why did you select the particular textbooks and readings as prescribed/recommended?
- Problem finding was mentioned as a challenge on the VFG. How do you manage this aspect?
- Why do you think that “students not thinking like researchers” is the major teaching challenge and how do you deal with it?
- You mentioned that the mixed methods approach is not fully supported, but some students do use MM as the broad framework.
- Would it be fair to say that alternative paradigms and approaches are presented as counterpoints/supplements to your primary focus? Would students be able to use one of the alternative approaches in their research projects? How does your approach impact supervisors with different approaches?
- Please could you outline the assessment strategies that you use and why you choose them?
- Are there any changes you would make to your RM module(s)?
- How do you feel about students working on Honours research projects, including research proposals, in pairs?

Probing any aspects of interest from session attendance and/or site visit:

I was interested by the

- Strong grounding of the project proposals in the literature. How do you achieve this?

Exploring possible influences on RM module design and implementation:

4. I would like to explore possible influences on the way that you design, structure, deliver and assess the IS RM module(s) that you teach. Please outline what you would see as some of these possible influences.

Probes:

- your own undergraduate and/or postgraduate education
- your dissertation/thesis supervisor
- the culture of the school/department/institution
- the nature of the undergraduate programme in IS
- the nature of other modules in the IS Honours, Masters or doctoral programme
- your perceptions of the students taking the module
- the nature of the IT industry
- your own research interests and experience
- your paradigmatic orientation
- your view of the expectations of research supervisors in the department
- the type of research valued in IS journals
- any other influence you would like to add

Concluding questions:

5. Assume that you are approached for advice by a colleague who is going to lecture an RM module for the first time. What advice would you give?
6. Modelling is the language of the analyst and is also used in conceptualising research projects. As an RM lecturer, how would you model research preparation in RM modules as a system?
7. Is there anything you would like to add that we did not discuss?

Closure:

1. **Any final comments**
2. **Summary of key points made (optional)**
3. **Future actions – transcribe and return to verify**
4. **Any final questions?**
5. **Pass time**
6. **Ritual – thank**

Appendix I Selected VFG Transcript (Unedited)

- [Me to VFG](#)

QUESTION 3 TEACHING CHALLENGES

Think back to your experience in teaching or studying an IS RM module(s). What are the key challenges or “big issues” in teaching an RM module? By extension, how do you manage them?

Please contextualise your comments in terms of Honours, Masters or doctoral levels.

Some of the challenges (below) were mentioned or implied in earlier discussions. I know it looks daunting, but it is the rich product of your inputs - thank you!

Please discuss (expand on, agree with or dispute) any items from the list or add, as necessary.

General (all levels):

1. Diversity of student qualifications and backgrounds (e.g. IS, CS, IT)
2. Diverse emphases of IS discipline at different institutions
3. The multi-/inter-/trans-disciplinary nature of IS
4. The diversity of paradigmatic and methodological approaches used to investigate IS phenomena
5. Alternative approaches to theory use and development in IS research
6. Transfer and relevance of foundational knowledge from previous PG modules
7. Relevance and rigour
8. Building argumentation skills
9. Cultivating the mindset / reasoning of an IS researcher
10. Ethics in research
11. Extent of statistical coverage in RM modules and requirements in the research project (descriptive / inferential)
12. Generalist RM lecturer as opposed to a team of lecturers who specialize in aspects of research
13. Repeated coverage of the same topics at increasing levels of depth at Honours, Masters and doctoral levels
14. The relationship between research projects and the RM module, e.g. involvement of research supervisors in the RM module

Honours (specific to this level):

1. Problem finding and definition
2. Academic reading and writing
3. Referencing and plagiarism
4. Limited experience of students in terms of paradigms
5. Disconnect between undergraduate programmes and PG research modules
6. Relatively superficial coverage of a range of paradigms, approaches and methodologies as opposed to structuring the course around a primary paradigm and appropriate methodologies
7. Appropriate level of rigour at this level

8. Coherence and alignment of research questions, paradigm, design, methodology, data generation and analysis

Masters:

1. One general RM module as opposed to a group of related, but separate Research modules (e.g. Philosophy, Theory and Methods) with the challenge of integration

-
- Mar 27, 2012

Rebel Force - Fundamentally the issues are the following:

(1) The students do not 'think' like researchers. Many of them in IS come from business consulting backgrounds, and the thinking differs in the research context. The only way in which this is partially served is to allow them to engage extensively in the discourses around research and to get some 'hands-on' experience via various assignments (preferably practical enough to practice aspects of research).

(2) The students have too limited time at the institutions where I have worked. Most (especially at Masters and Doctoral level) do not have the time to really immerse themselves into reading the most relevant and up to date literature. In addition, the actual modules and programmes are scheduled to cater for these students, i.e. contact time is relatively limited. This automatically implies that a lot of responsibility is with the student to ensure that s/he discovers what is necessary about research; however, in many cases this does not happen because the students are busy professionals.

The disconnect between undergraduate and postgraduate modules is a problem and it has been documented (see Byrne, E. and Lotriet, H. (2007) Transformation in IS education: Whose concepts should be changing? South African Computer Journal, 38, 2-7. We teach them one thing at undergraduate level (especially in IS), then at postgraduate level we not only hit them with the research mindset, but we also tell them that everything that they have been taught regarding technologies and organisations is at best only a partial truth. Some students actually feel threatened by this. The solution would probably be to start, like certain other disciplines (e.g. humanities) with a research methods module at an early stage of their undergraduate studies. The challenge here would be to find space for such a module in very full programmes.

(3) The next big wave to hit research in this country is probably the ethics of research. In my experience this is seen as an 'irritating' necessity and most students (and indeed many study leaders) do not pay much attention to this, as could be expected in the publish-or-perish era that we live in. However, it is actually enshrined in legislation, and it might become a significant issue.

(4) Another issue is the 'handover' between the RM lecturer and the actual study leader. This is generally problematic - if handover is too late, then potentially some work on the student's research proposal needs to be redone; if it is too early there is the risk that the student has to do parallel work in order to please both RM lecturer and study leader. I do not really have a satisfactory suggestion in this regard.

-
- Mar 27, 2012
- **Me** - Great to have Rebel Force in the conversation - a range of interesting perspectives raised... and a useful reference on the "UG-PG disconnect" issue.
-

- Mar 27, 2012
[Bad Housewife](#) - I heartedly (sp?) agree with what Rebel Force says in his points 1 & 2 (time - I agree rather less re postgrad and undergrad) & 4.
 In the Facilitator's list for Hons I would say that if I wanted to choose just one, Item 1 is the one. If a student is not excited by his/her topic and at the same time is uncertain how to (whether it is possible for that student to) collect actually useful empirical data, you have a real problem. Almost all other aspects can be overcome but a bad topic not.

Mar 28, 2012

[Bad Housewife](#) - I work with two different groups of Masters students. The one have very thorough preparation in the form of Masters modules on Theory, methodologies etc. The other lot have very little. The difference is noticeable and making RM reading obligatory at the time of doing the research has, in my experience, not been very successful. So at Masters level the critical success factor is a strong preparatory phase for research. The same applies at doctoral level. It is astounding how many people seem to arrive at university one day (in person or as email) and expect to be able to start "doing" a doctorate the next. Let alone the special group who believe they already have "the answer" to some research problem and want to quickly write it up.

Mar 28, 2012

[Me](#) - Just to clarify on two related aspects mentioned earlier. I am interested to hear how other institutions handle these.

@Rebel Force: The challenging issue of handing over from RM lecturer to study leader. Do study leaders/topic supervisors play no role in the choice of topic and development of the research proposal throughout the RM module? Some module outlines seem to imply that the study leader/supervisor is involved during the RM module.

@Bad Housewife: The challenging issue of topic choice. Do students choose their topics independently, with guidance from RM lecturers/study leaders/supervisors or do study leaders / supervisors provide a list of possible topics? There was some discussion of this in earlier posts.

Mar 28, 2012

[Me](#) - I love to see the replies picking up on replies by other participants! Just to probe a bit:

@Bad Housewife: You mentioned that you agree less with Rebel Force on the PG - UG disconnect issue in RF's point 2 above. Please could you expand on this a bit. RF makes 2 main points on this: that PG is very different and may question aspects covered at UG level; and that an introduction to research methods could possibly be covered at UG level.

Mar 28, 2012

[Me](#) - Just another request for clarification - thank you for raising these.

@Bad Housewife: The 2 groups of Masters students - I assume that they are coursework Masters and Masters by Research only?

I am interested to hear whether other institutions have the same challenge. In some institutions, coursework Masters is not offered so M and D students may have the same challenges of deepening their philosophical, theoretical and methodological foundations without the benefit of formal modules? How is this managed - supervisors, informal programmes, student self-study....?

Mar 28, 2012

[Bad Housewife](#) - I do not think it is viable to add more to the undergrad programme. I do think that at UG level we need to focus on the kind of core skills (basic database design, learning what a use case is, some programming just as examples) that get students jobs. So although the socio side is discussed repeatedly at UG level I think it is predictable that the students are still pretty focussed on skills. This is all remedied at PG level although the emphasis escalates with the more senior degrees. I think the disconnect is, therefore, almost inevitable and I personally do not want to spend too much effort 'avoiding' it in case the baby (basic skills) gets thrown out with the bathwater.

Mar 28, 2012

[Bad Housewife](#) - The two groups are two literally different degrees both at Masters level with different names and different entrance requirements and different curricula.

Mar 28, 2012

[Bad Housewife](#) - Topic Choice: We ask lecturers (all) to propose research topics and we have separate lists for Hons and Masters. Each lecturer does this as the mood takes him/ her. So some offer specific research problems, some offer broad areas of interest. All offer far too many. We end up with a vast list and then the students add their own "magic ingredients". Then they experiment with different versions of these using them as examples in many of their assignments in the RM modules but only getting feedback from the RM lecturers. Then as their exam assignment (at both Hons and M level and instead of a closed book exam) they put it all together as a research proposal. Then they are assigned to supervisors but since the workload needs to be balanced this might not be the person who proposed the topic. So this gets complicated. I will not even go into the Doctoral process other than to say there are two points of view a) passion of student for topic vs b) existing research agenda of supervisor.

Mar 28, 2012

[Me](#) - Thank you for the clear, detailed outline of the process, Bad Housewife (sounds so odd). You have elaborated on a challenge that I am sure troubles others - we would love to hear from other participants.

Mar 28, 2012

[Kalando Kisii](#) - I worry about the focus on feeding the students with content, content and content of research, yet when they are out in the field, they have to "do" and learn the content again. Could we not better structure the RM course so that the students can engage in research during the period they are being taught? Of course time is an issue.

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- Apr 24, 2012

[Me](#) to VFG

QUESTION 3 TEACHING CHALLENGES

We really want to hear from everyone on this one - your experience in teaching RM is even more valuable when shared.

Please could each participant choose the 2 items from the list or discussion that you regard as the most important teaching challenges and post a brief reply to the discussion.

-
- Mar 29, 2012

[Participant 1](#) - I agree with all of Rebel Force's points, particularly the first point about student desire to engage in rigorous academic research. So we have to convert before we can preach. A challenge I have as a supervisor (but I suppose still related to teaching) is getting students to properly frame their research topics/questions and their approach. I find that at each level students struggle to make the jump to the next level of research - since they believe they were already taught how to do research i.e. M students think they are just doing a 'bigger' H study, and D students think they are doing a 'bigger' M study. This is particularly challenging when M and D students might be combined for research methods training, or when some D students assume they don't require D-level training (just because they have an M).

I think another challenge not explicitly mentioned yet is that students will learn most about research while "doing" it i.e. I believe most learn more about research while they are engaging in their own projects than from the upfront coursework. This may have interesting implications for how RM is taught, when topics are introduced and by whom.

The ethics issues is important but not necessarily problematic since I find that institutional requirements help us to ensure and enforce adherence; and students generally are keen to comply.

Diversity in methods is a problem, and we address this by using different people. The challenge then is how to coordinate (who goes first) and ensure consistent messages (about the limitations and advantages of certain approaches) across all the different contributors within an RM course. I have to go teach.... will carry on later

Mar 29, 2012

[Me](#) - I am very interested to see responses to these insights from Participant 1, particularly the point that you really learn research by doing research, rather than in a RM module, and the challenge of the perennial student claim that they have "done" research methods previously.

-
- Mar 29, 2012

[Kalando Kisii](#) - How to Do Research is perhaps the biggest challenge for the students and even for the lecturers. As I mentioned earlier, we give a lot of information, but translating the information in the field is another ball game altogether. I think we should focus more on this, even though that still brings the issue of time. This approach requires much more individual attention to students' needs and biases and whether this can be attained within a semester by a single lecturer is questionable. I also think that lecturers who are teaching RM should research more themselves in order for the course to be more 'real' to the students. So in teaching how to do research, the focus of the evaluation should not be on recall (of content) but 'forcing' students to at least engage with the problems that they seek to resolve and apply research. Much more weight should be given to the application in order for students to prioritize the "doing" (possibly using actual data during the semester).

Appendix J Informed consent template letter

UNIVERSITY OF KWAZULU-NATAL
School of Education

Dear Participant,

PhD Research Project
Researcher: BW McArthur (033 2605605)
Supervisor: Prof R Vithal (031 2608231)
Research Office: Ms P Ximba (031-2603587)

I, Brian McArthur, am a PhD student in the School of Education at the University of KwaZulu-Natal. You are invited to participate in a research project entitled **Information Systems Research Methodology Curricula**.

The aim of this study is to: investigate the official, espoused and enacted curricula in Information Systems Research Methodology.

Through your participation I hope to understand the design and implementation of IS RM curricula and the factors driving the curricula. The results of this interview are intended to contribute to understanding the reasons that the IS RM curriculum is designed and implemented the way that it is.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records identifying you as a participant will be maintained by the School of Education, UKZN.

If you have any questions or concerns about participating in this study, please contact me or my supervisor at the numbers listed above.

The interview should take about 1 hour to complete.

Sincerely



Investigator's signature _____

Date 21 May 2012

This page is to be retained by participant

**UNIVERSITY OF KWAZULU-NATAL
School of Education**

PhD Research Project

Researcher: BW McArthur (033 2605605)

Supervisor: Prof R Vithal (031 2608231)

Research Office: Ms P Ximba (031-2603587)

CONSENT

I _____ (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Signature of Participant

Date

This page is to be retained by researcher

Appendix K Selected Interview Transcript Excerpt (Anonymised)

FRANK

INTERVIEWER Okay. Good afternoon and thank you so much for being willing to sit through this interview. I really appreciate it. You have already, with the VFG, been incredible in terms of the inputs and thank you for that.

FRANK No problem.

INTERVIEWER As you know, my interest is in the design and implementation of research methodology modules and why they are the way they are.

FRANK Okay.

INTERVIEWER And that is what I am really looking at in a nutshell. In terms of the confidentiality and the anonymity obviously as far as is possible people's confidentiality will be applied. I know you will be frank and that is what I am really looking forward to. So...[intervenes].

FRANK Frank is my middle name, literally.

INTERVIEWER We mentioned the recording. I will be sort of jotting down notes along the way and I hope that will not be distracting but some people actually prefer it if you are not kind of sitting and staring at each other.

FRANK Yes.

INTERVIEWER So I will jot the odd note down just for my own purposes.

FRANK Great. Great.

INTERVIEWER Roughly an hour, I hope.

FRANK Sure.

INTERVIEWER There are six broad questions and then there are the odd probes and follow ups so it is fairly standard procedure.

FRANK Okay. No problem at all.

INTERVIEWER All right. So just kicking off then with some context really. It is always interesting to hear how academics got involved in research methodology/preparation lectures.

FRANK Okay.

INTERVIEWER So how did you become involved in teaching research methods or research preparation modules in

the beginning?

FRANK So this is going back to my early days. What happened when I first started teaching is I was allocated the job of coordinating the Honours program and we used a sort of visiting professor to teach, not necessarily external to the University but from one of the other schools to teach the research methods module and what transpired is it seemed to focus mostly on literature review, gathering literature, sort of formulating the research design, sort of conceptualising the study, that type of stuff but it fell quite short of giving students the nuts and bolts of getting down to developing questionnaires, analysing and capturing data, analysing data and sort of writing up the research reports. So what I decided to do is supplement what had been covered in that course, which had happened earlier in the year with a few workshops later on and that was sort of 1999 and then since then I have been involved ever since. It has obviously expanded over the years in terms of taking a large, playing a larger role. So we still used that same person for a couple of years subsequent with still the same gaps that needed to be filled and then eventually us deciding to put in our own program.

INTERVIEWER Okay. Thank you very much. So just in terms of that then the next question is in terms of to what extent you inherited a research methodology module and/or to what extent you were able to really design from scratch when you did take it over?

FRANK I would say inherited at some level with regards to our elements of sort of literature review, gathering literature, using electronic sources and even to an extent, I would say, inheriting from, it is quite complicated because there has been over the years multiple interventions by different visiting professors coming to do different types of studies. So I suppose every time we get someone to come and give something and we like it, we borrow it.

INTERVIEWER Absolutely.

FRANK So inherited some of that, but perhaps what is sort of really designed from scratch is maybe more the overall emphasis and the timing and the structure of the course. That has never really been inherited. Maybe more topics, sort of inheriting the idea of certain topics needing to be covered, but how they are timed and how they sort of feed into other topics is sort of more the, sort of added on.

INTERVIEWER Yes.

FRANK Afterwards.

INTERVIEWER I think you have answered this in some degree.

FRANK Okay.

INTERVIEWER Why did you design or adapt the course the way that you did?

FRANK I think relying on external people is not sustainable. We got to a point where it was really necessary to start to bring more in-house and that meant not just the ability to coordinate the efforts of others, but to really, to sort of really build up expertise and deciding who in the department would be best at different areas and we have split up responsibilities across various different people and then decided to understand everybody's sort of niche and where they were good at and I think it made it much more sustainable and I think also we have sort of done, we sort have gone through quite a few iterations of all of this to get to the point where when we bring in external people, it is not, just sort of cover the basics or to, it is really to use them for where we feel we are short internally and not able to sort of deliver at the level we might want to deliver at, but really I think it is the, it is that, I think just experience that comes through just more and more years, more and more students and every year we are sort of picking up we would not have had those problems in supervision if we had covered this better in the course and I think that has been going on for quite a while. So we sort of added more in.

INTERVIEWER Okay. Perfect. Thank you very much. Thank you very much. The next one is quite an interesting one for me as well...[indistinct] interesting I guess otherwise we would not be here, but it is quite common to be asked how we position ourselves as IS lecturers and, more commonly, I guess as researchers.

FRANK Yes.

INTERVIEWER And I think you have made a very clear indication in the VFG and that is great].

FRANK Yes.

INTERVIEWER But perhaps how would you describe your own positioning as an RM lecturer and researcher?

FRANK Okay, I do not want to sort of make it seem that I am discounting the value of other approaches but I was schooled in a particular way and I think that is incredibly powerful and very difficult to shake off. So I think while your appreciation for other approaches might grow over the years I think that identity has been quite firmly set and the, it really has had a huge impact on the way I see myself as a researcher because it is the way I believe knowledge will best progress. That if I use these methods I know that I can produce work at the level and with the level and standards and the rigor that is necessary to not only be publishable but actually to really be producing knowledge. So taking it beyond just an exercise and I think that sort of led me to favour a particular paradigm and really understand the basket of techniques that fall in that approach and feel expert enough in them not only to do them but also to teach them and I think to sort of stand up and teach alternative approaches that I do not a) have experience with as a

researcher, b) not thoroughly convinced that it leads to the development of valid knowledge I think would be really just giving it lip service and would just simply be I think doing it for the sake of maybe being PC.

INTERVIEWER Sure.

FRANK And I believe, I also believe, if all approaches have merit and I do not necessarily discount it. I am not a hundred percent convinced that a lot do but if they do have merit I do not think there is anything wrong with there not only being different schools of thought but literally different schools, physical schools that embrace these different approaches and build their profile around them and I think other schools might be better equipped to teach other approaches and less equipped maybe to do the approaches that I like. Now I do buy the argument that we sort of say well students should understand which school they want to go to and that kind of thing. That they are not always making their decision on that basis and they are coming to a particular school where there is a particular flavour and they miss out on the other and that is just the way it is, I think. Okay, but you know in an ideal world students would really be selecting into a particular approach. They would say I want to do this type of research and therefore I want to go to XXX or I want to do this type and therefore I want to go to XXX or XXX or somewhere else, but I do not think that if that I could be a sort of Jack of All Trades and sort of try to teach particular types of methods simply for the sake of doing it so we could tick the box that say “covered” when actually I do not really want my students to use those approaches and would prefer if they were that way inclined to rather select into the schools that are expert in that type of approach. But yes, I think it does mean that we do not necessarily give a complete picture.

INTERVIEWER Yes.

FRANK It is not that we do not cover them. It is not that we do not situate the approach in relation to others, but we would spend three days workshopping particular techniques within our paradigm, none for the other. So it does come out that way, but it is not that they were never introduced. They are simply not, they are not taught in detail.

INTERVIEWER Yes. Excellent. Thank you very much.