

Thesis Title

The nexus between teaching, research, scholarship and consultancy: an empirical study of the perceptions of staff within the discipline of Information Systems/Information Management.

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Abstract

Over the last two decades, the discussion of, and research into, a nexus or nexes between teaching, research and scholarship has expanded. Nevertheless, only certain aspects of the debate have been supported by empirical evidence. Teaching and research tend to be seen as heterogeneous activities, yet in debates in the literature, they are often treated by inference, as essentially homogeneous activities. Positivistic studies on the nexus between teaching and research have attempted to 'measure' research output in order to evaluate teaching performance. These studies have tended to conclude, that if a relationship between teaching and research did exist, it is marginal at best, yet the available evidence is inconclusive. Interpretive based studies suggest that many academic staff perceive a nexus between teaching, research, and scholarship to exist, with many believing the nexus to be connected with learning.

Much of the discussion surrounding the nexus has arisen from shifting views as to the nature of the academic profession, the role of the academy/university and how teaching, research and scholarship have been conceptualised and enacted to inform teaching practice. To date, certain dimensions in the nexus debate have not been explored. These include the element of consultancy and the context and influence an emerging academic discipline.

Studies on the nexus between teaching, research, and scholarship are beset by epistemological, methodological and practical differences. The work presented in this thesis, has sought to investigate the perceptions of Information Systems/Information Management academic staff with regards the nexus between teaching, research, scholarship and consultancy when informing teaching practices in the teaching of post-graduate students. The research philosophy adopted for this research was phenomenological. Quantitative and qualitative data were obtained via a survey, which took the form of a web-based questionnaire and twelve semi-structured interviews with staff from both a teaching-led and a research-led university in Scotland. Of those surveyed, it was found that teaching practice was perceived to be informed by both the processes and products of research and consultancy, but research and consultancy practices were not thought to be informed by teaching. In addition, this study has suggested that a nexus is perceived to exist between research and consultancy and that this relationship is bi-directional. The area of scholarship, however, was perceived to be problematic. This study offers a number of practical implications and methodological recommendations when exploring the nexus between teaching, research, scholarship and consultancy. It is concluded that, when conceptualising a nexus between teaching, research, scholarship and consultancy, a process view, rather than a substantive view, may be more fruitful.

Declaration

I hereby declare that this thesis has been composed solely by myself and has not been accepted in any previous application for candidature for a higher degree. All work presented in this thesis was, unless otherwise acknowledged, initiated and executed by myself. All sources of information in the text have been acknowledged by reference.

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Abbreviations

AIS	Association of Information Systems
BCS	British Computer Society
BIM	Department of Business Information Management, Glasgow Caledonian Business School, Glasgow Caledonian University
CAS	Complex Adaptive Systems
ERIC	Education Resources Information Centre
GCU	Glasgow Caledonian University
HE	Higher Education
HEA	Higher Education Academy
HEFCE	Higher Education Funding Council for England
HEI	Higher Education Institution
HERO	Higher Education Research Office
HESA	Higher Education Statistics Agency
HND	Higher National Diploma (Scottish Qualifications Agency)
ILTHE	Institute of Learning and Teaching in Higher Education
IM	Information Management
IS	Information Systems
IT	Information Technology
JISC	Joint Information Systems Committee
LTSN	Learning, Teaching Support Network
QAAHE	Quality Assurance Agency for Higher Education
RAE	Research Assessment Exercise
RSA	Royal Society of Arts
SEDA	Scottish Education Development Agency
SHEFC	Scottish Higher Education Funding Council (now the Scottish Funding Council)
SISP	Strategic Information Systems Planning
TQA	Teaching Quality Assessment
UK	United Kingdom
UKAIS	United Kingdom Academy of Information Systems

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Chapter One

Rationale, Context and Thesis Content

“Education never ends, Watson. It is a series of lessons, with the greatest for the last,” Sherlock Holmes, Adventures of the Red Circle, 1911.

Introduction

The purpose of this chapter is to provide a framework in order to make sense of why this area of research was deemed appropriate for a Doctorate in Education (EdD). It provides a personal and an academic rationale as to why exploring the nexus¹ between teaching, research, scholarship and consultancy is worthy of scholarly engagement.

This chapter introduces several background elements to aid the understanding of the material and discussion contained in subsequent chapters. This introductory chapter presents the role of the university, the landscape of Information Systems/Information Management (IS/IM) in terms of teaching and research, and its status as an emerging academic discipline and profession. This chapter also outlines the learning process undertaken. It concludes with navigation aids to help the reader on their journey through the material.

Introduction to the Nexus between Teaching, Research, Scholarship and Consultancy

Although difficult to define and elusive to measure, the teaching-research ‘nexus’ has been an area of historic and ongoing controversy within universities. The teaching and research nexus is often assumed to exist within the university and investigating whether there are tangible links, associations, or connections, between teaching and research has been the subject of many discussions around the world, most notably in Australia, the United States of America (USA) and the United Kingdom (UK). One interesting observation on the nexus debate, which is further unpacked in this chapter, is that the role of the university does not appear to be unpicked in previous nexus

¹ Defined as a link or a connection, or as the ‘centre of something’, Oxford English Dictionary (2005).

studies. This research unpacks the role and function of the university in order to contextualise the nexus debate and it extensively explores the academic activities undertaken by academics. Nevertheless, the degree and impact of research and teaching connections to academics and students is a continuing area of academic debate which shows no signs of diminishing (Robertson and Bond 2003; Hattie and Marsh 2004; Prosser, Martin et al, 2005). Indeed, in 2005, officials' from the newly established Higher Education Academy in the UK, stated that "the ability to link teaching and research should decide jobs" [in the university] (THES, 2005; Higher Education Academy 2005). These two statement further demonstrate the currency and the emotions that surround this complex and complicated area.

The teaching-research nexus is usually associated with the process of enriching teaching practice by including aspects of an academic's current research, or that of colleagues, in order to support student learning and one's teaching practice (Nexus Project, 1999). The nexus is often perceived as being able to provide students with up-to-date or '*cutting edge*' disciplinary knowledge, to increase student interest in the subject through the teacher's passion for his or her area of research, and to make what is taught seem more relevant to the student (Nexus Project, Centre of Educational Development and Interactive Resources, University of Wollongong, 1999).

In addition to the idea that research may inform teaching, the activity of teaching may also inform research has been raised, although the literature surrounding this concept is at an earlier stage of development than the body of knowledge relating to research informing teaching. The research-teaching nexus introduces the challenge of trying to convey to students a particular concept or theory that may stimulate reflective thoughts in the academic regarding current or future research by the teacher (Nexus Project, Centre of Educational Development and Interactive Resources, University of Wollongong, 1999).

One ongoing issue is that academic staff who may wish to combine or link research and teaching are finding it increasingly difficult to create and maintain a balance between their primary academic activities (Brown, 2004). Indeed, many academics

around the world have looked to scholarship as the key to achieve this balance, but the concept of scholarship is difficult to pin down.

Much of the debate as to the nature of scholarship has been accredited to the work of Ernest Boyer, who raised the idea and suggested the need for academics to reconsider the activity of academic scholarship. In Boyer's (1990) work, it is suggested as the main argument, that academic scholarship does not simply need to focus on teaching practice in isolation, but on teaching as being part of the larger 'whole' of academic activity. Boyer argues that academics should 'let go' of the tired old research verses teaching argument and focus on the idea that scholarship exists in all aspects of academic work. Nevertheless, no universal definition, or consensus exists, as to the essence and the definition of scholarship.

The area of scholarship and the subsequent emphasis on the 'Scholarship of Teaching' and the 'Scholarship for Teaching' in the UK and abroad, in-conjunction with the growing academic activity of the 'Scholarship of Service' in the USA, further highlights the currency of the discussion surrounding the nexus between teaching, research and scholarship within the literature (Paulsen, 2001; Jenkins et al, 2002; Brew, 2003a; Barnett, 2005, Kreber, 2006).

However, little robust empirical evidence exists regarding a possible nexus or nexes between teaching, research and scholarship. Furthermore, given this lack of evidence it is perhaps not surprising that the influence of an emerging discipline and profession such as IS/IM may have on the nexus between teaching, research, scholarship has not been explored at all. In addition, the contribution of academic consultancy or 'academic capitalism' (Slaughter and Leslie, 1997) may have to the nexus debate has never been explored or made sense of.

It is these missing elements and the general lack of engagement with how research, scholarship and consultancy are perceived to inform teaching practice(s), which became instrumental in selecting this area for doctorate level study.

However, to make sense and understand the material presented and discussed in subsequent chapters, it is necessary to provide sufficient background material and discussion on the role of the university. In addition, since this work is set within the emerging academic and profession of IS/IM, it is also necessary to acquaint the reader with the landscape of IS/IM, in order to contextualise the results and discussion contained within this thesis.

Contextual Elements of the Nexus Debate

Exploring the Role of the University

The continuing debate as to whether research, scholarship and/or consultancy activities undertaken by academic staff within the boundaries of a university enhances teaching (Deem and Lucas, 2006a, 2006b) raises questions as to what constitutes the academy and its function(s). Historically, the academy was perceived as the means of providing teaching. Indeed, Newman (1852) stresses the university was originally a place for training teachers. In addition, the final examination for the doctorate award was a teaching examination, in which the student was required to demonstrate that they had both the command of the knowledge of the area studied and that they were able to teach the subject matter to others.

In this orthodox view, the purpose of the academy can be seen as being primarily concerned with the transmission of knowledge, culture and values through teaching (Newman, 1852). The inclusion of research as a function of the university is a relatively new concept (Schils, 1992), having only been established in the UK, after World War Two, when the then UK government attempted to follow the Germanic model of higher education, which had integrated teaching and research into one organisation.

Newman writes, when exploring the idea of the university, that other institutions, such as research institutes, are far better suited to act as instruments “extending the

boundaries of our knowledge than a university” (Newman, 1852, preface). However, Scott (1990) argues that a ‘modern university’:

“..... should behave like a finishing school for intellectual development and creativity; it should act like the last stage of general education and it should produce a professional elite. It should also facilitate the production of scientific knowledge for the economic wealth and it should encourage and promote a cultural ideology that expresses our sense of well-being” (Scott, 1990, p 34).

Schils (1983) claims the purpose of a university has a distinctive task; it is the methodological *discovery* and the *teaching* of truths about serious and important things (which suggests a nexus between teaching and research should exist).

However, Schils never makes it explicit how these academic activities are undertaken or linked. Indeed, it is assumed that academics know how to achieve this instinctively and that it is intrinsic to the function of being an academic. Brown and McIntyre, when referring to school teaching, suggest that what works to be a ‘good teacher’ is a mix of craft knowledge and the craft of teaching (Brown and McIntyre, 1993). In a higher education context, this ‘craft of teaching’ is similar to the ‘Scholarship of Teaching’, as suggested by Boyer (1990), which is discussed in Chapter Two. However, how academics’ develop and inform this craft knowledge is debatable and, indeed, how they use this craft knowledge to teach students has never fully been made explicit.

Introducing other views of the academy can start to expand the discussion on the nexus between teaching, research, scholarship and in particular consultancy. For example a vocational model of the university is concerned with training a skilled labour force, which requires applied research [mode two knowledge], rather than ‘pure’ academic research [mode one knowledge] (Gibbons, 1997).

Building on the work of Gibbons (1997), there now appears a clear strategic intent by certain ‘new universities’ such as Glasgow Caledonian University, towards Mode Two Knowledge. Mode Two Knowledge is created by communication and negotiation both in and outside the academy and that, the benefactors of knowledge

and research should be industry, commerce and students rather than fellow academics as prescribed in traditional Mode One research. This Mode Two view would suggest the area of consultancy is important and that consultancy experiences and activity may inform teaching practice following a mode two agenda of academic activity.

Until 2002, the UK Government maintained only one of these views regarding the role and function of the university, i.e., that teaching and research are or should be interlinked. In the Robbins Report (1963), it was argued that University staff should both teach and carry out research because:

"The element of partnership between teacher and taught in a common pursuit of knowledge and understanding, present to some extent in all education, should become the dominant element as the pupil matures.... It is of the utmost importance that the ablest, who are capable of going forward to original work, should be infected at their first entry to higher education with a sense of the potential of their studies" (1963, para 555).

Indeed Scott states:

"High quality teaching must be informed by research in two different senses. Effective teachers much cultivate habits of self-reflection, on what they teach and how to teach it. Condensing references to 'keeping up to date' are inadequate descriptions of this professional responsibility. best practice in teaching..... is increasing based on research techniques such as student project and group assignments. Not only teachers but also their students must be researchers" (Scott, 2002)².

These views suggest academics must engage with teaching and undertake research. However, Scott's claims are made within a particular economic, moral, social, and political climate and a particular view of knowledge and learning, which is different to the landscape portrayed in and by the Robbins report. As in Scott's landscape, universities are dealing with larger numbers of students, arguably with fewer resources.

The change from an elite higher education system to a mass higher education system (McInnis, 2000) may now influence what the sector is and how the academics within

² No page numbers given in document.

it perform their duties and balance the competing demands of their academic activities.

In this situation, new modes of learning, delivery, and assessment may be needed to meet the needs of students, staff, institutions, and the current Government agendas relating to lifelong and independent learning, employability skills and research capacity. Inevitably this combination of influences is having a profound consequence on what academics have traditionally regarded as their two core activities that of teaching and research (Coaldrake and Stedman, 1999; Zubrick, et al 2001). It has been suggested that over the past decade or so, there has been a gradual, often structural, separation between research and teaching (McNay, 1999), thus creating a climate where some academics teach, some research, some undertake both and some engage in other academic pursuits.

According to Brown (1995), one of the crucial roles of teaching is ensuring that the continuity and dissemination of accumulated human knowledge is widely accepted. This suggests that teachers need to engage in an activity that continually informs their understanding and awareness of their subject knowledge base. The nature of this activity is not entirely clear. This activity could conceivably be research, scholarship, or something else. At a more pragmatic level, teaching arguably provides the majority of funding for universities, which are financed in proportion to the number of students they teach (Rice and Austin, 1990), rather than research or consultancy.

Nevertheless, the ascendancy of research (Lucas, 2006) over the last 100 years, has had the effect of making teaching, especially undergraduate teaching, a less central activity for many academics (McNay, 1999). This has given rise to what has been called the 'non-teacher' (Kerr, 1962[1995]), i.e., an academic who only performs research. There, nevertheless, exists general agreement in universities that both teaching and research are important functions and legitimate components of the academic role. With the ascendancy of research, these activities, however, are not seen as equal partners.

There is a common perception that teaching and research are mutually beneficial activities, and that it is therefore, essential for the maintenance of quality and standards in higher education that all academic staff engage in research work (Barnett, 1992, 2005; Ramsden and Moses, 1992; Ramsden, 1998).

Nevertheless, there is little conclusive evidence to suggest that the quality and quantity of an academic's research work has any effect on the quality of his or her teaching (Ramsden and Moses, 1992). There is a view that, while teaching may be enhanced by the acquisition of new knowledge and while a distinctive feature of higher education, it is the conduct of research and the search for new knowledge that is important and teachers need not themselves be continually engaged in the production of that knowledge (Boyer, 1990; Ramsden and Moses, 1992). Indeed publishing papers does not necessarily equate to being a 'good teacher', it only suggests that you can publish papers.

Having 'set the scene' of the university and exploring some of the tensions concerning teaching, research and, to a lesser extent, scholarship, it is now necessary to provide contextual information on the emerging discipline and profession of Information Systems and Information Management, as this forms the area of work for respondents and the researcher. This discussion and material allows the reader to understand the research results and ideas presented and discussed within the chapters, which constituted this thesis.

The Landscape of IS/IM

Origins of and Developments in IS/IM

IS/IM has been evolving since the 1960s. Historically, the discipline has been a vocational and an applied area of study and practice, when it formed from the “nexus of computer science, management and organisation theory, operations research and accounting” (Davis and Olson 1985, pp 13-14).

For modern organisations today, the term Information System(s) refers to both the systems that deliver information and communication services, and the organisational function that plans, develops, and manages the information systems.

The ‘label’ for the academic discipline more or less mirrors the organisational use. Some of the names that are used illustrate this:

- Information Systems;
- Management Information Systems;
- Information Management;
- Informatics (usually modified by organisation, administration, or similar terms, such as Health, or Biology).

The United Kingdom Academy of Information Systems (UKAIS) define Information Systems as *the means by which people and organisations, utilising technologies, gather, process, store, use, and disseminate information* (UKAIS, 2005). The disciplinary domain involves the study of theories and practices related to the social and technological phenomena, which determine the development, use, and effects of information systems in organisations and society. Information Management represents the management and strategic use and alignment of information systems as a corporate resource. However, the difference between Information Systems and Information Management is often semantic, rather than fundamental.

Information Systems/Information Management can be regarded as an emerging discipline that is multidisciplinary (borrowing theory, frameworks and methods from other areas) and trans-disciplinary (as it supports other areas such as accounting, manufacturing, etc with the provision of information and systems to support these functions activities) (Galliers, 2003). This multi-disciplinary approach (Avison and Fitzgerald, 1991; McBride and Hackney, 2003) has tended to foster a fragmented approach to the work activities of IS/IM academics (teaching, research, scholarship and consultancy). IS/IM is essentially attempting to bring together two main areas. One area is related to the particular business of the organisation (social) and the other related to the technology (technical) relevant to information processing and communication needs. As illustrated in Figure 1.1, Information Management can be viewed as encapsulating the "overall management issues ... and the interfaces between the different Information Systems (IS) that may exist within an organisation" (Boaden and Lockett, 1991, p 29). This process involves the planning for and control of Information Systems (IS) through budgeting and evaluation processes, together with the organisational implications which flow from implementation and the use of IS and the Information Technology (IT) which underscores them (Earl, 1989, p 25). IS is viewed as those procedures which function to collect, process, store and communicate to support the work activity of the enterprise. IT is defined as the microprocessor-based technologies used to store, process, recall and transfer information, and which may form part of a network.

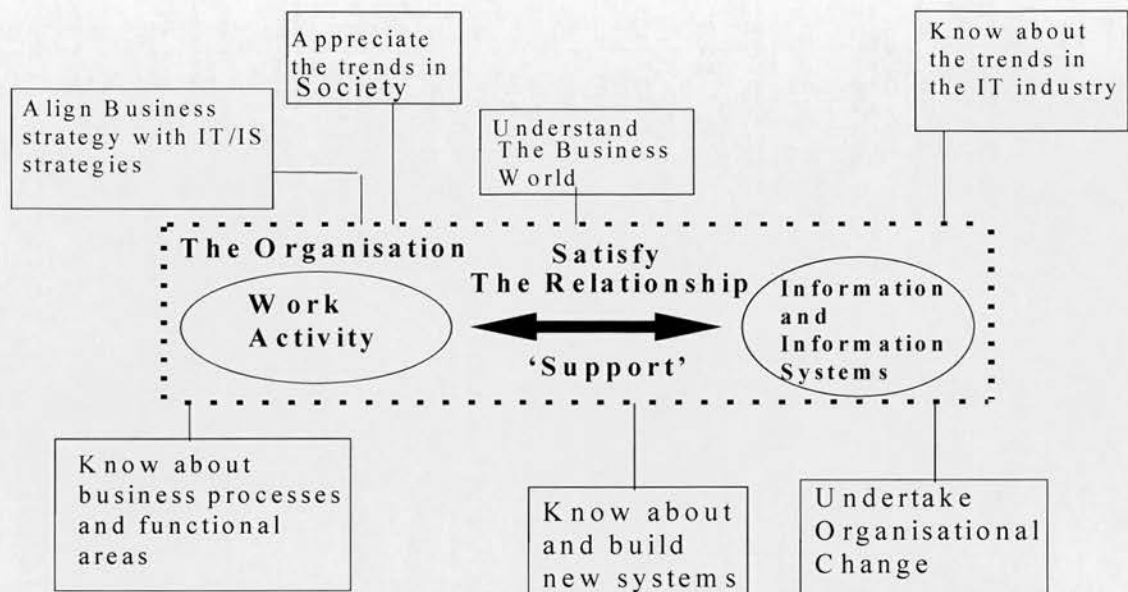


Figure 1.1 - The Know How of IM (taken from Grant, et al, 2003)

IS/IM is essentially founded on accepted knowledge from many other well-established source disciplines. The insights from these other disciplines have proved of relevance to researchers, teachers and practitioners alike. Nevertheless, no dedicated or agreed research protocols exist to help support the need for the IS/IM community to ensure validity and reliability in all research activity. Several differing approaches in terms of research paradigms, methodologies and methods exist. Some are deemed more applicable and acceptable depending on the historical, philosophical and conceptual baggage the researcher has and follows. Yet the genres of IS/IM research and teaching are complex and clouded by inconsistencies and misunderstandings. For a fuller discussion, see Broaden and Lockett (1991), Symons and Walsham (1991) and Grant, et al (2000).

Keen (1987), in a synthesis of IS/IM research outputs, argues that there has been a high proportion of hard information systems research (that is, relating to the technology, for example, information systems design and development methodologies, computer implementation, personal productivity tools and telecommunications). This 'hard' research has been coupled with 'soft' research looking for particular gains for businesses in an economically competitive

environment (for example, economics and competitive implications) and also research looking for solutions to perennial problems (for example implications, productivity tools, database management, personal computing and expert systems), which have followed particular research epistemologies. Since Keen (1987) wrote his seminal paper, a number of researchers have devoted much thought and activity to the 'softer' humanistic, social and organisational issues surrounding IS/IM. (See the work of Walsham, 1993; Checkland and Scholes 1990; Checkland and Howell 1998).

IS/IM is probably best considered as an emerging discipline compared to many other more established academic disciplines (e.g. Mathematics, Medicine and History) and, in practice, there are a number of conflicting schools of thought as to what and how to research and teach. There are those who emphasize the technological (IT) component of an information system - the hardware and software and the design methods used to bring the technology into productive service (Lee, Enior, Keen, Short). This group, on the whole, consider themselves as scientists and technologists and they adopt the methods of the natural sciences. A second group regards an information system as a social system, which uses technology. Within the social systems group, there are those who look to science and the classic scientific method as the appropriate reference for IS/IM research and those who look to the humanities, for example, anthropology and sociology, for research and teaching models. Taking these two views of IS/IM, it is now necessary to discussion whether or not IS/IM is, indeed, an emerging discipline.

IS/IM as an Emerging Academic Discipline?

An academic discipline can be defined as an institutionalised subdivision of the various activities making up the academy. It is, thus, an organisational and bureaucratic concept, effectively determined by socio-political considerations (Becher and Trowler, 2001). IS/IM has incorporated critical or core theories from its older reference disciplines. These theories have been acquired adventitiously or have been historically contingent (Hirschheim and Klein, 2003). Articulation of theories is provided and a unified explanation of established empirical facts and generalisations does exist, thus satisfying Kuhn's requirements of a discipline (Kuhn 1970). Agencies such as the AIS (Association of Information Systems) and the UKAIS (United Kingdom Academy of Information Systems) are attempting to regulate the IS/IM academic discipline and perform the gatekeeper role of what constitutes knowledge and what is accepted as community knowledge.

Indeed, IS/IM it is suggested, as being one of the fastest growing 'disciplines' in the history of academic life (King and Lylytinen, 2003). Nevertheless, King and Lylytinen, suggest that the discipline of IS/IM has been losing strength due to reduced professional job opportunities and the disillusionment that followed the collapse of the economic boom that was linked directly to IT and the IT e-revolution. Baskerville and Myers (2002) argue however, that IS/IM is not struggling, but instead has come of age. The authors propose that IS/IM scholars should take a visible, active role in a larger community of disciplines that apply to IS/IM and argue that IS/IM should be a reference discipline in its own right.

Due to the interdisciplinary nature of IS/IM research, IS/IM scholars have emerged from varied academic backgrounds (Kuhn 1970) such as; organisational science, computer science, information science, engineering, economics, and management science/operations research. As a result, the theories embraced, the methods applied, and the topics addressed by IS/IM scholars are themselves varied, producing the diversity exhibited across the discipline.

IS/IM as an emerging academic discipline has made significant progress regarding sociopolitical legitimacy (Whitley, 1984) a concept perceived to be fundamental for a discipline to be seen as a discipline. IS/IM is seen as being integral to today's organisational and economic contexts and the acknowledgement of its importance can be seen in academic accreditation bodies, and the presence of IS/IM academic departments and degree programs³ at most public and private universities. A unifying academic society does not exist completely, but there are signs that several leading societies are merging or planning to merge, i.e., the recent (2005) association between the United Kingdom Academy of Information Systems (UKAIS) and the Association of Information Systems (AIS).

Although IS/IM can be seen as an emerging academic discipline, in the commercial world, IS/IM is much more embedded into the workings of society, business and commerce and social enterprises. Society now relies on IS/IM for both efficient and effective operations, in terms of food production and delivery, health care and education, etc. However, there continues a debate as to whether or not IS/IM is a profession, like law, or medicine. IS/IM professionals are viewed as being members of a semi profession (Etzioni, 1969; Beynon-Davies, 1999). However, it is argued below that IS/IM could be conceptualized as a new profession.

³ With most post graduate courses to PgDip level receiving quota funding, which indicates the importance of the skills of IT/IS to UK Plc.

IS/IM as a New Profession?

IS/IM is just one of many occupations that are grappling with the tensions and contradictions determining whether or not they can be 'regarded' as a profession based on existing academic classifications. IS/IM is just one of many new occupations that need time to adapt and evolve in this transition period with its mix of old and new professional values, thus allowing it to be established as a new profession. The emergence of new professions can be seen through a process of specialisation or in response to changes in the nature of commerce, the values of society and advances in technology (Ciborra, 2004). This correlates with Downie's (1990) argument that the concept of a 'profession' is, and always has been a developing one and is therefore subject to change, like the concept of a discipline. The concept of a profession is now far less about privilege and status now; it is more about a profession's role and contribution to a post-industrial society that is comprised of knowledgeable and discerning clients (Downie, 1990). Therefore, IS/IM can and should be seen as a new profession.

Having contextualised the nexus within the domain of the university and having provided sufficient background discussion on IS/IM, it is now necessary to present my personal *raison d'être* for engaging in this area of study along with an academic justification as to the value of this research.

Personal Rationale

Since joining the Scottish higher education sector as a student in 1987 (after an earlier short-lived career), I became fascinated and intrigued as to how the lecturers who taught me were informed as to the subject matter they were teaching.

As I progressed through my undergraduate degree and subsequently graduated, I was offered a one-year temporary teaching contract, teaching elementary IT/IS to HND students and first year degree students. Although daunting at first, these experiences were interesting and enjoyable. I subsequently undertook a Master of Science degree and rejoined the same department as full time lecturer. However, it was at this point that I started to question the role of an academic, the function of a university, and in particular, what informs an academic's teaching practice. Compounded by my own experiences as a lecturer, a senior lecturer, a senior manager and a consultant, I found the distinctions of an academic's work and activities to be unclear and, indeed, they seem to blurring more with each year of my career in higher education. Like Ozga (2000), who raised in her work the idea of contesting educational policy, I found myself contesting educational policy and practice and being confused as to the centrality of the tasks and activities I was now expected to undertake and achieve in a new managerialist⁴ environment.

Over the years, I have been attempting to make sense of the internal struggle I, and, I suspect, other academics have with balancing the roles, responsibilities and duties now expected or perceived to be expected of academics in contemporary higher education. These internal dilemmas and struggles are compounded by a continuing search to answer some of the following questions:

⁴ Based on the work of Pillott, (1990), where the professional class is being required to demonstrate more accountability to the system/state and it is losing responsibility for autonomous decision-making practice.

- Are 'lecturers', 'teachers', 'researchers' the same thing in higher education?
- Was teaching the element that made you an academic or research, or a mix of teaching and research? On the other hand, is being an 'academic' something different to being a teacher and a researcher?
- Was my function within the university, to be an excellent teacher? Alternatively, was it to be an excellent researcher? Alternatively, was it to make money through income generation/knowledge transfer for my department and the University? On the other hand, was it all or part of these activities?
- Where should my loyalty be? To my students? To my department? To my institution? To my academic discipline? To the profession of Information Systems and Information Management? On the other hand, to myself? Would a change in where my loyalties lie, entail a change in what I should be doing and how I actually would go about doing it?

Given these sometimes conflicting demands on professional practice, I started to question my so-called chosen profession as an academic in higher education in the area of IS/IM. It was this confused and sometimes contested understanding of my 'profession' that gave birth to this thesis. I had hoped to make sense of the often taken for granted assumptions regarding what informed my teaching practice and what should be informing my teaching practice in IS/IM.

This 'sense making' (Weick, 1995) view of the work presented here, is an attempt to provide a set of ideas with explanatory possibilities rather than a body of knowledge. Sense-making seeks to structure the unknown by placing stimuli into some kind of frame of reference, which allows one to "comprehend, understand, explain, attribute, extrapolate and predict" (Starbuck and Milliken 1988, p 51). The discussion during this thesis attempts to make explicit what is implicit when attempting to explore the research aim, presented later on in this chapter.

This sense-making was reawakened and confirmed during a visit to Kingston University in 2002 where I met Peter Scott, its Vice Chancellor, who wrote the following:

“We are all researchers now ...teaching and research are becoming even more intimately related ...in a ‘knowledge society’, all students – certainly all graduates – have to be researchers. Not only are they engaged in the production of knowledge; they must also be educated to cope with the risks and uncertainties generated by the advance of science.” (Scott, 2002).

Scott argues that all academics are now researchers and that all academics need to be engaged in and with teaching and research, along with their post-graduate students. This argument confused me and amplified my original concerns and my fragmented understandings and dilemmas about the interconnections and interrelationships between teaching, research, scholarship and consultancy.

Finally, the intent to study this area was supported by a piece of coursework (for the EdD) I undertook for Research 2b, for which I organised and ran a focus group⁵ comprising seven academics from within my Division (Business Information Management, Glasgow Caledonian University). The aim of the study was to investigate staff attitudes and experiences between teaching and research and how one might be informed by the other. The findings (based on a cross section of new and experienced teachers and researchers, within my Division) highlighted that not only was the topic area of interest to staff in my Division, but there existed little evidence to support the premise that good teaching was a product or as a result of being research active.

Although I had personal motivation, coupled with a professional interest, additional work was undertaken concerning the areas’ academic suitability, before finally selecting this area to research. This additional work is presented and discussed below in the form of an academic justification to help ground the suitability of the topic being explored.

⁵ This focus group data does not feature in this research, but it did act as a catalyst for developing this area of study as a suitable area of doctorate level engagement.

Academic Justification

Ramsden and Moses (1992) suggest “few beliefs in the academic world command more passionate allegiance than the opinion that teaching and research are harmonious and mutually beneficial” (p 273). Indeed, in a Higher Education Funding Council of England statement in 2000, it was stated that:

“Most academics argue that good research is necessary for good teaching. However, there is a difference between academics being engaged in creating new knowledge and being alert to developments in their subject, including new discoveries, so that they can interpret and reinterpret the knowledge base of their subject to inform their teaching. Teaching needs scholarship, and scholarship depends on, and is distinct from research. What is required is for teaching to be animated by scholarship, and for scholarship in turn to be informed by research. We propose that HEFCE should make it clear that its funds for teaching include an element to support scholarship.” (Higher Education Funding Council for England, 2000, p 4).

Discussions surrounding the topic area of a nexus between teaching and research have received new attention. The most recent White Paper on higher education for England and Wales (DfES, 2003⁶) overtly states that, based on a review of the ‘evidence’, there exists no link or relationship between teaching and research. What is interesting here is the lack of separation between the existences (or not) of a link between teaching and research, and the quality and robustness of the evidence, that surrounds the body of existing knowledge on a nexus between teaching and research.

Nevertheless, on the front page of the Times Higher Educational Supplement on 2nd May 1997, Prof Graham Gibbs is reported as saying “that there was now conclusive evidence that academic experience in research was unrelated to excellence in teaching”⁷ (Gibbs, 1997).

⁶ Paragraph 2.7.

⁷ Gibbs, however in later work on the nexus did appear to change his mind, when he moved from a teaching-led university to a research led-university and argued that universities were failing to take seriously the distorting effect of research on teaching (Gibbs, 2002).

Indeed, other authors have attempted to undertake a statistical examination of the nexus between teaching and research. By looking at correlations between teaching effectiveness and research excellence (Fieldman, 1987; Fox, 1992; Hattie and Marsh, 1996; Marsh and Hattie, 2002) have suggested a marginal benefit on teaching effectiveness exists from research excellence, if at all.

Qualitative data focused research undertaken by authors such as Neumann, (1992; 1993; 1994) (see Chapter Two for a fuller discussion), however, suggest that academic staff perceived a nexus between teaching and research to exist. Indeed, this perception suggested that the nexus between the two was in fact symbiotic. This symbiotic relationship was, in reality, seen to be a strong link, which was further perceived to be critical for universities to be universities and for students to learn. It must be stressed that many of the qualitative, and to some extent, the quantitative studies to date on the nexus between teaching and research have been undertaken in subject areas that have well established protocols regarding teaching, research, traditions about knowledge and what constitutes knowledge. Conversely, no studies have concentrated on a new emerging disciplines or new professions such as IS/IM.

Hounsell (2002) suggested greater insights (when referring to understanding the nexus between teaching and research) will occur from 'bottom up' research from members of the community or discipline, rather than solely the policy makers, educational managers and students who have featured in previous qualitative and quantitative studies on the nexus between teaching and research.

Given this personal and academic justification for studying this area, the following aim and research questions were developed to explore further the areas of teaching, research and scholarship and to incorporate the elements of consultancy and the influence of an emerging discipline on the nexus between teaching, research, scholarship and consultancy.

Aim of this Research

Focusing on the discipline of IS/IM the aim of this research is to penetrate, through empirical investigation, beyond the rhetoric of the nexes between teaching and the following: research, scholarship, and consultancy, in the teaching of taught postgraduate programmes of study.

To help fulfil this goal and to guide the research, a number of research questions were developed. These are presented below:

Research Questions

1. How do IS/IM academics experience and perceive the nexes between teaching, research, scholarship and consultancy?
2. How are the nexes operationalised in the teaching of taught postgraduate IS/IM programmes of study?
3. What issues are evident and impact on a nexus between teaching, research, consultancy, scholarship and, specifically, does the emerging discipline of IS/IM influence the nexus when informing the teaching practice of taught postgraduate IS/IM programmes of study?

Having presented the aim and the research questions, it is important to demonstrate the learning that has occurred, during this research journey and is evident in this and subsequent Chapters, thus allowing the reader to appreciate the content and the structure of this thesis.

My Learning Process

The learning processes is graphically presented in Figure 1.2, it can be characterized by incremental improvements in understanding throughout the whole journey, but also by abandoning preconceived ideas, struggling to see the wood for the trees, and trying to overanalyze data to find the “right” solution. At times, it felt like driving a car at night in an unfamiliar town, where only the next bend is visible and, all that was guiding me was a small map of research questions on the wall. Elements of my learning are demonstrated as:

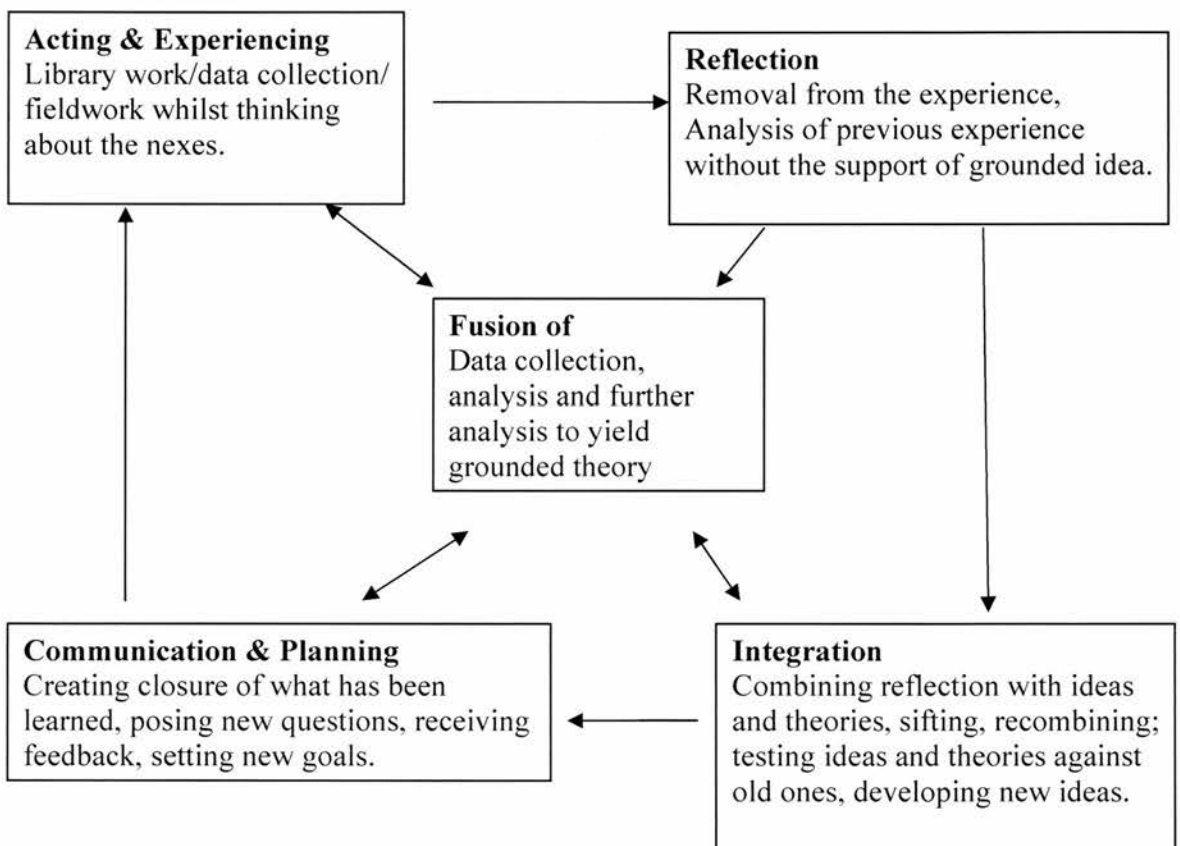


Figure 1.2 - The Learning Process of this Thesis (adapted from Woodharper, 2004)

Having provided an outline of my learning process, it is now necessary to provide an overview of how this learning has come about, evidenced in the subsequent Chapters within this thesis.

Structure of Thesis

Having presented and discussed the motivations, the academic rationale and the material needed to contextualise the work, this opening chapter to the thesis concludes with a description of the structure of the thesis.

The literature review forms Chapter Two. It begins with a detailed discussion of the elements of teaching, research, scholarship and consultancy, before moving on to the nexes between these elements. This chapter concludes by identifying ‘gaps’ and issues in the literature that are pertinent to this research.

Chapter Three introduces and examines the research design and methodology used. The chapter opens with a discussion of the philosophical assumptions, which underpin the research. This is followed by a detailed discussion as to the research methods used, their rationale and how they were developed and implemented. The final part of the chapter describes, in detail, the data collection and analysis techniques used in this research.

Chapter Four focuses on the findings from the research methods used and presents the evidence informed by the results from the web-based questionnaire and twelve semi-structured interviews. It includes insights and interpretations of the data, which provides the foundations for Chapter Five and elements of Chapter Six.

Chapter Five focuses on specific findings, via a discussion of seven themes and one selective theme, which are related back to the literature and developed based on the evidence presented in Chapter Four.

Chapter Six, the final chapter, opens with a reappraisal of the research design and methodology. It offers personal reflections to assist others when considering future research designs when exploring possible future research areas relating to the nexus between teaching, research, scholarship and consultancy outlined in this chapter. The final part of this chapter discusses implications for academic practice in IS/IM and it suggests how the nexus could be re-conceptualised in the future.

Chapter Two Literature Review

"Teaching and imparting of knowledge make sense in an unchanging environment. ... Nevertheless, if there is one truth about modern man it is that he lives in an environment that is continually changing. The only man who is educated is the man who has learned how to learn ... how to adapt and change ... who has learned that no knowledge is secure, that only the process of seeking knowledge gives a basis for security."

Carl Rogers (1902-1987)

Introduction

This chapter critically examines the work of theorists and practitioners who have attempted to provide guidance on the differing ways of conceptualizing and making sense of the complex and multifaceted area of the nexus between teaching, research, scholarship and consultancy.

Context

For many academics today, teaching and research in their discipline constitute the major functions of academic work (Coaldrake and Stedman, 1999). However, Brown and Atkins (1997) suggest an additional dimension to the professional practice of a university lecturer, that of course administration and management (which includes university committee work). Nevertheless, how these pursuits are balanced, harmonised and integrated is problematic, since there is still an ongoing debate as to the existence of a nexus between teaching, research and scholarship. Although, there has been much discussion regarding a possible nexus between teaching, research, and scholarship, there has been little debate regarding the nature of the relationship(s) and how these activities link to inform teaching. It is this lack of fundamental engagement, which may result in the academy losing a dimension that could inform teaching practice (Robertson and Bond, 2001).

In addition to this lack of fundamental engagement, academics' engagement in consultancy is a further element, which may have an impact on the nexus between teaching and research, especially in academic disciplines that pride themselves on the

ability to apply their knowledge base to real life settings, problems and environments, such as medicine, law, IS/IM, etc. However, this possible component in the nexus jigsaw has largely been ignored along with the notion that the academic discipline at the micro and meso level may have an impact on the nexus between teaching and research.

Inevitably, the growing combination of changes in higher education have had profound consequences for what academics have traditionally regarded as their core activities, those of teaching and research (Zubrick, et al 2001). It has been suggested that, over the past decade or so, there has been a gradual, often structural, separation between research and teaching (McNay, 1999). This has fuelled a growing rhetoric of misrepresentations surrounding the nexes between teaching, and research, since the ‘knowledge factory’ supersedes the ‘medieval community’ of scholars (Robertson and Bond, 2001).

The Roberts Report (2003) has acknowledged this separation. The report states, in its review of the UK Research Assessment Exercise (RAE), that roughly a quarter of HEIs, subject bodies and stakeholders support broadening the parameters to embrace research that develops either the pedagogy or the teaching subject matter in any given discipline. The narrow focus with regards research in the RAE2001 has encouraged academics to focus on research in the subject area at the expense of teaching quality by operating a rewards-based research assessment process in the absence of a parallel process for teaching (McNay, 1999). This may be perceived to have driven wedges between teaching and research, jeopardising the fulfilment of government policies in both areas.

Policies to bring research and teaching together may result in some academics reconfiguring current practices. Integrating research and teaching could support the move towards student-focused approaches when teaching advocated by Prosser and Trigwell (1997a). At a further level, however, closing the gap between research and teaching raises substantial questions regarding the roles and responsibilities of higher education institutions; the nature of academic work; the kinds of disciplinary

knowledge that are developed and by whom, and the nature of the teacher-student interaction. Indeed, it raises fundamental questions regarding the purposes of the academy (presented in Chapter One).

The UK Robbins Report (1963) recommended that university staff should both teach and perform research because:

"The element of partnership between teacher and taught in a common pursuit of knowledge and understanding, present to some extent in all education, should become the dominant element as the pupil matures.... It is of the utmost importance that the ablest, who are capable of going forward to original work, should be infected at their first entry to higher education with a sense of the potential of their studies." (UK Robbins Report 1963, para 555).

The DfES White Paper in 2003 regarding the future of higher education (HE) in England and Wales (based on a limited critique of the work of Hattie and Marsh (1996) and Marsh and Hattie, 2002) and others), contended that no direct relationship appeared to exist between teaching and research. This report signals to the HE community that Government thinking, and thus subsequent policy implementations by funding agencies such as Higher Education Funding Council of England (HEFCE) and potentially the Scottish Higher Education Funding Council (SHEFC), may start to separate the thinking, funding and understanding the possible nexus between teaching and research, thus supporting McNay's earlier views.

Even so, the suggestion that teaching and research should be more closely connected or associated should not be seen as an argument for educating all students to become academics or researchers, nor should academics use the nexus to suggest they should engage with research (Brew, 2003a; 2003b; 2004). Rather, it is a response to changes in HE, such as new managerialism; growing interference in the academy (Brew, 2001) from Government and government agencies; changes in funding and resources levels; the changing nature of teaching, research, etc, that has necessitated the debate regarding the nexes to be re-conceptualised. Indeed the changes in HE from an elite to a mass education system (Trow, 1973, cited by Hounsell 2006); with more part time and mature students with differing educational backgrounds and aspirations (McInnis,

2000; cited by Hounsell, 2006) entering HE now suggests that universities are undergoing radical change.

Therefore to unpack the complexity that surrounds the nexus between teaching, research, scholarship and consultancy several concepts need to be unpacked, namely university teaching, research, scholarship and consultancy.

University Teaching: a Changing Concept

One historic view of teaching is that teaching is the process of transferring knowledge or, as Barrow (1991) claims, 'the delivery of knowledge' from the teacher/expert to the student. The educational process experienced by participants in higher education can be illustrated as one where students not only achieve the particular objectives of a course, but also in so doing, fulfil the general educational aims of autonomy, of the ability to participate in reasoned discourse, and of critical self-evaluation (Barrow, 1991).

The traditional orthodox view of academics as 'teachers' in higher education was that they [teachers] held the educational power and that they, via the exercise of their professional judgement, designed, taught (usually in a didactic manner) and assessed the student rather than exploring the subject in partnership or collaborative way.

However, with the introduction of a number of educational change initiatives over the last decade or so, such as life long learning, social inclusion, modularisation, student centred learning, problem based learning and, personal development planning, this has required a change in how teaching is conceptualised and operationalised.

MacFarlane suggests that learners interact with teachers in three categories (MacFarlane 1994):

- Structuring knowledge;
- Facilitating knowledge;
- Managing the learner's interaction with knowledge.

MacFarlane introduces the idea that structuring knowledge may require teachers to become more 'academic' and research-active. MacFarlane suggests in order to be effective at structuring knowledge, a deeper understanding and awareness of scholarship and research is needed, this emphasis strongly supports the existence and enhancement of a nexus between teaching and research, and teaching and scholarship, but it also highlights that a perceived difference between scholarship and research exists. What is interesting, is the distinction MacFarlane states, but never unpacks, that of 'academic' and 'research-active'. Based on MacFarlane's view, one can be academic, and not be research active, and one can be research active and not be academic, which highlights the complexity surrounding the relationship between teaching and research explained in this work.

Embedded in this transformation is the realisation that teaching means more than instructing, performing and disseminating knowledge, and, instead, it extends to providing a context in which students can engage productively with subject matter (Ramsden and Moses, 1992).

Nevertheless, it is anticipated that, for staff engaged in teaching and the facilitation of student learning, they should actively engage in research, if they are to be effective teachers. By engaging in research, individual academics would participate in active learning, i.e., using knowledge in real situations and operating effectively in the four essential aspects of learning identified by Kolb (1983).

Learning

Kolb developed a simple framework to show how learning can be achieved, and views learning as essentially a circular process.

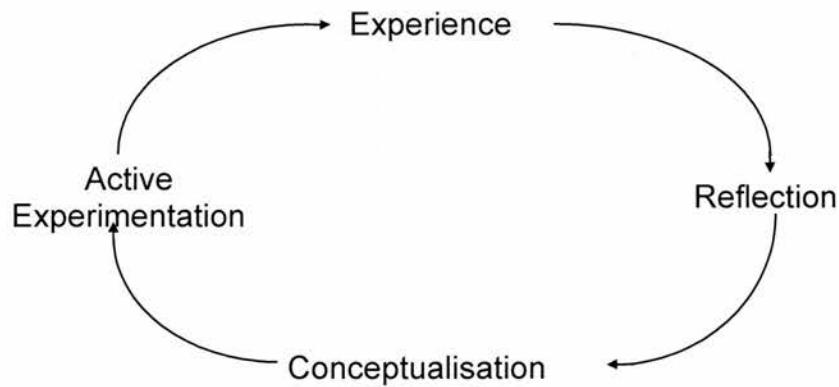


Figure 2.1 - Kolb's Learning Cycle

Kolb proposes four stages in any learning process.

Experience

At the heart of the learning process is an experience of some kind.

Reflection

Learning does not ensue automatically from experience. It first requires reflection, to try to contextualise the experience into some kind of perspective.

Conceptualisation

Because of this shaping or ordering function of reflection, the learner will draw on concepts to gain understanding or explanation of the original experience. This use of abstract concepts involves the learner's integration of theoretical knowledge into practical application.

Active experimentation

The learner actively experiments with the concepts developed and returns to the original experience to test out how valid or useful the newly derived understanding might be.

Of course, the cycle could, and usually does, begin at the point where the learner reflects further, refining or seeking new concepts, and experimenting. The process, if one were to be strictly accurate, should perhaps be described as a spiral, since with the development of understanding, the original experience is continually being developed (Grant, et al 2000). Thus, the learner never actually returns to the original starting place. Kolb argues that the learning process can begin at any stage of the cycle if the learner moves clockwise. Kolb's model suggests that learning is not an entity but rather a process.

Research into teaching in higher education has tended to focus on inputs, processes and outcomes in the context of how university teachers perform their teaching, their conceptions of teaching and learning and their perceptions of the teaching environment (Prosser, Martin et al, 2005; Trigwell and Prosser, 1996; Prosser, Trigwell and Taylor, 1994; Entwistle and Marton, 1994; Martin and Ramsden, 1992). The evidence from such research has led many HE institutions to re-configure what is taught and how it is taught and assessed. There is a climate of increased accountability and responsibility of staff and a growing shift for students to become more independent and autonomous learners. Associated with these changes is the emerging view that teaching is about the facilitation of learning. What informs these practices has yet to be explored and clarified fully. Very little is known regarding how research, consultancy, and scholarship inform the teaching of taught postgraduate students in IS/IM.

What has become clear, building on the work of Gibbons (1997) is that there is now a clear strategic intent by certain universities to shift teaching away from Mode One Knowledge Transmission and towards Mode Two. Mode Two knowledge is created by communication and negotiation both in and outside the academy rather than Mode

One, where the teacher lectures the student with facts (Starkey 2001). This has led to a re-conceptualisation and, to a lesser extent, a re-engineering of teaching, the process of teaching, and the role and duties of academics, in some universities such as Glasgow Caledonian University.

A current view of teaching in keeping with Gibbons Mode Two is suggested by Brew (Brew, 2004). Brew posits that it is research that leads to knowledge generation and knowledge acceptance, and that this is formed and shaped by a disciplinary research environment. Brew's view of teaching illustrates not only that research and scholarship inform the teaching process, but that what is taught and what is expected and considered knowledge by a discipline impacts on how it is taught and how the lecturers' practice is informed. This suggests that learning may be the 'glue' or the 'membrane' that holds the nexus between teaching and research together.

Students are seen as being short-changed if they are not learning from lecturers working at the 'frontiers of knowledge', while researchers are hardly worth 'their salt' if they are not regularly reporting on their latest findings to postgraduates and, increasingly, undergraduates (Hughes and Tight, 1995). Yet, how this interaction and co relationship occurs in reality is not made explicit.

One of the core problems when attempting to make sense of the nexus between teaching, research, scholarship, and consultancy is the lack of agreed consensus that exists regarding the definitions of teaching. People view teaching differently and it is this lack of agreed consensus that clouds the nexus. Furthermore, such unclear views complicate interpretations of studies reporting on the nexus.

Academic Research: a Multi-faceted Concept

Brew suggests that the whole area of academic research occupies contested space, intellectually, socially, and politically (Brew, 2001). Others have suggested that research in the twentieth century has been conceptualised too narrowly as the publication of fundamental knowledge based on technical rationality (Scott and Awbrey, 1993; Rice, 1992; and Schon, 1995). Defining research is complex and many interpretations exist. A few are outlined below.

For some academics, research is the progressive extension to scholarly activity, which may or may not be labelled scholarship. For others, such as Brew, research is not only about scholarship, but that research is the process that generates, tests and validates knowledge (Brew, 2001). Brew's work, contends that it is knowledge and the process of creating and discovering knowledge that are the essence of research. This 'knowledge view' of research has been well documented and discussed, prior to Brew (2001) in the nexus literature. Powers and Knapp's view of research, being "research is a systematic process of investigation, the general purpose of which is to contribute to the body of knowledge that shapes and guides academic and/or practice disciplines" (Powers and Knapp 1995, p 48), illustrates this knowledge emphasis. Indeed, Elton suggests that research is about re-interpreting existing knowledge to form 'new' knowledge (Elton, 1992). Finally illustrating a policy view, [research is] "the generation of new knowledge and understanding continually improves our quality of life on every level" HERO – Research in the UK, 2006.

Scott (1990) and Brew (2001) suggest that research is not just a matter of knowledge transfer for economic gain, but a guiding force that shapes the morals, cultural identity and cultural expression of, and for, the well-being of society. This creation of cultural expression (Scott, 1990) allows individuals to share and debate intellectual ideas that make sense and challenge the cultural consequences that the science and economic view of research has created. Research also allows society to express its cultural identity. Research can provide a source of intellectual, ideological language, which shapes our political and private lives (Scott, 1990). Brew also adds an additional

avenue of enquiry with regards conceptualising research and its associated different meanings and activities. Brew (2003a), building on earlier work (Brew, 2001), undertook one of the largest qualitative studies in this area. However, the boundary of the work, focused on research and only research. In particular, Brew questions:

“The taboos of academic research and suggest that the academy needs to reclaim the research agenda by developing new forms of research, which will provide a new justification for its existence” (Brew, 2001, p 1).

Brew analysed 57 interviews to determine how academics (a mixture of active, semi active and non-active research staff in Australia) viewed research (Brew, 2003a). After discourse analysis of the interviews, Brew develops four apparently distinct yet, overlapping views of research:

The domino view of research. Where the researcher focuses on the solutions to a problem and the answering of questions (Brew, 2003a).

The trading view of research. In the foreground are the products of research, the end points, i.e., journal publications, grants, and social networks. Both the domino and the trading view of research are linked via peer recognition and reward. (Brew, 2003a).

The layer view focuses inward as the focus of awareness is on the data containing ideas together with hidden meanings (Brew, 2003a). Here, research is interpreted as a process of discovery, uncovering or creating underlying meanings (Brew, 2001).

The journey view, “in the foreground, are the personal existential issues and dilemmas of the researcher, linked through and awareness of the career of the research and viewed as having been explored for a long time” (Brew, 2003a, p 7).

The aforementioned results of research, coupled with Brew’s views, indicated that research is a concept, widely acknowledged but not fully understood, and that no universal common understanding exists. This means that when researchers, practitioners, and policy makers discuss and measure/explore the research-teaching nexus, there is no common understanding as to what each means. Hounsell (2002) suggests that:

“A search for commonality of impact of research on teaching has underplayed differences in how research is conceptualised, organised and communicated in different disciplines. These subject differences have a strong influence in opening up (or closing down) opportunities in how undergraduate students can engage with the leading edges of a discipline and thus on how research might enrich teaching” (Hounsell, 2002, pp 6-7).

Some academics in the UK often perceive research as being similar to the essence of scholarship. Therefore, it is necessary to separate these concepts to allow the nexus to be systematically explored.

Scholarship

In his work for the Carnegie Foundation for the Advancement of Teaching, Boyer (1990), set out the case for a more inclusive view of what it means to be a scholar, recognising that knowledge is acquired through research, synthesis, practice and teaching. While scholarship used to mean engaging in original research, scholarship now has a broader and all-inclusive meaning. This wider interpretation goes beyond the age-old teaching versus research debate and suggests that academics within academic disciplines need to consider four separate, yet interlocking aspects of scholarship:

- *Scholarship of Discovery*
- *Scholarship of Integration*
- *Scholarship of Application*
- *Scholarship of Teaching*

Scholarship of Discovery

The scholarship of discovery, at its best, contributes not only to the body of knowledge but also to the intellectual climate of an institution. It is a scholarly investigation, closest to what is meant when academics speak of "research," that confronts the unknown and creates new knowledge. The outcomes, together with the process, and especially the passion, give meaning to the effort of research.

Scholarship of Integration

A serious, disciplined work that seeks to interpret, draws together, and brings new insight to bear on original research. Such work is increasingly important as traditional disciplinary categories prove confining, thus forcing new topologies of knowledge to emerge. This scholarship also means interpretation, fitting one's own research or the research of others into larger intellectual patterns.

Scholarship of Application

Scholarship of application is a dynamic process of creating new intellectual understandings arising out of theory and professional practice. The term itself, may be misleading as it suggests that knowledge is first "discovered" and then "applied".

Scholarship of Teaching

A process that transforms and extends knowledge while transmitting an intelligible account of existing knowledge to the learners. Trigwell, et al (2000) have expanded Boyer's idea of the scholarship of teaching. They further subdivide the scholarship of teaching into four interconnecting components:

The Informed Dimension; the extent to which the teacher is informed about teaching and learning. Examples of this activity might include; how theories of teaching and learning are used to inform teachers; how often the teacher engages with the literature of teaching and learning and how often the teacher engages with disciplinary literature on teaching and learning.

The Reflective Dimension; how the teacher reflects upon their teaching in order to improve it. An example of this activity would be personal and peer reflection, action centred research, etc.

The Communication Dimension; how and where teachers communicate their knowledge about teaching and learning. Examples of this activity might

include tearoom conversations, departmental seminars, reports, national conferences, and publishing in international scholarly journals.

The Conception Dimension; how the teacher conceptualises teaching.

Kreber (2006; 2003) makes an interesting point, as to ‘the scholarship of teaching’ being different in a teaching and a research focused university. Research-focused universities tend to view the scholarship of teaching, on how the research content and / or the processes associated with a particular discipline can be made part of what is taught. Rather than the teaching focused universities view, which is similar to Boyer and others perspectives, which implies that the scholarship of teaching, is focused on how to teach the particular discipline, in-conjunction with staff reflecting of teaching practice (Kreber and Cranton, 2000).

The disciplinary impact on scholarship has been mooted as being a significant factor when looking and understanding the integration between teaching and research (Pulsen, 2001). This view, suggests that the nexus, needs to be seen as the relationship between the two elements, rather than discrete elements. Yet, the whole area of what is scholarship remains a messy, complex and complicated area of academic life.

Consultancy

This is a trend in higher education, in which university senior managers are looking to reduce their institutions dependency on government funding, by attempting to increase work and enter into collaborations with industry and commerce for financial reward or what could be called ‘academic capitalism’ (Slaughter and Leslie, 1997). This consultancy entrepreneurship is an element, which may be used to inform teaching practice. However, this area has remained unexplored in the nexus literature.

Consultancy may be defined as the application of existing knowledge to an agency, where the problem situation is usually client-specified, in order to solve or diagnose a

problem[s] e.g.: day-to-day problems, longer-term strategic issues, etc or giving advice. However, the distinction in practice between consultancy and contracted academic research is blurred; the general view is that, in consultancy, the academic provides advice to businesses rather than actually conducting the research (Lambert, 2003).

The idea of academic staff undertaking consultancy is widespread in a number of academic disciplines in the UK, such as Law, Risk, Finance, Marketing, Mathematics, etc. According to the Lambert Review (2003), which reviewed the link between the academy and business, the total income for universities in the UK from consultancy was estimated at around £100 million⁸ in 2000-2001. However, the Lambert Review suggests that the real figure is much higher, as much of the consultancy work undertaken is on a 'private basis' between academics and companies and, thus, can go unrecorded. Indeed, the current market for management consultancy (with includes IS/IM) is now estimated to be valued at just over £10 Billion, in 2003/2004⁹. According to Lambert (2003), most of the consultancy work is undertaken by research-intensive universities, who contract with 175 firms on average compared to 110 for less research-intensive universities (Lambert, 2003). However, in a survey undertaken by the Times Higher Education Supplement of 70 UK universities on consultancy income, it found that although Universities such as Imperial and Cranfield were the largest 'earners' of consultancy income, the ex-polytechnics such as DeMontfort, Coventry and the Robert Gordon University, now featured in the top seven income generation earners (THES, 2006).

There are a number of reasons why academics engage in and with consultancy activities. Since the HE environment is changing, it provides a creative outlet for their talents and creative expressions (RCD, 2006). Many see the role and value adding of 'doing consultancy' as keeping their skills marketable in the new

⁸ Higher Education Business Interaction Survey 2000-01, HEFCE, 2003 (quoted in the Lambert Review, 2003).

⁹ Statistic taken from the Institute of Management Consultancy, newsletter, March 2005.

MacDonaldizations¹⁰ of HE (Larwood and Gattiker, 1999). Many argue that undertaking consultancy allows the academic to earn extra income and gives them a sense of professionalism as practitioners in their field's not *'just'* academics or educators or lecturers (Larwood and Gattiker, 1999). Indeed many academics who undertake regular consultancy see it as a benefit to them, the client and to their students. Consultancy may be seen as a professional odyssey, which links their teaching to real life experiences. Evidence can be portrayed to students to make sense of key ideas and concepts. Such 'real life' case evidence can be published, thus allowing academics to be recognised as experts in their field on a national and international basis. Indeed, many argue that the most significant innovations are really being developed in organisations and not in the academy (Foresight, 1999). For applied and rapidly changing disciplines such as IS/IM, feeding back information from consultancy activities may be critical to ensuring that what is being taught to students is what is being done and required by industry and commerce.

However, the whole area of academic consultancy tends to be linked with the funding of universities, via mechanisms like contract research and collaborative research, as expressed in the Lambert Review (2003), rather than how the experiences of undertaking consultancy feeds and or enhances students learning and teaching or in 'being an academic'.

Although, the word consultancy does not explicitly exist in many educational policy documents, such as the Dearing Report (NCIHE, 1997a), and the Garrick Report (NCIHE, 1997b), there is an implied presence. This implied presence is more to do with an earlier 'warning shot' to encourage the HE sector in the UK to demonstrate value for money, and a concern in government policy thinking, which is only now becoming centre stage, regarding the competitiveness of the UK on the world education and research stage, which needs to be strategically managed (Porter and Ketels, 2003). This research on the competitiveness of UK Plc, suggested that insufficient knowledge transfer was happening between the academy and industry.

¹⁰ Defined as the standardisation, rationalisation enforced quality regimes, same educational experience no matter were a student studies, based on the work of Ritzer (1996) – The MacDonaldization of Society, etc).

An increase in knowledge transfer which would help UK Plc to become more attractive to receive external funding that is deemed to be of relevant to the needs of industry. Indeed, in the supporting research and scholarship current policies in the UK will deploy, over £14 billion pounds worth of research was undertaken in 2005/2006, with only £4.5 Billion being allocated by the UK Research Councils¹¹. Of this, only £100 million will be provided by the Scottish Funding Council, with the strong strategic steer that initiatives like the Industrial Partnership Development Fund (IPDF) and Employer Partnerships and Knowledge Transfer Partnerships (formally Teaching Company Schemes) with Scottish HE are important.

Interestingly, in the National Report For Business Education Support Team on the analysis of the QAAHE Business and Management Subject Review Reports (2001), in 2005 by Ottewill and MacFarlane (2005), (where IS/IM sits in the LTSN network), the ‘best practice’ factors that contributed to high teaching quality and enhancement ratings, found no mention or evidence that consultancy featured in the learning and teaching strategies of the highly rated teaching institutions. This lack of explicit usage only compounds how academics perceive the role, purpose and function of consultancy and knowledge transfer in the academy and in their professional practices.

This idea of knowledge transfer (assuming the process of research can yield a product that can be applied) is to strengthen links between higher education, society, government, the economy and students, and then consultancy will play a greater part in the function of being an academic. This is reflected in SHEFC's broad definition of knowledge transfer:

“The dissemination and exploitation of the outputs of higher education - research, knowledge, skills, expertise or ideas to achieve economic, educational, social, healthcare and cultural benefits for society’. This desire can take many shapes the most notable are; company spin outs, contract research, consultancy, Knowledge Transfer Partnerships, Continuing Professional Development and staff and student placements” (SHEFC, 2004).

¹¹ Statistical information taken from the Higher Education & Research Opportunities (HERO) Web Site – http://www.hero.ac.uk/uk/research/research_page170.cfm [last accessed 31st March 2005]

Indeed the Lambert Review (2003) stressed that:

“the main challenge for the UK is not about how to increase the supply of commercial ideas from the universities into business. Instead, the question is how to raise the overall level of demand by business for research from all sources” (Lambert, 2003, p 4).

Indeed, consultancy along with other closely allied areas of university activity, i.e., contracted research and collaborative research, indicates that these areas are important to the academy. However, the issue and question of how do these experiences gained by academics practicing their profession outside the academy, filters back into teaching and more orthodox research, is cloudy, and is therefore, worthy of examination.

Having explored the elements of the nexus, it is now necessary to explore the literature on the nexus between the elements of teaching, research and scholarship.

A Synthesis of the Literature Surrounding the Nexes between Teaching, Research and Scholarship

Many authors have publicly commented upon the existence of a set of nexes between teaching and research (please see Appendix One for a graphical view¹²). However, the area remains cloudy. This cloudiness has led to a number of differing and conflicting ways of measuring and conceptualising the nexus. The main approaches are given below.

Teaching – Research Nexus: Correlation Studies

Various authors, including Feldman (1987), Hattie, and Marsh, (1996) and Marsh and Hattie (2002), have attempted to undertake an empirical examination of the nexus between teaching and research, employing a positivistic research paradigm to identify correlations between teaching effectiveness and research excellence. Most authors have tended to opt for a meta analysis methodology, which describes the statistical

¹² Please note, not all the authors portrayed in Appendix One are discussed in this Chapter.

integration of separate studies. The use of meta analysis is defensible, at least in part, since it eliminates the bias evident in the interpretation phases of research, i.e., the difference between fact and interpretation of fact. The effect of bias is reduced since issues of sample size, research design and variables not being compared together as like for like, are factored into the analysis.

Feldman (1987) undertook one of the first meta-analysis investigating the relationship between research productivity and teaching excellence, finding a correlation of 0.12. This suggests a minimal correlation exists between teaching and research. Terenzini and Pascarella (1994) also suggested that the preconceived view that good teachers are good researchers is a myth, stating that, at best, the association between ratings of undergraduate instruction and scholarly productivity is a small and positive one, with correlations in the .10 to .16 range.

Hattie and Marsh (1996), whose seminal, comprehensive meta analysis study of 58 (29 of which were also used by Feldman, (1987)) studies on teaching /research relationships, established similar results in that a nexus did exist, but that the relationship was marginal at best. Based on their chosen studies, 498 correlations were identified. However, their correlation coefficient was 0.06.

Hattie and Marsh (1996) suggest that a weak relationship between teaching and research existed, which indicates no strong or statistically evidence was obtained, not whether or not a nexus existed. They suggested three reasons why no strong or statistically significant evidence was found. Firstly, there is limited “time, energy and commitment” for academics to do both teaching and research well (Hattie and Marsh, 1996, p 508). Secondly, teaching and research “require contrary personality orientations that are contrasting,” (Hattie and Marsh, 1996, p 510). Thirdly, “teaching did not contribute significantly to overall salary whereas research did” (Hattie and Marsh, 1996, p 511). Hattie and March also provided some suggestions that a nexus did exist between teaching and research:

“Academics believe that an active research interest is essential if a person is to be a good university teacher, and that the values associated with both good

teaching are claimed to be high commitment, perseverance, dedication, hard work, creativity, imagination, originality and critical analysis”, (Hattie and Marsh, 1996, p 512).

In summary, their influential research work does suggest a statistical link, although small. Hattie and Marsh’s (1996) work can be regarded as the first comprehensive attempt to bring some order to the literature that preceded it in order to try to make sense of the nexus.

Marsh and Hattie (2002) published a follow-up study to their earlier work, based on a large urban university in Australia, which claims to have both a teaching and research orientation. This research has confirmed the view (according to Marsh and Hattie) that “teaching effectiveness and research productivity are nearly uncorrelated...” (Marsh and Hattie, 2002, p 635). Again, this research followed a positivistic paradigm in terms of measurement, since they only looked at classroom learning and not at other aspects of teaching and learning, such as the role and views of the teacher, how students learn, the significance the disciplinary culture plays, what assumptions are made about the nature of students and how they learn, how staff facilitate this learning, and what is meant by research-led teaching, etc. However, an element of exasperation is apparent in March and Hattie’s work as evidenced by their use of the word ‘nearly’ in their assertions that no links exists.

Finally, the work of Astin (1993) in a study of 200 US four-year undergraduate college students using measures of student development (these measures are not elaborated on in the original paper), concluded that a college whose faculty is research-orientated increases student dissatisfaction and impacts negatively on most measures of cognitive and affective development in the students learning. This like Hattie and Marsh personal views suggests a nexus, but that it is not a positive one in terms of being beneficial to student learning.

Teaching – Research Nexus: an Alternative Stance

Authors such as Neumann (1992; 1993), Smeby (1998) and Rowland (1996; 2000) have concentrated on what faculty, university administrators and managers, and students think about the nexus between teaching and research.

Neumann (1992; 1993) suggests that academic staff believe a nexus exists. Neumann based her premise that a nexus was perceived to exist on 33 interviews with senior academic administrators from the humanities, sciences, social sciences, and professional areas such as accountancy within one university. These interviews were part of a much wider study, which only touched on staff opinions regarding the nexus. Nevertheless, Neumann suggests that this symbiotic relationship (between teaching and research) is what makes a university a university and academics academic. The interview discussions revealed multiple, positive and bi-directional links between the teaching and research, they are summarised below:

“The tangible connection relates to the transmission of advanced knowledge and the most recent facts. The intangible connection relates (a) to the development in students of an approach and attitude towards knowledge, and (b) provides a stimulating and rejuvenating milieu for academics. The global connection describes the interaction between teaching and research at the departmental and not just individual level. These three types of connection are not necessarily separate, clearly distinguishable or delineated connections; they interrelate and intermingle” (Neumann, 1992, p 162).

Neumann speculates on why quantitative studies only indicate a marginal at best relationship between teaching and research, suggesting that this was due to the deeply held values of academics not being translated into day-to-day teaching practices.

Smeby (1998) in a survey of 1592 academics (covering all academic grades) from the four research-focused Norwegian Universities, supported by 35 semi structured interviews, found that over 95% of academics qualified to doctorate level, thought their teaching benefited from their research activities. Interestingly, Smeby’s research also suggests that there is a marginal interconnection between the academics age, rank and level of research activity.

Rowland (2000) (based on twelve interviews of academic heads in one institution), concluded that staff felt teaching and research are closely intertwined, and that it is the university's view of teaching and research that either creates or refutes the existence of a relationship between teaching and research.

Elton (1992; 2001), based on theoretical analysis of the nexus literature and Brew (2001), based on interviewing academic staff in one Australian University regarding the nature of academic research, both advocate that a nexus was perceived to exist. They emphasise that poor understanding of the nexus concept and the definitions of teaching and research have resulted in the inability of quantitative studies to determine the existence of a nexus categorically.

Brew (1999) argues that the relationship between teaching and research should be centred on a wider view of the word 'research' and its link with knowledge. Brew also asserts there are crises in the tertiary sector centred on a loss of confidence in the purpose of universities and the beliefs underpinning a university education as well as the drive to the MacDonalidization (Morley, 2000) of higher education.

Other researchers have attempted to explore the nexus between teaching and research by undertaking analysis of RAE2001 and TQA/QAA scores mainly produced in the UK, (Drennan, 2001; JM Consulting, 2000; Drennan and Beck, 2001; Ellis, 2001). The compilation of RAE and teaching assessment scores allows researchers to measure the relationship between the two factors at the institutional and departmental level. These studies show a strong correlation between RAE and Quality Teaching scores. For example, Drennan and Beck (2001), when reviewing Scottish universities, calculated that over 70% of the variation in the mean TQA (Teaching, Quality Assessment) scores was attributed to the RAE score of the department/university. Drennan and Beck (2001) also noted that the relationship between RAE and Teaching Quality scores was higher for science-based subjects and low for social sciences, thus hinting at the role and significance the discipline may play in the nexus. However, these studies do fail to address institutional reputation and resource factors. When

these are factored into the equation, as suggested by Drennan and Beck (2001), the correlation of a link between teaching and research is found to be 0.10.

Teaching – Scholarship Nexus

Building upon the work of Boyer (1990); Zubrick et al, (2001); Jenkins et al, (2002); and Jenkins, (2005), developed Boyer's framework in an attempt to make sense of the nexus between teaching and scholarship. They concluded that scholarship was the process that seeks to identify, interpret, draw together, and brings new insights to other people's original research with regards current and emerging thinking, with regards personal development of skills, expertise, and knowledge. In addition, authors such as Kreber, (2006) have suggest that scholarship involves the above and reflecting upon teaching practice.

American and UK academics view scholarship and research differently (Brew, 2003a). In the USA, scholarship and research are separated as differing concepts, but in the UK, scholarship was seen as the foundation stone for research (Brew, 2003b; Elton, 1992). Therefore, some care has to be taken with implanting one theoretical framework from one community to another community with a similar but different discourse.

Pulsen (2001) also investigated the idea and nature of the concept scholarship. Interestingly, Paulsen found similar categories to Boyer's. However, one noticeable difference was the idea of the Scholarship of Citizenship, this referring to the myriad of other academic duties that academics face, such as reviewing conference papers, organising conferences, delivering keynote addresses, etc. This introduces the idea that academics 'serve', their community, or their discipline. This legitimises and grounds certain 'acceptable' activities and shuns unaccepted activities and behaviours, similar to the communities of practice notion developed by Lave and Wenger (1991). Communities of practice provide a way of making sense of the common context of meaning that exist within groups where people come together. Wenger (1998) suggests that as people pursue any shared enterprise over time, they develop a common practice that is, shared ways of doing things and relating them to achieve

joint purpose. Over time, the resulting practices become recognisable among those involved and those who join the mutual engagement need to assimilate these common practices to become a full member of the group (Wenger, 1998).

Grant, et al, (2003) have suggested that scholarship may indeed be the glue or the membrane that holds the activities of teaching and research together. This gives an interesting perspective as to how scholarship mediates the relationship between teaching and research. It also suggests contributions made to the nexus by the nature of the discipline, the role of the individual and the role of teaching teams may be more significant than previously thought.

What matters with regards the nexus is not the existence of the event, or the membrane or glue that holds teaching, research and scholarship together, or its intrinsic value, but the role it plays in supporting and feeding teaching and how this can be operationalised and supported.

Teaching – Scholarship/Learning Nexus

The notion of scholarship discussed above, further introduces the idea that the nexus is concerned with learning and that research is a core component of learning and understanding knowledge (Brew, 2001), if conceptualised in a particular way.

Brew and Boud (1995) criticise the emphasis of the correlation studies (discussed above) and they call for "more fine grained studies" (Brew and Boud, 1995, p 272), that should focus on how academics experience and perceive teaching and research rather than the products of teaching and research (which this research explores). They hypothesise that:

"If there is a link between the two it operates through that which teaching and research have in common; both are concerned with the act of learning" (Brew and Boud, 1995, p 262).

Brew and Boud suggest:

"Teaching and research are correlated when they are co-related one way to achieve this is to exploit further the link between teaching and research in the design of courses." (Brew and Boud, 1995, p 272).

Shore, et al (1990) who emphasise the importance of learning in the nexus debate support this view. Shore and colleagues, posit that learning is the vital link between research and teaching as learning is a shared process of inquiry. Research may be one way of enhancing student learning. It is certainly not the only way of enhancing student learning.

However, there is debate here as well. Authors such as Jenkins et al (1998; 2002), when ascertaining students' views surrounding the nexus, posit that a link is perceived to exist and that it is stronger at the higher levels of teaching, mainly at postgraduate work. Indeed this assumption is supported by the research of Lindsay, et al (2002), who found that postgraduate students observe themselves, to be stakeholders in academic research while undergraduate students do not. However, Lindsay, et al's (2002) research design of two focus groups, each with between four and six participants (one group of undergraduates and the other of post graduates) is too small to make any statistical claims, but this does not mean their arguments are unsupported.

Elton (2001) has argued that that there can be a positive perception of the nexus between research and teaching under particular conditions. Elton sees the nexus less in terms of the outcomes (e.g. published papers of staff) but more to the extent to which students learn through some form of student-centred or enquiry (disciplinary) based approach.

Elton (1992) argues that scholarship must be recognised and separately funded from existing methods of funding and teaching in the UK to allow it to flourish. Currently research monies are awarded from central government to universities via their Research Assessment Exercise. Teaching is funded via student numbers via grant in aid to higher education institutions (HEIs). However, the area of scholarship used to

be funded in the teaching allocation and is now assumed to exist as part of the research allocation, but this distinction is in the grey area of policy making.

Brew suggests that how knowledge is perceived will influence the relationship between teaching and research, i.e.,

“If knowledge which is generated through research is viewed as objective and separate from knower’s, it would seem consistent to think that it requires transmission and absorption through a separately conceptualised teaching process. If, on the other hand, knowledge is viewed as a product of communication and negotiation, the links between research and teaching, I believe, are viewed quite differently since the relationship between research and teaching becomes an intimate one” (Brew, 2003a, p 296).

Brew further asserts,

“When teaching and research are both viewed as being founded on a traditional empiricist framework, the relationship is always problematic. A move towards a more pluralistic view of knowledge, which fully takes on board the interpretative nature of academic work means that research and teaching can be viewed as being in a symbiotic relationship” (Brew, 2003a, p 296).

Care should be taken when interpreting and attempting to make sense of the studies discussed above as they all have different research methodologies operating at differing levels of analysis (the university, the individual academic, the individual’s department, and the students who are taught by the individual academic). For many studies, subjective measures were used and many studies were grounded in one higher education institution rather than representing a number of institutions. All have differing educational settings, contexts, countries of origin and concepts of teaching, research, and scholarship. Furthermore, all of the studies to date incorporate personal and intellectual histories, all of which may affect the interpretation of any one study’s findings. Given these concerns, it is necessary to explore several of the key problems in detail in order to make sense of the validity and reliability of the claims made surrounding the nexus between teaching, research, scholarship and consultancy.

Concerns Regarding ‘Nexus’ Studies

There are a number of concerns surrounding these studies, the most significant being the whole area of attempting to define teaching, research and scholarship, the problems of developing appropriate and relevant measuring instruments capable of measuring what needs to be measured and determining what has been measured, what does this mean and why was it being measured to start with.

Ramsden and Moses (1992), when providing a hard hitting review of the early work of Hattie and Overall (1979) (which laid the foundations for the seminal work of Hattie and Marsh (1996; 2004) and Marsh and Hattie (2002), whose work stated that:

“...55 per cent of the studies she [referring to Hattie] looked at, contained “irregular” remarks – statements that overemphasized the importance of the relationship between research productivity and teaching effectiveness, even when the results did not indicate such an association” (Ramsden and Moses, 1992, p 277).

What is interesting about the model proposed by Marsh and Overall, (1979) is that they sought to identify the influential factors in the nexus between teaching and research and how these factors were integrated, without fully engaging with the definition and nature of teaching and research. Ramsden and Moses (1992) are correct to some extent in their critique but they focus on the detail of the how the influential factors were measured and the inappropriateness of the measures employed by Marsh and Overall (1979), rather than exploring the essence of the elements themselves.

An interesting view of the work of Hattie and Marsh is provided by research undertaken by Robertson and Bond (2001) who interviewed academics who had read a review of Hattie and Marsh’s 1996 paper and concluded:

“The study is total twaddle and rubbish..... and that anyone who suggested that there is a zero link between research and teaching obviously lives on another planet to the one I live on” (Robertson and Bond, 2001, p 8).

This emotional response from the interviewees, suggests that emotions run high when exploring the nexus between teaching and research.

Indeed, the DfES White Paper (2003), on the future of higher education in England and Wales, heavily cited Hattie and Marsh, as the evidence base surrounding the view that there was no nexus between teaching and research. However, the authors of the White Paper, have misunderstood or have chosen to misinterpret the statistics provided in the original work of Hattie and Marsh (1996). If Hattie and Marsh's (1996) findings were totally negative, then separating teaching and research funding would be appropriate. However, a near Zero correlation means that there can be as many excellent teachers and researchers as there are excellent teachers, excellent researchers and not so excellent teachers, or researchers, as Zero does not mean that there are no excellent teachers and researchers (Hattie and March, 2004).

All the same, a number of concerns are evident within Hattie and Marsh's work. Studies which tend to ask students to rate teaching, and who request staff to rate their own research outputs and their own teaching practice in class, may in effect create and suffer from a "halo effect" (Zaman, 2004). This effect suggests people will rate what they want to see rather than what is evident and exists. These approaches also assume that each ratee will share the same ideological understanding of what 'good quality' teaching and research is which causes measurement problems. Although students are an important ingredient in any exploration of the nexus between teaching and research, students are inappropriate as their view of teaching, may not fully qualify, as they cannot frame what constitutes 'good quality' teaching (Kolitch and Dean, 1999). For example, being entertaining in class and talking about your own research work which is of interest to students may get a high rating due to the entertainment value, and the currency of the work, but being entertaining and talking about a recent research paper does not mean that the students have actually learned anything. Finally, how does one separate the process from the product of research when evaluating research to inform teaching, as this is both problematic and complex (Zaman, 2004).



Allied to these concerns and in particular Hattie and Marsh's work is the concern regarding their definition of "research activity." Hattie and Marsh equate research activity to individual expertise via the production of journal and conference papers. Measuring research publications in the form of journal and conference papers only measures actual outputs of journal and conference papers. It does not measure the expertise of the individual nor does it measure the knowledge contained within the paper or indeed if and how the paper's findings filter into teaching or how this activity helps students to learn or how good or bad the individual is as a teacher.

Other correlation studies commonly used to investigate the relationship between teaching and research are not without their weaknesses as well. They tend to have only one unit of measurement. Even if a measure could be designed to cover all the variables in and of a nexus or nexes between teaching and research, the whole area reducibility impacts on the claims authors can make. To date, no correlation study has explored fully the strength or the intensity of any relationship between teaching and research. In addition, many correlation studies to date assume a constant level of activity and that time lags (i.e., the run up to something like the RAE or the need to earn extra income or teaching larger class sizes, or the impact of modulations, etc) may have a bearing on the nexes between teaching, research, scholarship and consultancy. These issues do not feature or have fully integrated into their research designs (Zaman, 2004). Regardless of research design, little engagement with the meanings and underlying principle of concepts of teaching and research exists. Furthermore, to date there has been little exploration of the actual artefacts (products of research) and the process of consultancy, has on informing teaching, and in particular, how these interact and inform teaching practices. So far, the emphasis has been on research and teaching output rather than research and teaching effectiveness. Finally, the impact and influence of an emerging discipline has not be incorporated either.

The Academic Discipline as a Contributing Factor

Since the majority of teaching and research is undertaken by academics grounded in their cognate discipline area, the role and significance of the actual academic discipline becomes a critical factor when exploring the nexus.

Becher and Trowler, provide a comprehensive synthesis of what constitutes an academic discipline. These are presented here. Every academic discipline has its own intellectual history, agreements, and disputes about subject matter and methods that influence what is taught, to whom, when, where, how, and why. Each discipline has its own, often '*borrowed*' set of traditional pedagogies, such as lab instruction, problem based learning, fieldwork, chalk and talk, placement learning, etc. Each discipline has its own community of scholars interested in research, and/or teaching and learning in that field, with one or more journals, associations, and face-to-face forums for pedagogy and research exchange happening throughout the academic calendar. Finally, each discipline exercises disciplinary power in different ways and forms that control and who is admitted and what is constituted as that discipline and the '*agreed*' branches of that discipline (Becher and Trowler, 2001).

By taking groupings of disciplines derived by Becher (1989) based on the earlier work of Biglan (1973a, 1973b) the following can be derived:

- *Hard pure knowledge* (of which physics and chemistry are exemplars) is typified as having a cumulative, atomistic structure, concerned with universals, simple causation and a quantitative emphasis. Knowledge communities tend to be competitive but gregarious: joint or multiple authorships is commonplace.
- *Soft pure knowledge* (of which history and anthropology offer cases in point) is, in contrast, reiterative, holistic, concerned with particulars and having a qualitative bias.

- *Hard applied knowledge* (typified by engineering) deriving its underpinnings from hard pure enquiry, is concerned with mastery of the physical environment and is geared towards products and techniques.
- *Soft applied knowledge* (such as education and management studies) is dependent on soft pure knowledge, being concerned with the enhancement of professional practice and aiming to yield protocols and procedures.

In disciplines, such as medicine, where a prominent consensus exists regarding worthy areas of academic endeavour, knowledge tends to be perceived as collective, and concerned with universals, quantification, and discovery (Becher, 1989). Research in these areas mainly takes the form of collaboration, competition for recognition and funding, clearly defined intellectual boundaries, and gate keeping of those boundaries by powerful elite (Becher, 1989). Teaching in these fields often requires little preparation time for large lectures and labs and is designed to enhance logical reasoning (Neumann and Becher, 2002).

In disciplines where a lack of agreement exists, knowledge tends to be seen as recursive; academics use new lenses to explore intellectual territory already mapped by the reference disciplines of others (Becher, 1989). Research activity is characterised by weak, blurring boundaries, independent research efforts, and tolerance for unusual ideas or methods (Becher, 1989). Teaching in these disciplines involves opening curricula to interpretation and debate, much preparation time, small problem-based classes, and the curriculum is designed to foster critical thinking, analysis, synthesis and personal growth (Neumann, 2001). IS/IM is a good example of such a discipline.

The dimension of the discipline and its impact on the nexus has only been speculated on (based on an interpretation of results derived from a series of focus groups within one institution) thus far by Robertson and Bond (2001) and conceptual thinking by Colbeck, (1998). Therefore, to help explore the existence of a nexus the impact and effect of the subject discipline needs to be explored. Hounsell (2002) suggests that:

“Subject differences have a strong influence in opening up (or closing down) opportunities in how undergraduate students can engage with the leading edges of a discipline and thus on how research might enrich teaching” (Hounsell, 2002, pp 6-7).

There are many claims and counter claims, but no public discussion has looked at the domain of IS/IM an emerging discipline (see Chapter One) and whether or not the discipline (in this case an emerging one) creates, develops, and sustains a positive (or negative) nexus between teaching, research, scholarship, and consultancy in the teaching of postgraduate programmes of study.

A number of studies have suggested that the particular discipline may be a critical variable shaping the nature of, and the possibility of, a positive nexus. In particular, in some of the sciences, staff research may be so far ‘ahead’ of the undergraduate curriculum as to make strong connections between staff research and student teaching very difficult (Jensen, 1998).

Smeby (1998) asserts that there appears to be a clear difference between disciplines in how they perceive the nexus between teaching and research. Smeby suggests that disciplines with a strong specialisation will limit opportunities for the nexus between teaching and research to occur and those with fast developments in and of knowledge will, like IS/IM make it an imperative for teachers to be active research.

Colbeck’s research, based on the behaviour and roles of some twelve academics in the USA, were studied in detail, to understand how "university, departmental and disciplinary contexts influence the ways and extent to which faculty integrate teaching and research" (Colbeck, 1998, p 649). Twelve staff in two very different USA institutions¹³ were studied: one 'Vantage' a high prestige research university, (according to Carnegie classification) and a ‘Cosmopolitan’ University (a Masters University). In both universities, Colbeck observed staff from two departments from two contrasting disciplines, Physics and English studies. At Vantage University,

¹³ The names are fictitious to disguise the original host universities

'research' for faculty evaluation was narrowly interpreted to mean standing as an original researcher amongst peers in the discipline. By contrast, at Cosmopolitan University, faculty evaluation for 'research' included the writing of textbooks and creative works in popular media. Of Colbeck's sample of twelve staff, the person who demonstrated the strongest integration between their teaching and research roles was a physicist at the Cosmopolitan University whose research involved writing introductory textbook incorporating new pedagogical techniques. By contrast, at Vantage University, a physicist who previously had written an acclaimed computer aided physics course text had declined to write a follow up because he knew his department colleagues would not recognise the value of such a project (Colbeck, 1998). Thus, it can be seen from the above summary from the work of Colbeck that the disciplinary type and the type of institution may influence or impact on how a nexus is perceived and enacted.

Other Variables that may impact on the Nexus

Institutional perspective

It is quite difficult to differentiate between academic and institutional perspectives due to the lack of precise meanings and understandings of the notion of culture and sub-cultures. Establishing when and how many subcultures (disciplines) become the institutional culture is difficult to identify measure and observe.

Differences in institutional missions and governance may shape opportunities to connect teaching and research. Faculty behaviour is less likely to be controlled by formal bureaucratic rules in research universities than in comprehensive universities (Clark, 1997). In research universities, faculty members tend to be treated like professionals who set their own work agendas and participate in setting organisational direction and purpose. In teaching focused universities, faculty members are treated more like employees and are therefore held more accountable for expected work than research university faculty members (Clark, 1997).

Mission statements of UK universities provide insights into institutional pronouncements on research and teaching. Davies and Glaister, in introducing their content analysis of UK university mission statements, note that this analysis "...is fraught with difficulties, not least in identifying suitable criteria and minimizing subjectivity" (Davies and Glaister, 1996, p 281). In terms of the relative emphasis given in the mission statements to research and teaching strategies they found the following:

"About sixty-one per cent of the mission statements (forty-two in total) gave approximately equal weighting to teaching and research, with a greater teaching emphasis in about thirty-two per cent of the mission statements (twenty-two in total) with most of these mission statements coming from the "new" universities. Only about three per cent of the mission statements emphasized research more than teaching (two in total) these being mission statements from the old universities." (Davies and Glaister, 1996, p 281).

They further developed their content analysis by carrying out a key word analysis, finding that some key words appeared in over forty per cent of the mission statements (quality; teaching; research; community; students; international). While this research is inconclusive with regards whether a nexus exists, it does show the inherent attitude that teaching and research are critical to the life, function and being of a university and perhaps being academic.

The RAE Effect

A substantial proportion of university research in the UK is funded through the Research Assessment Exercise (RAE). Its purpose is to produce high-quality research through competitively concentrating it in selected departments and institutions. It was not expressly designed to have any impact on teaching. However, a number of studies have shown that the RAE has had unintended consequences on teaching (McNay, 1997, Jenkins, 1995).

In a study on the impact of the RAE on geography teaching, Jenkins (1995) found that postgraduates and part-timers rather than full time academics were undertaking greater teaching roles in terms of delivery. Jenkins also observed that the general pattern in

appointments and promotion placed greater emphasis on research productivity, and potential, rather than teaching ability or potential or interest. Jenkins argued that individuals, departments, and institutions recognise that it was in their financial interests to improve their research and that this has been to the detriment of teaching. Elton (1995) also supports the view that, since the 1992 RAE, when the rules were changed to allow all universities to bid for funding, based on the quantity and assessed quality of the research of its staff, this has encouraged increased output for the RAE and a deterioration in motivation and effort in teaching innovation. Individuals are more likely to perceive that their promotion and career prospects will be progressed by being in a high-ranking research department than by being an excellent teacher (Jenkins, 1995).

Brown (1995) also contends that there is little empirical evidence of such a link between teaching and research, but that there is a growing body of evidence that the funding of research through the RAE is having a negative impact on teaching and learning, and in particular, innovative developments. To counter this effect, Elton proposes a more even treatment of research and teaching with the introduction of a teaching, research and development fund, from which resources would be available to researchers who wished to enhance and develop quality in higher education pedagogy, rather than try to fit within current RAE classifications (Elton, 1995).

Perhaps a more informed way to conceptualise and explore the nexus debate would be to move away from thinking how active in teaching and research an academic is, but to concentrate on what the activity is focusing on to see if it 'fits' with and to curricula.

Current Issues Surrounding the Nexus

Several salient points and gaps emerged from this review:

Rhetoric Not Reality

Brew and Boud (1995) note that in studies of the relationship between teaching and research, there is a notable absence of any debate about the nature and essence of what research is and what teaching is, as they tend to be taken as given and understood concepts. To date, little engagement with the meanings and underlying principal concepts of teaching and research exists. People with different experiences and subject knowledge, from different institutions, etc. have been asked to contribute to studies on the nexus, but their underlying attitudes, beliefs about teaching and research have never been unbundled, as they are assumed to 'share' and understand what is meant by teaching and research.

The Level of Teaching Engagement

While acknowledging that the research-teaching nexus may exist or is perceived to exist at both postgraduate and undergraduate level, Neumann (1992) is able to identify variations between the two levels of teaching engagement. Postgraduate teaching and postgraduate supervision is 'impossible' (according to Neumann, 1992) without the academic teacher/supervisor engaging in academic research, since the rate at which knowledge changes is fast. In addition, several of the key principles of postgraduate education can only be achieved via research. For example, a critical, questioning stance required of a researcher, necessitates that the supervisor has the same critical questioning mind of postgraduates work. Neumann (1992) acknowledges that the teaching-research nexus at the undergraduate level is perceived to be quite complex due to a variety of factors: such as the nature of the discipline; the type of course, the motivation of the student and the intellectual ability of the student. However, no study to date has evaluated the underpinning of what informs staff's knowledge to teach postgraduate students.

The Nexus Time Line

Much of the work surrounding the nexus was undertaken in the early nineties, when policy makers (particularly in the UK) were adopting new private sector mindsets, techniques and tools to the management of the academy and the work of academics'. Furthermore, in common with other public sector institutions, HEIs are seeking to maintain the three 'Es' of efficiency, effectiveness, and economy, by adopting private sector managerial techniques to deliver and perform the educational function (Dobson and McNay 1996). This ideology is commonly known as New Managerialism (Pollitt, 1990).

In the DfES (2003) White Paper, *Higher Education: A new framework* it discusses teaching and research as if they are separate activities, with the English Government's interest being to make the funding of each clearer, more competitive and selective.

Misrepresentation of Early Pioneers

Over the years within the literature, there has been an over interpretation and, perhaps, a misrepresentation of Hattie and Marsh's findings. Most quote the actual marginal correlation numbers, but very few actually contextualise these findings within the rest of the work. This narrow interpretation of their work has allowed various audiences to take a particular spin on the findings and the methods to claim what they wish to claim, for their own agendas. Various audiences, mainly policy makers, who need to support their ideological and or political goals, have perhaps inappropriately used this literal view.

What is lacking is any significant academic debate relating to Hattie and March's conclusions, which contain an eclectic mix of other avenues of inquiry, which may shed some light on the nexus. For example, Hattie and Marsh suggest other factors are possibly important, such as the mode of teaching delivery, institutional context, and the context of the discipline and knowledge, but these threads of inquiry have been quietly forgotten about.

In addition, work to date has mainly been at the generic level rather than the discipline level, which gives the illusion that what has been found out is accurate, valid and reliable for all institutions, in all countries, in all disciplines, etc. This is problematic presenting a false dichotomy.

Research is seen as Pivotal for Academic Promotion

Court (1999) warns that staff with modest or non-existent research profiles will find it hard to feel appreciated in an academic society driven by research activity. Court (1999) found that slightly more than half of his respondents believed that promotion at their institution placed too much emphasis on research. As long as the debate is presented as adversarial in nature, the research versus teaching debate will continue and an understanding of the nexus will not be achieved (Lucas, 2006).

A Fourth Institutional Strategy may be Missing.

Research assessment may, in principle, be straightforward but, in order to arrive at the best possible assessment process, the review has considered both the philosophical questions, such as 'what is meant by quality in research', and practical issues to do with designing a system that will provide a fair and accurate assessment of quality while minimising burden on all concerned.

Currently, the RAE measures a particular form of research. It tends to evaluate how well or not, as the case may be, divisions, departments, and universities manage their research activity in terms of achieving highly regarded journal outputs and other 'esteem indicators'. It may be more appropriate to assess how well departments, divisions, and universities manage the integration of their learning and teaching and assessment strategies with their research and income generation strategies. Perhaps a fourth strategy is needed, that of disciplinary scholarship, in order to bind these elements together to ensure and strengthen the nexus. This integration and the exploration of the contested terrain that exists would be useful in tackling some key

challenges. These include the following questions (adopted from the work of Brew, 2004):

- Are there institution-wide strategies to encourage research, teaching, scholarship and consultancy to be linked?
- Do departments/divisions of IS/IM align the organisation of teaching with research, consultancy, or scholarship practices?
- Is there a department/divisional plan to develop research led teaching, and/or consultancy led teaching and / or research led learning and / or teaching led research?

Conclusion

The area of scholarship and the subsequent emphasis on the Scholarship of Teaching and the Scholarship for Teaching, in the USA, has raised the currency of the discussion within the literature on a nexus between teaching, research and scholarship. However, this discussion has followed a particular line of enquiry, not completely compatible with explaining how the nexus between teaching and research co-relate to inform teaching practices. To date, little robust empirical foundations exist when exploring the nexus between teaching and research.

Many of the views discussed within this chapter are contradictory. They demonstrate that there exists a continued tension between teaching and research and, by extrapolation, the role of an academic and that of an academic subject discipline contributes to the nexus or the perception of a nexus, which makes unpicking the fact from opinion, messy and complex. This chapter introduces the ideas of disciplinary scholarship and has argued for the area of academics engagement in consultancy to be considered when exploring the nexes between teaching, research, scholarship and consultancy. The next chapter on research design and methodology provides one way of tackling and making sense of this messy complex area of study.

Chapter Three

Research Design and Methodology

"Finding the occasional straw of truth awash in a great ocean of confusion and bamboozle requires intelligence, vigilance, dedication and courage. But if we don't practice these tough habits of thought, we cannot hope to solve the truly serious problems that face us - and we risk becoming a nation of suckers, up for grabs by the next charlatan who comes along."

Carl Sagan (1934-1996)

Introduction

The purpose of this chapter is to present the research design and in particular, the research philosophy and the research methodology used to investigate the research aim, that being to penetrate, through empirical investigation, beyond the rhetoric of the nexes between teaching and the following: research, scholarship, and consultancy, in the teaching of taught postgraduate programmes of study.

This chapter shows 'the workings' of the research (Holliday, 2002), in order to establish the methods and the rigour of the research process. Where appropriate and relevant to do so, a judicious balance is given between "taking the opportunity to encounter the research setting while maintaining the principles of good social science" (Holliday, 2002, p 9). An overview of the key phases of the research design is given below in Figure 3.1 to orientate the reader. Each stage is further discussed within this chapter.

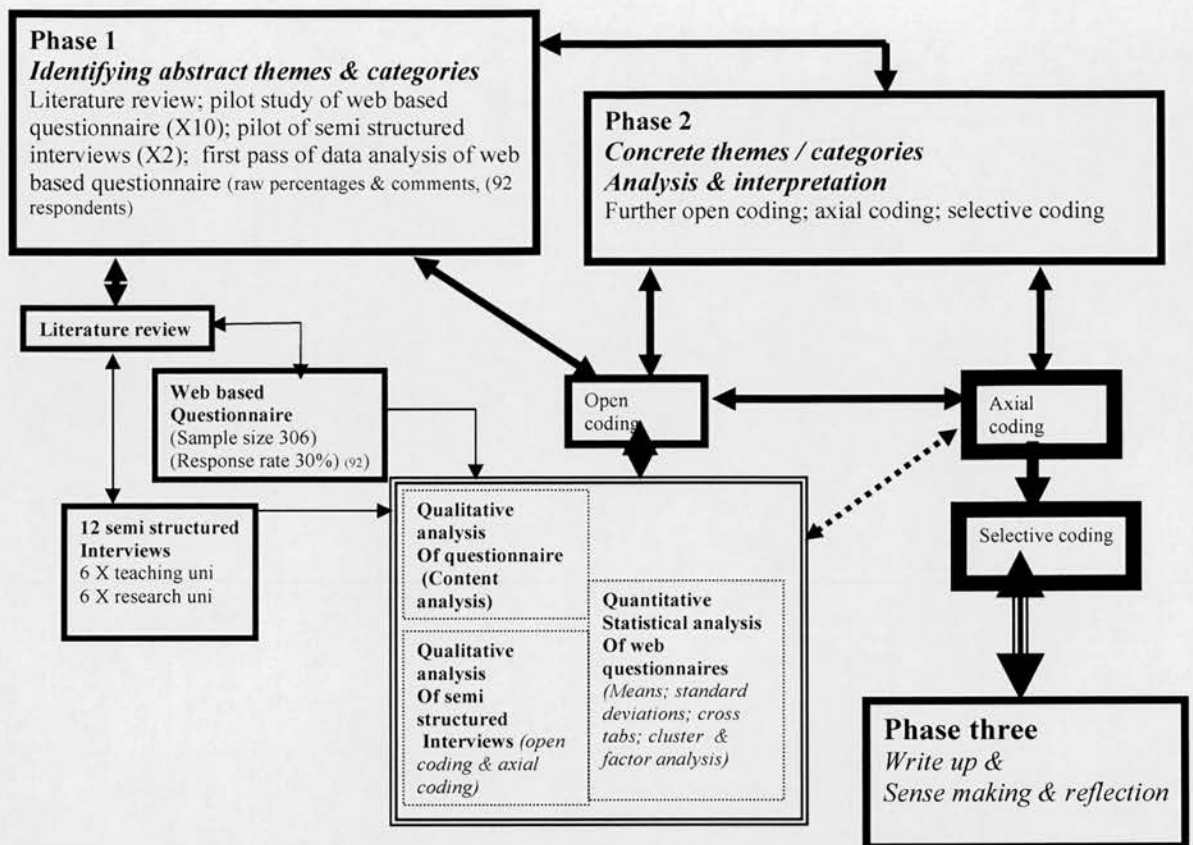


Figure 3.1 - Research Phases

Research Design and Methodology

The research design employed for this research brings together the interplay of the key components of the research project: the research questions, the literature review, the collection of research data, data analysis and interpretation and finally the write up of the results to construct the actual thesis itself.

Several research designs were possible given the complexity of the topic and given the range of research philosophies, methodologies and methods offered by other researchers, based on the literature review in the previous chapter. The one presented here was deemed the most appropriate for the reasons stated.

Royer and Zarlowski (2001) argue that the overall quality of a research design is determined by the logic of the research approach and the coherency of its various

components, which are discussed within this chapter. Indeed, McCall and Bobko (1990) argue that the most important aspect in selecting a research design and subsequent research methods is not the research design or the methods employed but what they are able to reveal about the research problem situation, which this research design clearly achieves given the discussion in subsequent chapters, mainly Chapters Four and Five.

Ticehurst and Veal (1999) note that the debate regarding the '*best*' approach to research is often aligned with different underlying philosophies or paradigms. Kuhn (1970) to describe universally recognised approach for the discovery of knowledge used the term 'paradigm'. The literature on research paradigms is dominated by two distinct research philosophies: positivism and interpretive/phenomenological, although many variants and hybrids exist which gives an eclectic blend of various theoretical and intellectual positions available to the researcher to reflect upon, select and utilise, as being fit for the purposes of their specific research.

Phenomenological Based Research Philosophies

According to Burrell and Morgan (1979) the interpretive paradigm is:

".....informed by a concern to understand the world as it is, to understand the fundamental nature of the social world at the level of subjective experience."
(Burrell and Morgan, 1979, p 28).

The interpretive paradigm of inquiry is considered to comprise a number of categories of interpretive theory most notably Phenomenology. Phenomenology has developed to what may be called the phenomenological movement, which includes scholars like Husserl, Heidegger, Ricoeur, Gadamer and Schütz (McLaughlin, 2003). However, depending on ones own understanding and particular world view, phenomenology can be either a philosophy, if one subscribes to the work of Husserl and Heidegger, as adopted in this thesis or as a methodology as advocated by Schutz (McLaughlin, 2003).

Phenomenology, in its broadest sense, is an approach, which seeks to make sense of the world through the conscious mental processes of individual's experiences involved

in that phenomenon in order to uncover the essential invariant features of that experience (Remenyi et al, 1998). Thus, phenomenology is the empirical study of the ways in which people experience, conceptualise, problematise, understand, perceive, apprehend various phenomena (Prosser and Trigwell, 1997b), in this case the nexus or nexes between teaching, research, scholarship and consultancy.

This approach to research is fundamentally different to other research approaches, such as positivism, which has the need for independence of the observer from the subject(s) being observed and the need to formulate hypotheses for subsequent verification. Positivism focused researchers search for causal explanations and fundamental laws, and generally reduces the whole (problem/phenomenon) to its simplest possible elements in order to facilitate analysis (Easterby-Smith, 1991; Remenyi et al, 1998).

Since the researcher is and has been a member of the UK IS/IM academic community for a number of years, it would be inappropriate to have adopted a positivistic research philosophy using the often-cited meta methodological approach. As the researcher, felt given the topic and the need to adopt 'bottom up research', that he could not be and remain completely objective at all times, given the prior knowledge and personal baggage presented in Chapter One. However, all the necessary checks and balances were in place to ensure the concepts of validity and reliability were adhered to when appropriate and relevant to do so, given the essence of the adopted research philosophy.

The Research Philosophy Employed for this Research

The research philosophy underlying this thesis is an interpretive, deductive, variant of the phenomenological approach. The epistemological view of this research is based on the notion that the researcher along with the participants of the research can create and co-construct understandings surrounding the nexus or nexes between teaching, research, scholarship, and consultancy, which will of course by its nature be subjective. A phenomenological approach was used in an attempt to bring some

element of structure and essence to peoples shared experiences derived from the IS/IM community of practice, informed by both quantitative and qualitative data.

The ontological view of this research is based on relativist ontology, which acknowledges multiple realities concerning the nexes between teaching, research, scholarship, and consultancy may exist or are perceived to exist and that individuals interacting with other individuals socially construct these realities. The epistemological view of this research is based on the stance that the researcher using grounded theory, as a way to analysis data, to create and co-construct theory is able to make sense of the nexes between teaching, research, scholarship, and consultancy.

The methodology of survey, in the form of a web-based questionnaire to obtain a 'snap shot' of peoples attitudes and experiences along with twelve semi-structured interviews was employed, continually informed in places by an extensive literature review to explore the research questions. Finally, a variant of grounded theory in-conjunction with classical statistical analysis was employed to provide a balance between solid and robust reliable and valid data, which has informed the discussion presented in this thesis.

Grounded Theory

Grounded Theory is a general theory of scientific method concerned with the generation, elaboration and validation of social science theory, which meets the cannons of good science that of consistency and generalisability (Haig, 2003).

By using grounded theory, Strauss and Corbin (1994) argue that the data may be used to generate new theories, thus supporting the phenomenological approach. However, Strauss and Corbin maintain that if existing theories seem appropriate to the area of investigation, then these may be elaborated and modified by exploring new data. This is achieved by making constant comparisons, asking concept related questions, theoretical sampling and systematic coding procedures (which are discussed latter in this Chapter).

Grounded theory has at its heart interlocking constructs, to develop theory inductively from data; which can be elaborated theoretically and judged to be fit for purpose within given constraints (Glaser and Strauss, 1967). This is because, data collection, analysis and the resultant theory generation has a reciprocal relationship, in that the researcher, rather than commencing with a theory that has to be verified, commences with an area of study and allows relevant theoretical conceptual constructs to emerge from the process (Strauss and Corbin, 1990).

Grounded theory studies, such as this one, use rigorous data coding procedures designed to increase the validity of data interpretation. This process requires:

“....joint collection, coding and analysis of data is the underlying operation generation of theory, coupled with the notion of theory as process ... should blur and intertwine continually, from the beginning of an investigation to its end” (Glaser and Strauss, 1967, p 43).

A number of personal differences between Glaser and Strauss have emerged since their joint publication in 1967. Glaser (1994, 1998) suggests that the researcher needs to be more creative and less procedural in the application of grounded theory and that the identification and specification of how the research aim is to be addressed is entirely dependent upon the perceptions of interviews and the questionnaire respondents and the researcher. Whereas Strauss (Strauss and Corbin, 1990) suggest a linear approach should be followed and that the researcher is permitted to predetermine the general subject of enquiry before entering the research topic. Strauss and Corbin (1994) argue that grounded theory requires specific skills from researchers, such as the ability to step back and critically analyse situations, to think abstractly, be sensitive to the words and actions of respondents and be able to recognize the tendency for bias. Nevertheless, given these difference, both approaches share a common framework, with regards the basic elements of grounded theory, that of establishing concepts, categories and propositions in an interactive and iterative manner.

For this research, Strauss and Crobin's (1990, 1994) more linear, analytical, and procedural approach was used as it allows the inclusion of findings obtained from the web-based questionnaire, which was systematically analysed using various statistical techniques.

There are three analytical steps (that are not sequential) to assist in theory development, when following grounded theory. These are data collection, data ordering and data analysis. With data analysis involving, three processes, from which sampling procedures are derived, and often overlap that of:

“.....open coding, where data is broken open to identify relevant categories; axial coding, where categories are refined, developed and related; and selective coding, where the core category, or central category that ties all other categories in the theory together, is identified and related to other categories” (Strauss and Corbin, 1990, p 17).

However, Hitchcock and Hughes (1989) remind the researcher that it is important to keep a balance between that which is created by the researcher and what is the actual situation. They argue that this should be done by constantly asking ‘what is really going on’? They recommend an attitude of scepticism towards any categories brought to or arising early in the research, this advice was employed during this research.

In order to help explore and understand the richness and complexity of the nexus or nexes, Landry and Banville (1992) suggest when exploring ‘*the would be reality*’, it is important to remember given the partial description evident here, that no single method or viewpoint can ever capture “the richness and complexity of reality, and that a diversity of methods, theories and philosophies are required” (Landry and Banville, 1992, p 78). Finally, Pring reminds us that, although useful for analytical purposes, the dualism between qualitative and quantitative approaches is essentially false and that both are needed in research (Pring, 2000). Therefore, the following research methods were employed thus addressing the concerns of Pring and Landry and Banville.

Web-Based Survey

Web based surveys are relatively new and offer their own particular advantages and disadvantages. They are a derivative of traditional surveys. Surveys have a particular advantage when exploring the nexes between teaching, research, scholarship, and consultancy, since they can accommodate the researcher's desire to understand and investigate what happens in the social world. deVaus supports this view when he argues, "the logic of surveys and statistical analysis is simply a more systematic extension of the logic we use in everyday life" (deVaus, 1991, p 4). From a researcher's perspective, statistics, and surveys are complementary, as the survey approach lends itself ideologically to the creation and subsequent analysis of numbers to yield creditable, defensible and meaningful statistics, which then helps to explain and make sense of the perceived phenomena such as the nexus between teaching, research, scholarship and consultancy.

Advantages of web-based surveys cited in the literature include: low cost, quick turnaround time, collapsed geographical boundaries, user-convenience, and more candid and extensive response quality (Smith, 1997).

Navigation and flow are important in any questionnaire, but they are particularly important in Web-based surveys (Redline and Dillman, 1999). Web surveys are a visual stimulus, and respondents have control over how and even whether they read and comprehend each question (Dillman et al, 2001). Participants in Web surveys are less likely to take extreme positions in their responses than people that take part in a telephone survey (Satmetrix, 2001). Web surveys provide opportunities for variety in question structure, layout, and design, which are not available in paper surveys (Couper, 2000, 2001; Zanutto, 2001). It has been demonstrated there are various ways to manipulate both the verbal and the secondary languages of self-administered questionnaires to improve the design of 'skip' instructions, and, in turn, improve the response rate, for skip pattern questions (Dillman et al, 2001). In addition, in an interactive web survey using JavaScript for handing questions, the researcher can impose constraints upon the respondent's response options or implement various

interactive features that allow complex skip patterns, which eliminate data entry errors and can ensure a higher quality response (Dillman et al, 1998).

Some participants in the Web-based surveys might have been concerned with privacy issues. Bosnjak and Tuten (2001) state that metadata can be collected about participants, without their knowledge, through cgi scripts, Java applets, and user log files. Given this ethical issue, for this research, these files were deleted from the web-based server everyday and were encrypted during the day by the Glasgow Caledonian University Web-master, to prevent access by the researcher, thus ensuring anonymity of the respondent. However, this design feature did necessitate providing reminder emails to the whole sample, even if they had already completed the web-based questionnaire.

There are also a myriad of technical issues that need to be considered before implementing a web survey as discussed in Dillman and Redline (1999), and Smith (1997). The lack of standardisation among operating systems, servers, and browsers causes a number of problems and requires time-consuming efforts to ensure the compatibility and the practicality of a web survey; this was achieved as no reported browser incompatibility problems were reported.

Having obtained a 'snap shot' of what a sub-set of the IS/IM community experienced and perceived with regards to the nexus or nexes between teaching, research, scholarship and consultancy, these findings directly supported the question construction phase for the twelve semi-structured interviews within two Scottish Universities, one a teaching-led university and the other a research-led¹⁴ university.

¹⁴ Doctoral/Research Universities - Extensive: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the doctorate. They award 50 or more doctoral degrees per year across at least 15 disciplines. - Carnegie Classification includes all colleges and universities in the United States. In the UK the Department for Education and Skills, define as the same, but for 60 doctorates

Semi-Structured Interviews

Semi-structured interviewing is a type of interview, which was used to elicit information in order to achieve a holistic understanding of the interviewee's point of view, attitudes, and experiences surrounding the nexes between teaching, research, scholarship, and consultancy in IS/IM.

Semi-structured interviews are flexible and are exploratory in nature, in which the researcher can adjust later questions depending on how the interviewee answers earlier questions in order to clarify the responses thus allowing an opportunity to follow lines of inquiry; or to probe for more detail (Robson, 2002). The interview style used for this research was conversational, and the questions asked were generally open-ended and designed to extract details (Silverman, 2000). The purpose of such interviews was to help the researcher understand the experiences, thoughts, and behaviours of the interviewees by drawing upon their own context and situations (Holliday, 2002) and own views. There are two main disadvantages associated with interviewing. First, due to the large amount of time and effort they involve, qualitative interviewers cannot usually study a very large population. Therefore, given the time and resources available to the researcher a maximum of twelve interviews were undertaken, six in each Scottish university selected.

It is now necessary to discuss what Holliday (2002) calls the 'workings of the research design'. In order to do this, the research design was broken down into three main phases with several sub sets many of which were interrelated.

Phase One of the Research: Identifying Abstract Themes and Categories

After an initial review of relevant and specific literature, pertaining to the nexus or nexes between teaching, research and scholarship, and the academic literature on consultancy, which was obtained from key word library searches and using on-line search engines such as Sweetscape, Wordwise, ERIC, and ERA in conjunction with a review and familiarisation of relevant policy documents from the following agencies:

- Institute of Learning and Teaching (now the Higher Education Academy);
- The Association of Information Systems (AIS);
- The Scottish and English Higher Education Funding Councils (SHEFC/SFC & HEFC);
- IS World;
- Universities Scotland;
- The United Kingdom Academy of Information Systems (UKAIS) and the
- Scottish Education Development Agency (SEDA);

an initial first pass identified a number of key categories that were used to contextualise the area and the findings throughout the research.

This stage of the research initially informed the research design and a tentative development of the web-based questionnaire and the initial outline of questions for the semi-structured interviews. After each pass through the data obtained from the literature, supported by extensive noting taking, the output from which was then compared back to other theories or other data sets to yield additional themes, categories, concepts and themes worthy of being investigated.

The process of how the data was extrapolated from the literature to inform the tentative development of the web-based questionnaire, the interview questions and to provide an initial theoretical conceptual foundation in the form of open coding to build from can be summarised as follows:

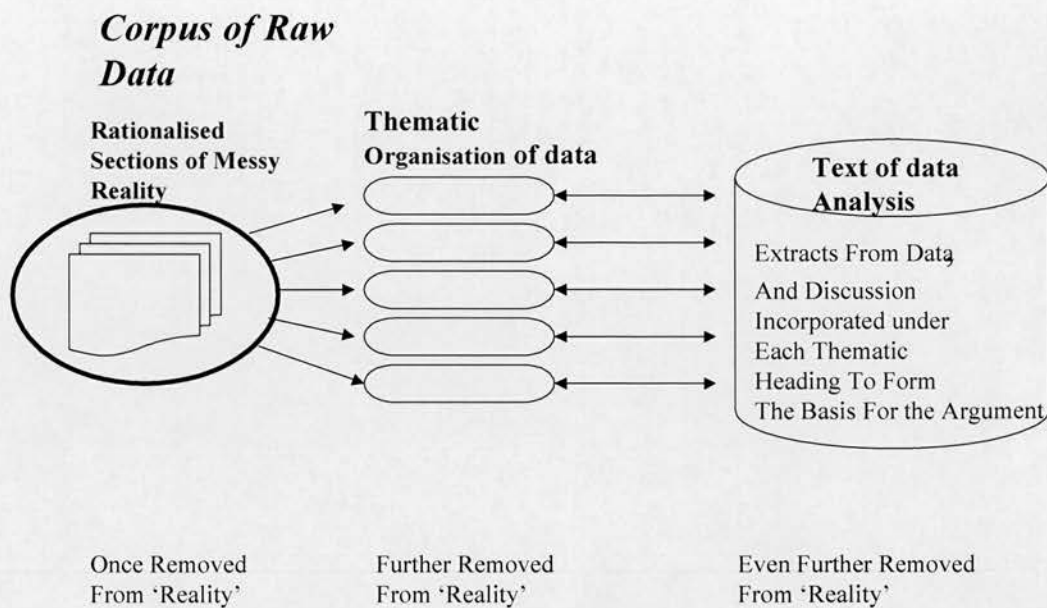


Figure 3.2 - From Data to Text adapted from Holliday (2002), p100

This approach is similar to the reiterative comparing and contrasting principal found in grounded theory. In grounded theory, open coding is part of the analysis phase concerned with identifying, naming, categorising, and describing phenomena found in and during data collection. The notes taken were then coded, to help identify themes, variables, and their properties, which provided the foundation for the axial coding phase of the research.

The arguments, based on the categories suggested in Figure 3.2 can be found in Chapter Two. The middle of Figure 3.2 is concerned with the development of themes. This was achieved via a disciplinary gaze (Becher and Trowler, 2001) over the corpus knowledge in order to get a feel for its character and essence, i.e., much of the work to date had concentrated on the relationship between teaching and research and scholarship and nothing else. This was followed by establishing a number of 'divisional categories' (Holliday, 2002), which was used to naturally divide the material in to manageable 'chunks'. Headings were then developed to reflect the categories and the trends over time, which were identified, throughout the duration of the research, categories, and themes were expanded, reduced, modified, and merged to

yield a set of core categories, which facilitated the grounded theory to emerge. Many of which can be seen in the web-based questionnaire and in the discussion in the next Chapter.

As coding happens, certain theoretical propositions occur instinctively and emerge rather than being forced. These tended to be around links, connections and associations between categories, which were originally written on 'memos' (Glass and Strauss, 1967), to act as an aid memoria for subsequent stages of the research. From these initial memos to oneself along with the categories and themes, a paper-based questionnaire was developed which contained questions informed by the initial and first pass on the corpus of raw data using the headings, salient points and gaps identified from the literature to identify what questions to ask and to a lesser extent how to ask them. This paper-based questionnaire was then mounted on to the World Wide Web following specific construction protocols.

Construction of the Web-Based Questionnaire

Some 50 questions were originally constructed using a number of different questioning styles and formats. However, after nine iterations (with the key themes being identified from the literature review, etc), a much reduced, yet focused final draft emerged. The modifications undertaken ranged in question wording to ensure the right 'thing' was being measured and that respondents would understand (as much as is possible with questionnaires) what was being asked. Several questions were collapsed together and or removed outright, if similar questions or interpretations of other responses would typically yield the same or similar responses.

The structure of the questionnaire was as follows (see Appendix Two for a copy of the final web-based questionnaire).

General information regarding the purpose and structure of the questionnaire was given; this also covered explanations to do with anonymity, Data

Protection Act, accessibility, research ethics, along with definitions of core words and concepts, general navigation and layout issues.

Teaching for the web-based questionnaire was defined for this study as “*the process of facilitating students’ learning of existing knowledge, via face-to-face teaching, on and off campus, distance teaching, blended teaching, and on-line teaching systems, etc.*” This definition was developed via a personal synthesis informed by the key theories and frameworks, such as those proposed by Barrow, (1991); Trigwell and Prosser, (1996); Entwistle, (1995). These theories and frameworks are discussed in Chapter Two and the definition used above seeks to capture the essence of teaching.

Research was defined in the web-based questionnaire as “*a means of generating, testing and validating new knowledge and re-evaluating old knowledge, typically through conceptual work or through data gathering techniques such as observation, surveys, interviews, policy document analysis, etc.*” This definition was crafted for the web-based questionnaire, in an attempt to capture and represent the essence of the key definitions given in Chapter Two, i.e., Boyer, 1990 ‘Scholarship of Discovery’; Brew, 2001; HERO, 2005. However, the definition did include the word knowledge (both the creation/discovery and the re-evaluation of old knowledge) in order to separate knowledge creation and discovery from the area of Scholarship.

Scholarship was defined in the Web-based questionnaire, as “*the process that seeks to identify, interpret, draw together, and bring new insights to other peoples’ original research with regards current and emerging thinking, with regards personal development of skills, expertise and knowledge.*” The definition of scholarship was constructed based on Boyer’s (1990) views on Scholarship, i.e., the Scholarship of Integration, Application and of Teaching, as discussed in Chapter Two. The area of integration is reflected in the ‘bringing new insights’ and ‘drawing together’, in the Web-based definition. The area of application is reflected in the ‘identification’ and interpretation of

what is going on in the area both in an academic sense and in a practitioner sense, with the Scholarship of Teaching, being embedded in the elements of the statement above as ‘personal development of skills, expertise and knowledge’ being the role of an academic teacher. The discourse in the definition was designed to focus the attention of the respondents into thinking about scholarship not as research but knowing what was going on in the area and to separate this from the creation and discovery of new knowledge, factors reserved for the definition of research.

For the purposes of the questionnaire, consultancy was defined as “*an academic applying existing knowledge to an agency, where the problem situation is usually client specified, in order to solve or diagnose a problem[s] e.g.: day-to-day problems, longer term strategic issues, etc*”. This definition was constructed based on personal experience and exposure as an academic consultant within my own professional practice. This was undertaken, at least partly, because the existing literature exploring and making sense of the practices of academics as consultants is still very much in its infancy, particularly when compared to the literature on teaching, research and scholarship.

The general information and definition section of the web-based questionnaire was followed by obtaining general respondent characteristic information such as age, type of university, etc then moving on towards respondent perceptions, experiences and observations with regards the nexus between teaching, research, scholarship and consultancy, followed by their views, attitudes, values and opinions on the nexus.

With regards the final section, each core stem, i.e., teaching, research, scholarship, and consultancy, was reviewed to ensure the questionnaire was fairly balanced and that each core stem was give the same amount of coverage for each key area thus reducing the deficit model of questions. The questionnaire included a mix of closed and open-ended questions. Open-ended questions were particularly useful because they allow

expression of personal views and it allowed the respondent to explain the reasons underlying a particular choice.

To help ensure a reasonable response rate an incentive of 4 X £25 book tokens was offered for those who responded, who wanted to be entered into 'prize drawn', which would be drawn by an external individual on a predefined date stated in the questionnaire.

A dedicated set of web pages using SurveyMonkey¹⁵ was developed to form the web-based questionnaire; all were developed and designed by the researcher, following good web based survey design features suggested by Dillman and Redline (1999); Zanutto (2001) and the Rand Corporation (2001). These design elements are outlined in Appendix Two.

The pages were mounted on a web server that guaranteed complete access, from any IT computer system along with full backup and contingency plans, in accordance with 'good' IT practices. The web pages were developed in JAVA, supported by raw HTML code entered by the researcher, which was added to enhance the functionality of SurveyMonkey. SurveyMonkey allows for elementary analysis of questions and responses, which was informative with regards, the pilot study of ten respondents.

A Pilot Study of the Web Based Questionnaire

Staff within the Division of Business Information Management, Glasgow Caledonian University were invited to undertake a pilot study of the draft web-based questionnaire on-line. This pilot sample consisted of ten academic staff members (50% of the Division) none of whom were members of the UKAIS. Information obtained from this data set did not feature in the final analysis of this research work. The data obtained was only used to evaluate the responses to the questions to ensure that the web questionnaire was 'fit for purpose'. Each member was given a briefing sheet detailing the purpose of the research, issues to do with anonymity, the need for

¹⁵ <http://www.surveymonkey.com/>

informed consent to participate and a general feedback sheet for their views on the web based questionnaire as a research tool. An open staff presentation was delivered by the researcher, so that staff who volunteered to participate could ask any questions they had. For fuller discussion as to the justification to use BIM staff and a ‘snap shot’ of the population as representative and the modifications made as a result of the pilot study, can be seen in Appendix Three. In summary, the modifications related to missing teaching and research areas, further refinement and clarity to the definition of teaching, research, and scholarship, a general tidy up of typos and grammatical errors and finally the issue of web accessibility by disabled users.

Sampling and Implementation of the Web-Based Questionnaire

The pilot study was then followed by an extensive web-based survey to a sample size of 308¹⁶ IS/IM Academics in the UK. The sample strategy for this phase was probability sampling using a closed population, i.e., only members of the UKAIS (United Kingdom Academy of Information Systems). For a detailed discussion as to the representation of the sample, please see Chapter Four.

Implementation Process of the Web Based Questionnaire

Once the web-based questionnaire was enhanced, (based on the feedback from the pilot study and subsequent interplay with the literature and the open codes developed) the final version was completed and mounted on the World Wide Web.

An e-mail to members of the UKAIS was issued to explain the nature, purpose and ‘value adding’ to the community by way of an introductory e-mail. The purpose of this email was to inform and raise the awareness of this research to Academy members.

¹⁶ Number of fully paid up members of the UKAIS in 2004/2005

At the 9th Annual UKAIS Conference, 5th – 7th May 2004, organised by the researcher and hosted by BIM of GCU, a session was timetabled where delegates (the majority of UKAIS members) could informally ask about the research and what would happen with their potential contributions, etc. Twenty-two people took advantage of this opportunity to discuss this research.

Following the conference and the general e-mail, an e-mail was sent using the private members list (hosted by JISC) to all UKAIS members with a covering message, covering the purpose and aim of the research, research ethics and that by going to the URL indicated informed consent to participate in the study and finally how to access the survey and the results using SurveyMonkey.

One reminder to encourage UKAIS members to complete the survey was undertaken three weeks after the primary call for the participation email. This reminder e-mail was sent to all, due to metadata issue discussed above.

After a further two weeks had elapsed a general thank you e-mail was sent and access to the summary of results was circulated to the UKAIS list, as it customary on web lists in IS/IM.

This summary analysis was also used to further inform the question development of the twelve semi structured interviews that were arranged after the close of the web-based questionnaire.

However, SurveyMonkey lacked the necessary functionality to allow for more intensive and in-depth analysis of the questionnaire responses. Therefore, the ability to 'feed' an SPSS worksheet was considered at the original design stage, to help with more complex data analysis, via a data export facility from SurveyMonkey to EXCEL (professional edition) then to SPSS (version 11) for further statistical analysis. However, some data cleaning, using accepted protocols was required before performing more advanced level statistical analysis. The results of which are presented in the next Chapter.

Twelve Semi Structured Interviews at Two Scottish Universities

Identification of Two Scottish Universities

Two different orientated Scottish universities, one teaching orientated and the another a research orientated university, were approached via two programme leaders, already known to the researcher, regarding access to academic staff who teach on their MSc's in IS/IM.

Two different institutions were selected to give a strong comparison between organisational contexts, staff expectations and practices in the teaching, research, scholarship and consultancy. Six interviews with IS/IM academic staff occurred in each university.

By grounding the interviews in two different types of university, supports Glaser and Strauss (1967) view of theoretical sampling should be purposeful. The web-based questionnaire was able to obtain a large amount of data from the UK IS/IM community, and the interviews were used to increase the diversity of the sample used to search for different properties and to explore the 'why question' and to make sense of participants perceptions surrounding the nexus.

The two Scottish universities where identified by aggregating data from the RAE 2001, and Teaching Quality Assessment (TQA) to determine one university with a strong and externally assessed research and teaching rating and one with a developing research rating, which had a strong, and or developing teaching rating. Both had to be engaged in the domain of IS/IM in the form of an academic department/divisions who had an established IS/IM taught postgraduate programme.

Staff at the research led university, which numbered 37.6 (FTEs) were rated under the RAE 2001 as a 4, under Business and Management (IS/IM subcategory). In addition, staff at the teaching led university, who numbered 72 (FTE), submitted twelve staff

who achieved an RAE 2001 rating of 2, under Business and Management (IS subcategory). The research led university achieved a 'highly satisfactory' TQA rating, with the teaching-focused university achieving a 'satisfactory' TQA rating.

Names to contact were identified (based on a set of criteria identified by the researcher and selected by each programme leader at the two institutions). In total, nineteen staff were invited, and twelve agreed to participate, with five refusing to be audio taped. With one individual taking issue with their transcription, this was subsequently resolved.

Interesting, Glaser recommends against recording or taking notes during an interview or other data collection sessions, as the researcher will get a greater understanding from an extra interview and from listening rather than transcribing from a tape recording. However, this view, in the researcher's opinion makes the research design vulnerable to criticism, on transparency and validity grounds. Therefore, each interview (when permission was given) was audio taped and a partial transcription was undertaken to support coding and subsequent analysis phases of the study. When permission was not given, personal notes were taken and used along with reflective memos at the end of each interview.

Each interview lasted a maximum of 45 minutes. Each participant was invited to attend by an e-mail and asked to give informed consent for the session to be audio taped to allow a partial transcript to be developed and subsequently analysed. The room was a neutral meeting room at the interviewee's university, with tea and coffee provided by way of making the occasion relaxed and informal. The room was set out with a table off to right with a tape recorder and a spider mike (PZM) on it, with the interviewee and the researcher sitting opposite on another adjacent to the table, without any obstacle in the way to hamper dialogue. Anonymity was guaranteed.

The interviews were carefully designed before taking place. Many issues have to be contemplated when designing interview questions, such as the phrasing of the questions and the order of the presentation of the questions. To ensure valid question

design several tests where made, using a pilot study of three staff members from within BIM at Glasgow Caledonian University, one researcher active, one teaching active, and one commercially active. Their responses did not feature in the final analysis or discussion of this work. However, a number of areas to ensure that good questions were framed were followed and acted upon, please see Appendix Four for the criteria used to guide question construction.

The questions were asked in the predefined order as developed, but not in strict sequence, thus allowing areas to be pursued as the interview developed. The researcher was conscious not to use complex words or jargon from the field as to speak over the interviews head or to appear superior in some way by speaking down to them.

The researcher, attempted to remain as neutral as possible, thus attempting to prevent any strong emotional responses from being 'picked up by the interviewee'. Appropriate uses of head nodding and "uh huh"s, and silences were used to aid the conversation.

Note taking was undertaken to assist with coding. Certain issues of body language where identified in code form along with any key points that would be followed up.

The researcher also summarised what had been discussed at specific times during the interview, in order to keep the interview on time and to help with the flow and to ensure that both parties knew what was going on. Near the end of the interview, the researcher signalled the end of the interview was nearing, by saying this is my second last question. At the end of each interview, the researcher thanked the participant, indicated that a transcript would be sent to them for factual accuracy, and asked if they would be willing and interested to be interviewed again at a latter date based on the analysis of the transcript if appropriate. Finally, what would happen and how their responses would be analysed and kept secure was reiterated (as the information was contained within the briefing sheet).

The structure of the interviews, more or less followed was:

<p>VIEWS OF A LINK/NEXUS?</p>	<p>What is your view of teaching? What is your view of research? What is your view of scholarship? What is your view of consultancy?</p>
<p>To what extent do you see a link between What aspects of a link do you find most helpful in teaching IS?</p>	<p>Teaching & Research Teaching & Scholarship Teaching & Consultancy</p>
<p>THE DISCIPLINE & INSTITUTION</p>	<p>How would you describe the discipline of IS view of the link? What do you think the discipline values most? Why do you think it values this the most? How would you describe your institution's view of the link? What do you think your institution values the most? Why do you think it values this the most?</p>
<p>PREPARATION FOR TEACHING</p>	<p>How do you prepare for teaching? How is your teaching informed/supported by Research? Can you give me examples? How is your teaching informed/supported by your scholarship? Can you give me examples? How is your teaching informed/supported by Consultancy? Can you give me examples?</p>
<p>THOUGHTS</p>	<p>What do you think students expected? What do you see as being the most substantial activity you undertake [should undertake] to attain promotion? What do you see as being the most substantial activity you undertake [should undertake] for self/professional development? What factors do you feel inhibit the development/enhancement of a relationship between teaching, research, scholarship, and consultancy? What factors do you feel encourage the development/enhancement of a relationship between teaching, research, scholarship, and consultancy?</p>
<p>ANY OTHER COMMENTS</p>	<p>Is there anything else you would like to say about the link between teaching, research, scholarship, and consultancy or about your experiences with them?</p>

Post Interview

Each transcript (when permission was given) was partially transcribed and then e-mailed to each interviewee for them to comment on the degree of factual accuracy. A word file using Microsoft's document tracking system was used to monitor what the interviewee had changed, on average an eleven-page transcription was completed. After the transcript had been returned from the interviewee and a document comparison had been performed using Word, then the document was sanitised to remove all reference or statements or factors that could identify the interviewee as being them. Transcripts were then manually analysed using the principals outlined in Grounded Theory. Computer based systems were not used, such as NUDIST, due to the time it would have taken to 'train' the system.

Interview Sample

The sample for the semi structured interviews, comprised of the following, none of whom were members of the UKAIS:

Teaching-Led University

- one programme leader from an IS/IM focused taught MSc, who was research active and a seasoned senior lecturer, with a teaching role;
- one academic director of IS who is research active and a seasoned senior lecturer, who had a minor teaching role;
- one director of IS consultancy, a newly appointed senior lecturer, not research active, with several years lecturing experience;
- one seasoned senior lecturer, no longer research active but had a teaching role;
- two seasoned lecturers, both research active and who had a teaching role.

Research-Led University

- one programme leader for an IS focused taught MSc, who is research active and a seasoned senior lecturer, with a teaching role;
- two seasoned lecturer, who were both research active, who had teaching roles.
- one seasoned lecturer, who is research active;
- one new lecturer (with recently completed PhD in the area), with a teaching role;
- one senior manager who is a Professor in IS/IM, who was research active and had ‘guest’ teaching roles within the University.

Additional detailed characteristic of this sample are presented in Chapter Four.

Phase Two: Concrete Themes / Categories - *Analysis and Interpretation*

For the web-based questionnaire, results were taken from SurveyMonkey; the data was then cleaned and then inputted to SPSS V11, via Excel. This was to facilitate statistical analysis of the data. A range of data analysis techniques was performed (chi-squares, means, ranges, and factor analysis) on the data.

For the qualitative aspects of the web-based questionnaires and the entire interview data, coupled with the results from the statistical tests used were appropriate, grounded theory coding protocols were applied in the following ways.

Firstly, an overview of grounded theory coding is given, then a more detailed discussion of who this was implemented for this research.

Open Coding, Axial Coding, and Selective Coding

Based on Glaser and Strauss’s (1967) framework, the interview transcripts, along with the literature and the results of the web based questionnaire were analysed adhering to one of the underlying principles of grounded theory that of “a continuous interplay

between analysis and data collection” (Strauss and Corbin, 1994, p 328). According to Glaser and Strauss (1967), with an extended interpretation from Saunders et al (2003), the following steps are involved:

- Identifying categories and their properties. Categories were derived from the data being analysed. A category is a conceptual element of the theory that illuminates the data. Each category was saturated with as many evidence ‘nuggets’ as appropriate to demonstrate their relevance.
- Generating hypotheses. The comparison of differences and similarities among categories generates generalized relations among them. When patterns are revealed hypotheses in the shape of themes can be developed.
- Generating a theory. The themes may at first seem unrelated, but as categories and properties emerge and become related, a theory emerges. A unifying selective core code was tested against the data and negative cases explained or alternative explanations sought. Thus, the validity of the theory can be verified. The themes and in particular the selective theme are presented in the next Chapter.

Coding

The aim of coding is to arrive at systematically derived core categories that become the focal concepts that contribute towards theoretical development (Strauss and Corbin, 1990). Coding is then oriented around the issue, and a central concept (or “code”) is then sought to represent the interplay of subjects’ and researcher’s perceptions of the nature and dimensions of phenomena under study. Theory generation happens around one or more core categories, with evidence of properties of these categories and therefore patterns of behaviour to be found in the research phenomenon studied (Strauss and Corbin, 1990). Categories are coded with a view to rendering them ‘dense’ and ‘saturated’ with theoretical meaning (Strauss and Corbin, 1990).

Types of Coding

Three types of coding were employed during this research, that being: open coding, axial coding and selective coding.

Open Coding

The transcripts' data along with the literature and the results from the web-based questionnaire were predominantly coded (labeled) "applying *In vivo* codes" (Strauss, 1987, p 33), or, researcher constructed codes. The former extrapolates the actual words and phrases used by the respondent. The latter uses a label that best captures a description of a phenomenon as it is highlighted in the textual data. Open coding involves the analysis of data, in a simplistic way, as open coding tends to ask the repeated questions of "what is this about?" and "what is being referenced here?" Codes form the basis for future core codes. These are names or labels given by the researcher to events, activities, functions, relationships, contexts, influences, and outcomes. When doing the analysis, nouns, verbs and adverbs are identified from all data sets obtained during the data collection phase of the research. However, it is important to achieve both abstract and concrete categories as the abstract one help to generate theory (Strauss and Crobin, 1990).

From the literature review key salient categories were developed using the process outlined in phase one. However, given the 'fusion' nature of grounded theory, many of these preliminary codes were either developed, disregarded or merged or grafted together to and with other categories as the researcher moved into the axial coding process, which has informed the final literature chapter expressed in Chapter Two and the subsequent discussion in Chapters Four and Five.

Axial Coding

Axial coding tends to follow open coding. Once the initial open coding has been completed, the researcher then regroups and reorders the data. Axial coding identifies relationships between open codes, for the purpose of developing core codes, via a combination of inductive and deductive thinking (Strauss and Corbin, 1990), from which the foundations to Chapters Four and Five are evidenced. Major (core) codes emerge as aggregates of the most closely interrelated (or overlapping) open codes for which supporting evidence is strong (Strauss, 1987; Strauss and Corbin, 1990; 1994).

However to simplify this approach, and to avoid looking for any and all kinds of relationships that could exist, which would fall out with the boundary of this research, the researcher emphasised causal relationships that fitted into a basic analytical framework of generic relationships (Dey, 1999; Glaser, 1998). The framework consists of the following elements (adapted from the work of Borgatti, 2004):

Element	Description
Phenomenon	The thing that holds it all together, it is sometimes the outcome of interest and it can be the subject of the interest.
Causal Conditions	These are the events or variables that lead to the occurrence of development of the phenomenon. It is a set of causes and their properties.
Context	Hard to distinguish from causal conditions. It is the specific locations (values) of background variables. A set of conditions influencing the action. It has more to do with what the researcher finds interesting (causes) and less interesting (context) than distinctions out in reality.
Action Strategies	The purposeful, goal orientated activities that agents perform in response to the phenomenon and intervening conditions.
Consequences	These are the consequences of the action strategies, intended and unintended.

Table 3.1 - Grid for Grounded Theory Codes

Selective Coding

Selective coding requires the selection of the focal core code, that is, the central phenomenon that has emerged from the axial coding process (Strauss and Corbin, 1990).

This code can be classified as representing context, conditions, actions, interactions and outcomes:

“In this way a theoretical framework of interrelated concepts can be developed showing relationships between the central concept i.e. what is the central activity occurring here, with what are the conditioning or influencing concepts, what are the observable outcomes and any intervening concepts and variables being represented by the other conceptual codes identified” (Strauss and Corbin, 1990, p 67).

It was this code, which yielded a meaningful and grounded theory pertaining to the nexus between teaching, research, scholarship and consultancy to emerge from the data, that of a process perspective.

Developing Codes into Themes

The process of developing the final codes will now be discussed in detail. The codes, which led to the themes presented and discussed in Chapters Four and Five, followed a particular line of engagement. This line of engagement, in reality, was highly iterative and cyclical in nature, until, at particular junctures, it was necessary to move the research on and come out of a particular cycle of engagement.

Data from the qualitative questions from the web-based questionnaire and the interviews were placed on to paper, and then cut up and stuck on to mini index cards. Coloured paper or a sheet of coloured paper with a number on it was used to allocate a label, as each happening, incident, idea and event was given a name or conceptual label. The label/code attempted to represent as fully as possible what was perceived by the researcher to be happening in the data (Strauss 1987). The mini index cards were then moved around numerous times into and out of piles, until a large sea of

data, ordered by coloured paper, became evident and the researcher was reasonably happy with the codes. During this stage of the coding process, particular theoretical ideas that came into the researcher's mind were noted and compared to, and with, key concepts as the coding process matured. At the first pass, over 60 codes had been generated. Nevertheless, with the constant moving and comparing of open codes, after a time, one code (occasionally more) began to emerge with higher frequency than others did, which helped to make sense of the data held within it. For example, research output in the form of academic journal papers was perceived to be pivotal when seeking to secure academic promotion. This view was more frequently held than not with particular consequences and actions associated with it as discussed in subsequent chapters. The researcher paid particular attention to adjectives and adverbs contained in the data to help make sense of the properties of the codes and this is discussed later on in this Chapter.

However, it is important to note, that to adopt a core code early on in the process is dangerous, as this would silence any further comparing and contrasting, which may yield potentially rich, relevant and appropriate codes to surface. Eventually, from looking at and living with the data over numerous weeks, the process starts to add very little as to what is already known about a code in terms of its properties. This is similar to the economic law of diminishing returns, where you reach a point beyond which further analysis or activity is futile.

Nevertheless, this stage of the coding process was extremely time consuming as it takes time to develop the codes and sufficient time is needed to allow the constant comparison approach to work and to give adequate time to think and to reflect upon the codes being developed. Even so, the 60+ codes generated along with the self-memos and the continued use of the literature presented in Chapter Two, open codes started to be firmed up, which then allowed the axial coding phase to start.

Axial coding followed the open coding phase by drawing upon the results of the researcher asking two specific questions of the data and the codes, namely, what is going on here and what does this say about the nexus/nexes?

Again, using the constant comparative method over several weeks, labels/codes of categories continued to be merged, changed, finalised and eliminated, especially when, as part of axial coding, it is important to look also at the code and its relation to and with other codes constructed. To simplify this process, rather than to look for any and all kind of relations, grounded theorists emphasise causal relationships, and attempt to fit things into a basic frame of generic relationships (Borgatti, 2004). It was here that Borgatti's grid presented in Table 3.1 was extremely useful, as it encouraged the researcher to ask continually what is relevant and appropriate here and that the draft code should be able to make sense of the data using the criteria of Borgatti's grid. During the first pass of using Borgatti's approach (Borgatti, 2004) the 60+ initial open codes, were 'whittled' down to 26 and, after subsequent interplay and iterations over the weeks, this became seven core codes, which subsequently became draft themes and one selective theme which attempted to make sense of the existence of the other codes/themes and their relationships between one another and each other.

However, the main problem during this stage of the coding process was that it was difficult to distinguish between properties and sub-categories in many instances, even with the use of Borgatti's (2004) grid approach. It became clear, given the large number of codes, categories and sub-categories that were emerging, that one core code, or as Glaser and Strauss, 1967, call it, a selective code, would be difficult to emerge. However, after much perseverance one selective code did emerge during the seventh cycle of axial coding using Borgatti's grid, which is presented in Chapter Four and discussed in Chapter's Five and Six.

Nevertheless, since the purpose of this study was to specify, in context, the conditions under which teaching was being informed by a nexus or nexes between teaching, research, scholarship and consultancy in IS/IM, the researcher felt it was necessary to take the (seven) constructed axial codes developed thus far, along with the selective code/theme generated, back to the IS/IM community for feedback as an additional validation to the process presented above. This was undertaken to 'test out' the theoretical development of the codes against participants' meanings and perceptions

of the nexus/nexes between teaching, research, scholarship and consultancy and to give them, given the phenomenological nature of this work, an opportunity to further guide and inform the inquiry process.

The researcher developed a discussion paper and presentation, which contained the codes worked up into draft themes. During presentations of the work at three¹⁷ universities (Glasgow Caledonian, Kingston and Northumbria) to practising IS/IM academics, debate occurred regarding the 'fitness' and appropriateness of both the axial and selective codes/themes developed. Feedback from several community members was distilled and informed in conjunction with the codes developed to date, into two journal papers which provided an opportunity for a wider community of IS/IM academics to engage with the material being presented and developed. Indeed, four IS/IM academics did provide personal feedback and commentary to the researcher, as a result of reading the two journal articles published, one of which was published in the *Journal of Educational Informatics* (Grant et al, 2003) and the other in the *Electronic Journal of Business Research Methods* (Grant and Fitzgerald, 2005).

Taking the coding approach discussed above, the discussion paper feedback and specific feedback from the two published papers allowed the coding process to end. In the final stages of the coding process, seven core themes emerged, which were refinements from earlier codes and one more rich 'nexus friendly' selective code emerged. These are discussed in Chapters Four and Five.

However, with all grounded theories the main threats can be summarised as observer-caused effects on the phenomenon under study, observer bias in interpretation, limitations to data access, and the complexities and limitations of the human mind that may prevent the statements of interviewees and questionnaire respondents being taken at face value (Dey, 1999). Strategies available to deal with these threats have included the researcher spending most of his working life in teaching, researching and consulting in IS/IM (see Chapter One); the employment of multiple data sources as expressed above, i.e., web based questionnaire, semi structured interviews and

¹⁷ None of which featured in 12 semi structured interviews.

observation and personal reflection of personal professional practice and, finally, taking 'work in progress' back to the IS/IM community for further validation of data to help reduce the criticisms of grounded theory.

Phase Three Making Sense of it all, Drafting, Redrafting, and Final Submission

Phase three consisted of structuring the thesis and developing draft chapters, based on an iterative, enriching and rewarding interaction with my supervisor, where the greatest learning occurred, namely structure, language, evidence, interpretation, the story being told and the key and value adding of the message and to remove 'purple prose'. This has cumulated in this work being presented here and when appropriate and relevant to do so the actual voices of participants can be heard.

Chapter Four Results

"We can judge our progress by the courage of our questions and the depth of our answers, our willingness to embrace what is true rather than what feels good"

Carl Sagan (1934 – 1996)

Introduction

As discussed earlier in this thesis, this work has aimed by focusing on the discipline of IS/IM to penetrate, through empirical investigation, beyond the rhetoric of the nexus between teaching and the following: research, scholarship, and consultancy, in the teaching of taught postgraduate programmes of study. In order to evaluate the views, perceptions and experiences of IS/IM academics who participated in this research, two research instruments have been used, a web-based questionnaires and twelve semi-structured interviews, (with the justification for doing so clarified in Chapter Three). The responses obtained from these methods of enquiry are explored in this chapter. In the first part of the chapter, the background characteristics of the study's participants are presented and contextualised. This is followed by the primary academic functions of the respondents looking both at how these functions are enacted and at how these functions are perceived and prioritised by both the respondents themselves and the communities within which they work. This is followed by a detailed evaluation of the responses from the web-based questionnaire, concentrating initially on the respondents' perceptions regarding the definitions of teaching, research, scholarship and consultancy. By evaluating the academic functions, both perceived and realised, of the respondents, this sets the scene for the subsequent evaluation of how the teaching practice of IS/IM individuals is informed by the main academic functions.

The analysis of the web-based questionnaire responses is followed by presentation and a thematic analysis of twelve semi-structured interviews with IS/IM academic staff from two Scottish universities. This investigative tool was chosen to allow a further in-depth evaluation of the views of IS/IM academics to enhance and complement the data obtained from the web-based questionnaire.

However, it is important to note that the results presented here are based on one small-scale study, in one cognate area, with a limited sample size, which at best only achieves a partial description of the phenomenon under investigation.

Representation

Prior to discussing the background characteristics of the study's participants, it is important to comment further on the representation provided by the individuals recruited to this study. All of the web-based questionnaire respondents were members of the United Kingdom Academy of Information Systems (UKAIS). This organisation is the only professional body in the UK that represents academic IS/IM professionals and, for the purposes of this research; the UKAIS members list for 2004/05 (a closed population) was used to e-mail the uniform resource locator for the web-based questionnaire to all members. This list comprised fully paid up members from the IS/IM community of practice in the UK for the session 2004/2005. It is possible that the use of UKAIS members in this study may not truly represent IS/IM academics in the UK. Indeed, the only prerequisite to joining the UKAIS is that members are interested or active in terms of teaching, research and academic consultancy and it is clear that such criteria have the potential to be exclusive. This issue is, at least partly, demonstrated by the fact that the membership list for 2004/05 comprised 308 individuals, which clearly underestimates the numbers of IS/IM practitioners likely to be present in the UK, such as members of the British Computer Society¹⁸. Determining the accurate numbers of UK IS/IM academics is difficult. Not only does the UKAIS represent the only professional body of such individuals but, also, qualifying the numbers involved is difficult given that many IS/IM individuals do not necessarily reside in departments of IS/IM in British universities. This partly reflects the heterogeneous origins of IS/IM as a discipline with many practitioners evolving from and/or residing in other departments such as those of computing science, librarianship and accountancy to name but a few. Thus, it can be seen that

¹⁸ The British Computer Society, is one of the oldest computing societies in the world, but it is not mandatory to join it to practice IS/IM, as it tends to have at it heart a more technical, software engineering and hardware view of IT, rather than business information systems and information management.

quantifying, characterising and accessing such individuals for the purposes of this study is difficult. Indeed, few national statistics exist regarding the national pool of IS/IM academics. The Higher Education Statistics Agency (HESA) statistics for 2004/2005 categorise IS/IM staff as either being part of Administration, Business & Social Studies or Engineering & Technology. In a further document in the Times Higher Education Supplement establishing the number of academics within each academic cognate area, the closest umbrella term incorporating IS/IM was “IT and systems/information sciences” although the areas covered by this umbrella category were not made explicit. Indeed, such a category could include professionals involved in computer science as well as librarians. In this document, the areas of IT and systems/information sciences category held 140 professors, 410 senior lecturers and researchers, and 1075 lecturers (THES, 2004a; THES, 2004b).

It can be seen that determining the views of IS/IM academics is difficult, not only because these academics represent such a diverse group of individuals from a variety of subject backgrounds but also because membership to a unifying professional body is not compulsory. However, given that the UKAIS does represent IS/IM academic and that these members are relatively easily accessible, approaching these individuals allowed for a reasonably large population of potential participants. The membership for 2004/05 was 308 and, thus, web-based questionnaires were sent to these individuals using e-mail addresses, which were current at the time of the year’s membership. It might be argued that such a method has the potential to exclude members who are not IT literate. However, given the dependence of the subject areas of IS/IM on computer literacy and technology and the provision by these members of a current e-mail address, it was felt that such an investigative tool should be able to target appropriately the 308 UKAIS members efficiently and effectively.

Of the 308 members who received the questionnaire, 92 responded, a response rate of approximately 30%. In determining whether this response rate is significant, it is important to compare it with other reported response rates for Internet surveys. Perhaps not surprisingly, much of the literature to date has focussed on traditional mail surveys. Web surveys tend to have a lower response rate than mail surveys

(Couper, 2000; Solomon, 2001). Indeed, one of the major drawbacks of web-based surveys is the failure to complete the questionnaire or abandonment (Couper, 2001). However, the response rate reported here for an Internet survey is better than in other studies' probably reflecting the computing and information systems background of the professionals being questioned and the often strong reliance of such individuals on computers and the Internet for their daily activities, such as teaching and research.

Although it can be seen that this 30% response rate represents an encouraging rate of responses when compared with other studies using web-based surveys, it is important to recognise that the interpretation of the results that follow must proceed with some caution. Indeed, although 30% responded, 70% did not. It is not clear why only 30% of the selected pool responded or, indeed, whether the responses of the 30% represent the thoughts and perceptions of the UKAIS members or just a distinct element of them. Thus, the results below are presented and interpreted with a degree of caution and relate very specifically to those individuals who did respond to the questionnaire. Of further importance is the recognition that, although the web-based questionnaire may be deemed fit for purpose for the aim of this research, it only gives a 'snap shot' of the activities, thoughts and attitudes of IS/IM academic staff at a single point in time.

Concerning the twelve semi-structured interviews, these represent a slightly different group of participants to those used for the web-based questionnaire. Firstly, none of the interviewees were members of the UKAIS. Secondly, departments dedicated to or institutionally charged with teaching IS/IM were approached to provide participants. Both of these issues are important and relevant. None of the interviewees were members of the UKAIS is relevant partly because it highlights the point raised earlier that the UKAIS is not all encompassing and, thus, the questionnaire is at risk of excluding IS/IM academics. In addition, these interviews allowed the thoughts and perceptions of non-UKAIS members to be heard. Furthermore, targeting academics specifically working within an IS/IM environment is relevant because, as highlighted earlier, UKAIS membership does not necessarily mean that any one individual is an IS/IM academic. For the interviews, six participants from each of two Scottish

universities were selected. The two universities differed in terms of level of research activity. One university considered itself a teaching-led university and the other a research-led university¹⁹. Both universities were Scottish and, whilst this may raise issues regarding the relevance of the responses obtained to other universities such as English, Welsh or Irish universities, these universities were chosen for logistic reasons and because the study was viewed very positively by the contacts within the university when the universities were first approached. Initially, at both types of university, personal contacts were approached and interviewed. At this time, the contacts were asked to suggest names of colleagues teaching at postgraduate level from within their own division/department, thus allowing the researcher to identify other appropriate IS/IM staff, in order to establish a suitable sample. This sample comprised MSc program leaders, research active and non-research active staff, and staff who actively engaged with and in consultancy.

Thus, in summary, these two investigative tools, web-based questionnaires and semi-structured interviews have been used in order to obtain responses from a reasonably representative sample of UK IS/IM academics. It is clear, however, that the views of all IS/IM academics cannot and will not be presented here and, in this regard, the results must be interpreted with caution. However, it is hoped that what follows will provide an indication of the thoughts and perceptions of one group of IS/IM academics.

¹⁹ Research-Led Universities: The Carnegie Classification includes all colleges and universities in the United States. They define a Research-Led University as an institution, which typically offers a wide range of baccalaureate programs, and they are committed to graduate education through to doctorate level. They award 50 or more doctoral degrees per year, across at least 15 disciplines. In the UK, the Department for Education and Skills define a Research-Led University, as a Research Intensive, using the same Carnegie Classification, but the number of doctorates awarded is 60 not 50, across at least 15 academic disciplines.

Web-based Questionnaire and Semi-Structured Interviews: Participants' Background Characteristics

In order to contextualise subsequent data analysis, interpretation and discussion throughout this and subsequent chapters, Table 4.1 (below) is presented. This table shows the background characteristics of the web-based questionnaire respondents and the twelve participants who took part in the semi-structured interviews.

The participants in both methods were predominantly male, a finding broadly in keeping with figures reported in the Times Higher Education Supplement (Times Higher Education Supplement, June 25th 2004, p 8). Furthermore, common to both the web-based questionnaire participants and the interviewees, most were in full-time posts and all had been in higher education for 15-20 years.

The interviewees were predominantly, lecturers, senior lecturers²⁰ and professors, the web-based questionnaire respondents were a mix of PhD academic/students (who tended to be staff from out with the UK, mainly from India, who are academics in their native land, who have registered to undertake a full time doctorate in the UK, who tend to have a teaching role of a maximum of six to eight hours per week within a UK HEI. These individuals have been granted membership of the UKAIS. Traditional PhD students can't join as full members, (only as student members of the UKAIS PhD consortium) lecturers, senior and principal lecturers²¹, readers and professors, teaching or research fellows, members of university management and a number of other practitioners (including advisory posts such as assistant deans of quality, research, income generation, or undergraduate education, etc) are represented. This reflects the heterogeneity of UKAIS members highlighted earlier.

²⁰ The position of principal lecture is not prevalent in Scotland.

²¹ Principal Lecturer – tends to be a term used in and by English Universities, it roughly equates to a senior lecturer in Scotland who is at the top of the salary scale for senior lecturer under FE64 and HE2000 employment contracts.

Web-based Questionnaire			Twelve – Semi Structured Interviews		
Gender	66.3% Male (61/92)		Gender	75% Male (9/12)	
Academic Post		Percentage	Academic Post		Percentage
	PhD Academic/Student ²²	15%			
	Lecturer	21%		Lecturer	42%
	Senior Lecturer	16%		Senior Lecturer	25%
	Principal Lecturer	8%		Principal Lecturer ²³	0%
	Reader / Professor	17%		Reader / Professor	25%
	Teaching / Research Fellow	2%		Teaching / Research Fellow	0%
	University Management ²⁴	21%		University Management	8%
Status of Post	81.5% Full Time		Status of Post	100% Full Time	
Mean Length of Service In HE (Band)	11-20 Years (36%) (Ranges were less than 5 years – 26%; 5 to 10 years – 26%; 21 years and over 13%)		Mean Length of Service In HE (Band)	11-20 Years (6 interviewees) (Ranges were less than 5 years – 2 interviewees; 5 to 10 years – 3 interviewees; 21 years and over 1 interviewee)	
Level of Teaching ²⁵	Sub Degree 4% Undergraduate 35% Professional Courses 11% Post Graduate (Taught) 30% Post Graduate (Research Supervision) 20%		Level of Teaching	100% Postgraduate (Post Graduate (Taught) & Post Graduate (Research Supervision))	
Teaching Qualification	36% Yes (31/86)		Teaching Qualification	17% Yes (2/12)	

²² This respondents in this category are categorised as visiting IS/IM academics from overseas, mainly India and Pakistan, who are academics who teach IS/IM in their home country, but who are undertaking full time doctorate level study, including Prof D's and Eng D, degrees, who teach IS/IM in the UK to a maximum of 8 hours per week. They are given UKAIS membership status for their teaching experience, hence why they are members of the academy. Traditional UK based PhD students are not members, but are members of the UKAIS consortium. The consortium members were not 'targeted' by this research.

²³ The terms principal lecturer does not feature in Scotland, hence the 0% is not unexpected.

²⁴ Categorised as staff who perform an advisory role such as Associate Dean of Quality, and who have an executive (line manager) function such as a Head of Department, etc. However, all retain some element of research activities and the advisory functions retain a percentage of teaching engagements.

²⁵ Percentages for this area are an aggregated total of respondents areas of teaching level

Professional Qualification	46% Yes (45/92)	Professional Qualification	58% Yes (7/12)
Consultancy Active	45% (38/85)	Consultancy Active	42% (5/12)
Average RAE Rating (If Respondent Was RAE Active)	4	Average RAE Rating (If Respondent Was RAE Active)	3A
RAE Unit of Assessment (If RAE Active)	Business & Management 53% (9/17) Computer Science 6% (1/17) Librarianship & Information Management 24% (4/17) Other 18% (3/17) ²⁶	RAE Unit of Assessment (If RAE Active)	Computer Science 56% (5/9) Librarianship & Information Management 44% (4/9)
Highest Qualification	58% Doctorate (53/92)	Highest Qualification	50% Doctorate (6/12)
Type of University	39% Modern ('Red Brick') (35/92) 35% New University (Post 1992) (31/92) 13% Ancient University (12/92) 13% HEI (12/92)	Type of University	50% Modern ('Red Brick') (6/12) 50% New University (Post 1992) (6/12)
Home of IS/IM	55% Business (49/89) 33% Science / Engineering / Computing (29/89)	Home of IS/IM	100% Computing & Information Systems

Table 4.1 - Characteristics of Sample

Approximately two thirds did not have a teaching qualification or membership of the ILT/HEA. About one-half possessed a professional IS/IM qualification or membership of a recognised professional body, e.g., British Computing Society or the Institute of Management Information Systems. Around half possessed academic doctorates as their highest academic qualification. The majority of participants practiced in 'new' [defined as post 1992 universities, in the FE/HE Education Act 1992] or 'modern' [post 1960's universities, FE/HE Education Act 1958] universities,

²⁶ Others e.g. Medical Information and Engineering Units of Assessment

with the majority of web-based questionnaire respondents working in a university business school. That the majority of participants resided in 'new' or 'modern' universities is perhaps not surprising given the evolution of IS/IM from its relatively young beginnings, with traditional universities tending not to have appropriate structures or focus on IS/IM.

All of the interviewees resided in departments of computing and information systems. These departments were once part of business schools but now, because of academic restructuring exercises, now integrated into Science and Engineering faculties/schools.

Over half of the Web-based Questionnaire respondents and all of the interviewees taught at post-graduate and professional level of engagement. This differing level of postgraduate teaching engagement may have implications later on in this chapter when the factors informing teaching practice are further explored. It might be anticipated that the artefacts informing postgraduate teaching may be different to those informing undergraduate teaching. Common to both the web-based questionnaire respondents and the interviewees, approximately 40% engaged in consultancy. Furthermore, research activity was evident in both groups with at least some members submitting work as part of the RAE exercise. The work, when submitted, was generally of a high level with an average RAE2001 rating of 4 reported by the web-based questionnaire respondents and 3A reported by the interviewees.

Having considered the background characteristics of both the web-based questionnaire respondents and the interviewees, for the ease of discussion and data presentation, results obtained from both these research instruments will be initially discussed separately.

Web Based Questionnaire

The following section introduces the web-based questionnaire respondents' views of what they perceive their primary academic function(s) to be; how much time they devote to following these academic functions. Subsequently, a detailed evaluation of the respondents' perceptions regarding the definitions of teaching, research, scholarship and consultancy is presented. Finally, this is followed by what academic engagements are undertaken and which of these academic engagements are reported as informing teaching practices.

Perceived Primary Academic Roles

In order to further contextualise the sample group used in this study and, given that the aim of this thesis has been to evaluate the nexus, if it exists, between teaching, research, scholarship and consultancy, the primary roles of the participants, as perceived and reported by the individuals themselves, were evaluated. Specifically, these perceptions were addressed by questions twelve and thirteen of the web-based questionnaire. The results are presented in Figure 4.1.

The categories represented in Figure 4.1 were developed from the results and are clarified below:

Research only relates to those participants who perceived their core academic function within their institution to be primarily research focused.

Research Active with Teaching Orientation relates to respondents who perceived their core academic functions as being equally balanced between research and teaching.

Teaching only relates to those participants who perceived their core academic function within their institution to be focused mainly on teaching.

Consultancy only relates to those participants who perceived their core academic function within their institution to be focused mainly on consultancy and income generation.

Mixed Orientation relates to those respondents who perceived their core academic function to be a combination of teaching, research and consultancy/income generation, with an element of academic management/administration.

Academic Management/Administration relates to those respondents who perceived their core academic function to be one of academic management, leadership and/or administration.

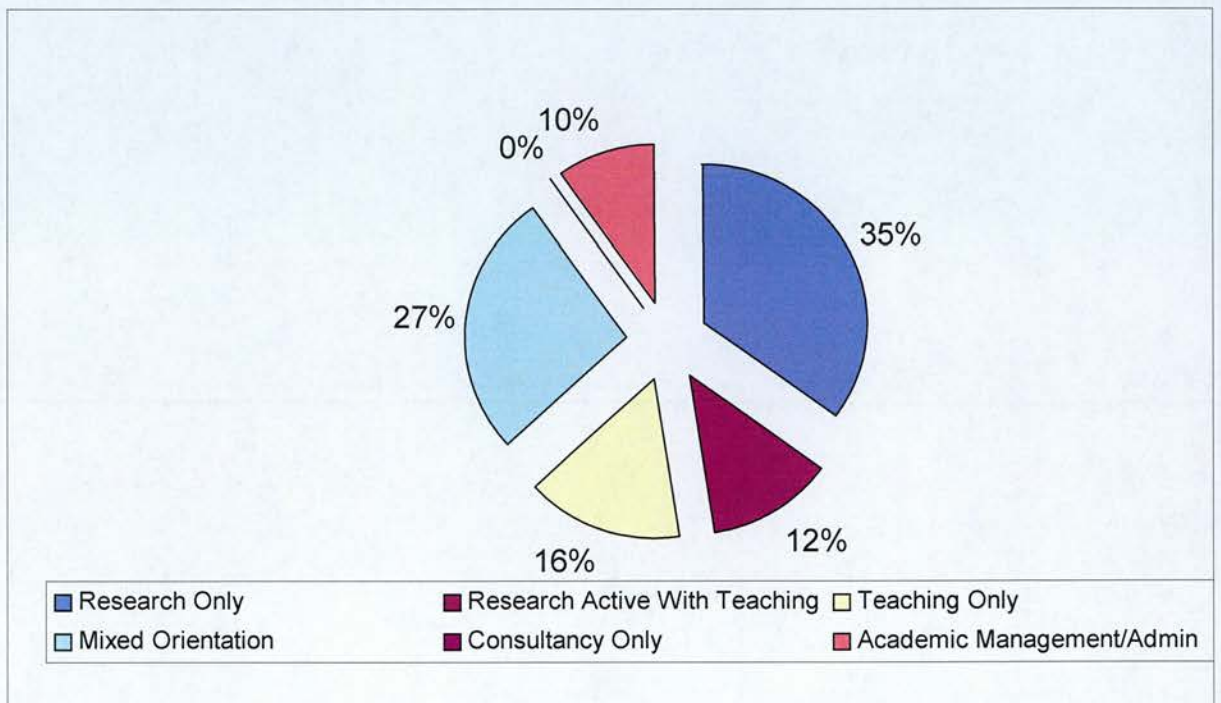


Figure 4.1 - Perceived Primary Roles of the IS/IM Academics (n=86)

As demonstrated in Figure 4.1, 35% of the web-based questionnaire respondents claimed research to be their primary academic function. A further 12% claimed their

primary role was equally divided between research and teaching. This compares to 16% claiming to adopt an entirely teaching-orientated role. None of the UK IS/IM academics claimed to have a purely consultancy-focused role.

Together, these results suggest that research is central to the work of a significant number of IS/IM academics either alone or in combination with other activities. It is interesting to note that when the background characteristics of the participants were analysed further to see whether any association exists between, for example, the type of university a participant worked in and the likelihood of adopting a primarily research-focused role within that institution, no associations appeared to be present. Indeed, approximately one third of respondents, irrespective of the type of institution they resided in, perceived research to be more important or pivotal to the identity of being an academic than any other academic function. Furthermore, level of qualification, gender, and length of service and areas of academic engagement did not appear to have any statistical bearing on how a participant perceived their primary role.

Whilst research, either alone or in combination with other activities, predominated, a purely teaching role was less common. This emphasis may simply reflect the current climate of preparation for the RAE2008 dominating academic activities.

Twenty-seven percent of respondents saw themselves as having a mixed role with teaching, research and consultancy activities perhaps reflecting the benefit of academics to cover all the 'bases' of academic work in the 21st century. Interestingly, although consultancy was included in the remit of these academics, none of the participants engaged purely in consultancy. This might indicate that other academic functions such as research and teaching are seen as being more important and meaningful to and for academics in IS/IM than consultancy. Alternatively this observation may be explained by the fact that universities were not originally designed to deal and promote consultancy. On the other hand, that 100% consultancy work would be better paid in the private sector is interesting.

An interesting observation is that 21% of the respondents reported that their main role was one of management and/or administration. This may be due to increasing administration and management workload, requiring staff to dedicate their working life, fulfilling bureaucratic internal and external regimes, caused by new managerialism (Pollitt, 1990).

From the above discussion, it is apparent that over a third of respondents reported their primary academic function to be one of research, with twelve percent seeing their central roles to be divided between teaching and research and a further third of respondents perceiving their academic role to be a mixture of other elements. Only sixteen percent reported a teaching only role.

A further dimension explored by the questionnaire related to the amount of time academics spent undertaking/performing academic functions. Interestingly, the results derived from question twelve would suggest that the respondents questioned spent approximately one third of their time undertaking teaching.

Whether the data discussed above is truly representative and realistic of perceptions of primary roles and the time-spent undertaking these roles is difficult to determine. Indeed, a number of factors may influence the results. For example, it is important to consider that the responses obtained represent a "snapshot" in time. This may be of relevance given the impending RAE2008 results. This study was undertaken in 2004/05 at a time when research development and activity would be working towards academic journal publications with a view to submitting for the RAE. Other compounding factors may include the current climate of change in IS/IM with many institutions merging and/or collapsing their business IS/IM functions with other academic areas such as computing science and strategy. Indeed, such climates of change may have a profound influence on the chosen activities of individual academics in an attempt to safeguard their roles and employment (Grant et al, 2003).

Having determined the perceived primary roles of the web-based questionnaire respondents within their institution, the next section explores further the nature of the

component elements of the nexus i.e. teaching research, scholarship and consultancy. This allows for further exploration into the relationships between the individual nexus components and how these elements are used, if at all, to inform teaching practice in IS/IM programmes of study.

Definitions, Perceptions and Areas of Engagement for Teaching, Research, Scholarship and Consultancy

Definitions of teaching, research, scholarship and consultancy were developed by the researcher and stipulated in the web-based questionnaire. All respondents were given the opportunity to challenge, engage with and suggest alternative definitions for each of the four areas. This allowed each participant to reflect on and clarify the definitions of teaching, research, scholarship and consultancy, prior to completing the rest of the web-based questionnaire. In the sections that follow, each of the areas of teaching, research, scholarship and consultancy is explored. How these areas are defined, perceived and prioritised by IS/IM academics is evaluated and contextualised.

Definition of Teaching

Teaching was defined for this study as *“the process of facilitating students’ learning of existing knowledge, via face-to-face teaching, on and off campus, distance teaching, blended teaching, and on-line teaching systems, etc.”*

The majority, 84%, of the web-based questionnaire respondents appeared satisfied with the definition given, i.e., the nature and essence of teaching to be connected with supporting students to learn, by helping students to make sense and find interconnections between theories and practice in IS/IM. However, fifteen respondents took the opportunity to comment further on the definition. Ten of these respondents provided additional comments, yet their comments broadly agreed with the basic essence of the definition given. Their comments emphasised the need to view teaching as a means for the student and the academic staff member to produce knowledge jointly. An example of such a comment is given below:

“One could reasonably incorporate a more constructivist perspective and view at least part of the teaching process as the joint production of knowledge by instructor and student” (Web-based Questionnaire Respondent 42450561).

Five of the commenting respondents did not agree with the idea of academics *facilitating* students to learn. They viewed teaching as a method of imparting knowledge, with the students doing the learning themselves and the academic only presenting the body of knowledge, rather than them helping the students to find the interconnections between the elements of the body of knowledge. This minority tended to see the nature and essence of teaching as being more a didactic ‘telling’ students’ ideas and events, a feeling illustrated in the following quote:

“When did academics become teachers? Teaching, though important, refers to the process of explaining WHAT to do and HOW to do it. (Web-based Questionnaire Respondent 42124313).

Having established that most IS/IM academics viewed teaching similarly, the next section establishes the IS/IM areas taught by the academics recruited to this study. By presenting and analysing these areas, it allows one to conceptualise how these areas of teaching may be underpinned or informed. Furthermore, it allows contextualisation of these areas with respect to how they interact as core elements of the nexus between teaching, research, scholarship and consultancy.

Areas Taught by the IS/IM Academics Sampled

In all 86 respondents (94% of the overall total) completed Question 14, a question constructed to evaluate the main teaching areas in IS/IM taught by the respondents. The results suggested that IS/IM academics teach on a wide range of IS/IM topics. For ease of presentation, these have been clustered into the following areas, ‘theoretical’, ‘technical/applied’, ‘managerial’, ‘research methods’ and ‘other’, and are presented in Figure 4.2.

The *Theoretical areas* of IS/IM include Strategic Information Systems Planning, Information Requirements Determination and Analysis and the organisational and social effects of IT/IS such as Knowledge Management. The majority of these teaching areas of engagement tend to have fundamental, tried and tested theories, given the lifespan of IS/IM, have been empirically tested in business, organisations and other enterprises, which have been refined and enhanced and all are currently still being employed by 'business' today with varying degrees of engagement and success.

The *Technical / Applied* areas are defined as those areas, which have a 'hands on' aspect to them. For the most part, these areas tend to use computer laboratories to support the teaching of the content. These areas include topics such as teaching software packages, hardware platforms, networking, enterprise-wide systems and web-related products and services for E-Business, such as local area networks, metropolitan area networks, etc. These areas of teaching engagement have a theoretical base, but these theories, are contemporary and even 'in fashion' which have not been fully tested over time and application in IS/IM, unlike the areas covered in the theoretical section above which have stood the test of time and continued application.

Managerial areas are defined as those areas, which require a deep understanding and appreciation of business functional areas and themes to contextualise and explain the areas being taught. Such areas include topics such as managing information, managing IS staff, decision-making, creativity, accounting and financial considerations, professional ethics, marketing, human resource management etc. Many of these areas have strong theoretical foundations to them, but they can be perceived as being related to the professional practice and they tend to be 'imported' from other reference academic disciplines, rather than being grounded in IS/IM completely.

Research Methods includes areas such as research philosophies, research methodologies, data collection methods, and data analysis techniques and

tools. These areas are generally taught to IS/IM post graduate and undergraduate students to provide them with the necessary research skills to be able to solve business problems and to prepare them for their academic dissertations/projects.

Areas covered by the term “*Other*” relate to those areas that are unique areas of speciality/interest to individuals or particular academic divisions and departments. Again, many of these areas have strong theoretical foundations, which can be taught in practical settings, but they only constitute a small percentage of areas taught. Teaching areas alluded to in this section included Pan-European IS for governments; Benefits Management from IT; Computer Law; IS Security; Global applications of IS; IS Ethics; HCI [Human Computer Interface]; Virtual Organisations; Enterprise and Entrepreneurship, etc.

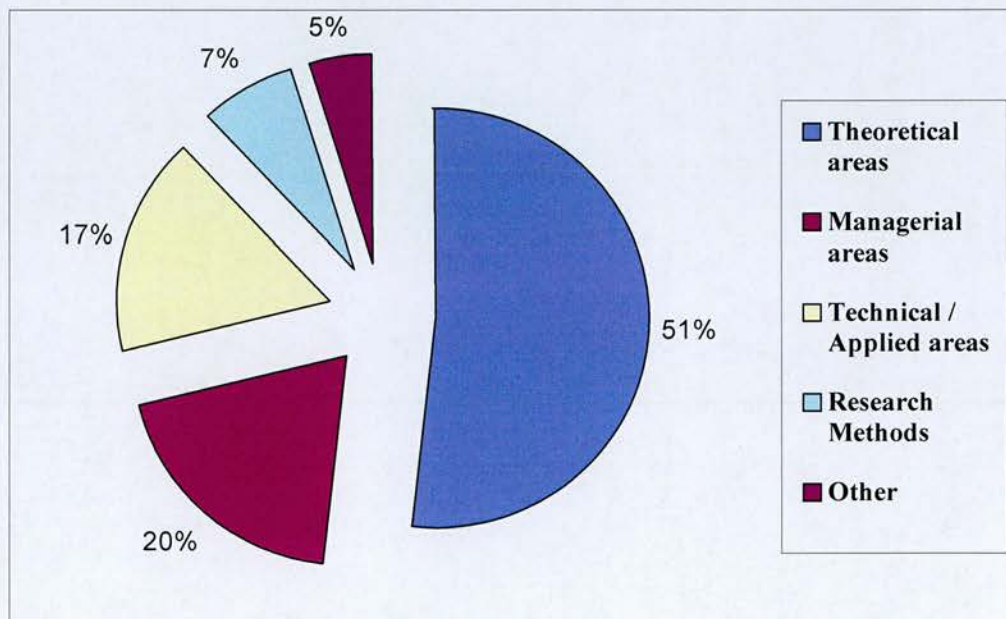


Figure 4.2 Areas Taught to PG Students Expressed as an Aggregated Percentage of Respondents Responses (n=86)

As demonstrated in Figure 4.2, it can be seen that the most widely taught areas of IS/IM in the UK undertaken by the web-based questionnaire respondents relate to the theoretical foundation areas of IS/IM. This is perhaps not surprising given that these theoretical areas provide the bedrocks to IS/IM curricula. Perhaps somewhat

surprisingly, given the historic and applied nature of IS/IM, the technical / 'hand on' areas of IS/IM and the more managerial and business areas of IS/IM attract lower levels of teaching engagement than the theoretical areas of IS/IM. This might suggest that what is taught on IS/IM programmes has evolved away from IT/IS practical skills and has appeared to move towards being a 'theoretical informed applied discipline', as discussed in Chapter One.

Perceptions of Teaching

The next line of investigation evaluated how teaching is perceived and should be perceived by the departments/divisions in which they are employed, by the IS/IM profession and by the HE sector in general.

The data from question 34 are presented in Figure 4.3. Over 40% of the respondents to this question felt that teaching was currently valued 'about right' by their department/divisions. A further 12% felt that teaching was valued too little by their departments/divisions and 16% felt that teaching was valued too much²⁷.

Interestingly, however, a little over 30% of respondents felt that teaching was being valued 'too little' by the IS/IM profession and the HE sector in general although similar numbers felt it was valued "about right."

No significant pattern emerged between these respondents, except that a marginal statistical relationship existed between perceiving teaching to be valued 'too little' if the respondent saw their primary function as being one of teaching, a point which is discussed further later in this chapter. A small percentage (17%) of respondents felt that teaching was over-valued by their departments/divisions. Whilst clearly caution must be exercised when interpreting these small numbers, it is interesting to note that these respondents were from research-focused universities and considered themselves

²⁷ The percentage statistics discussed here, add up to 68%. In answering this question, some respondents placed data in the generic heading box of teaching, as illustrated in Appendix Two. It is not clear whether this was in error. Nevertheless, these numerical results have been excluded since it is not possible to determine (a) why they completed the generic heading label; and (b) who or what is being rated. Therefore, the numbers represented in the text relate to the three areas expected i.e., the sector, the profession, and their department/division.

to be research-active. Thus, this result may simply reflect individuals feeling themselves to be pressured to teach when they might prefer to spend more time pursuing their own research interests.

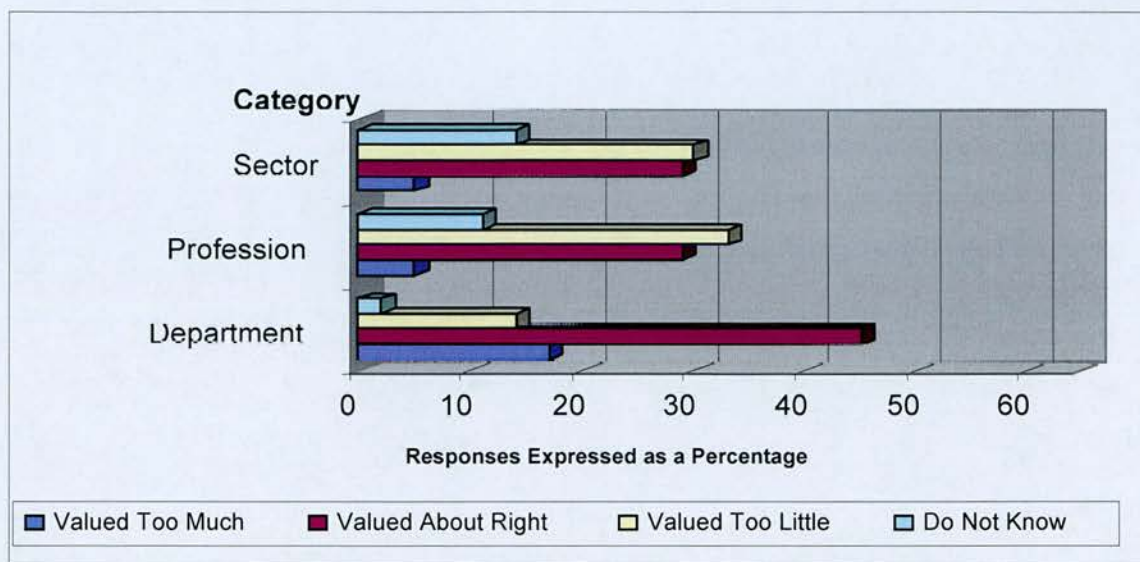


Figure 4.3 - Perceptions of How Teaching is Valued (n=76)

It is also interesting to note that when the respondents were asked how they felt teaching *should* be valued (addressed by question thirty-five of the web-based questionnaire), these results suggested that the teaching of IS/IM should be valued ‘more’ by the IS/IM profession (32%) and by the HE sector as a whole (28%). Whether or not this pattern of results reflects that teaching is felt to be perceived as an understated, or possibly an underappreciated academic activity, is difficult to establish from the data.

Definition of Research

Research was defined in the web-based questionnaire as “*a means of generating, testing and validating new knowledge and re-evaluating old knowledge, typically through conceptual work or through data gathering techniques such as observation, surveys, interviews, policy document analysis, etc.*” Analysis revealed that the majority (87%) were satisfied with the definition of research given. Twelve respondents provided additional comments on the definition commenting mainly on

the need to emphasise certain elements relevant specifically to research in IS/IM. Eight of the twelve respondents commented that, given IS/IM's applied historic development, action-centred research should have been made more explicit, especially given the social dimension of research and the fact that IT/IS represents a more applied set of professional skills than, perhaps, other disciplines. Examples of comments made regarding the definition of research are given below:

“We also need practical skill on the area. In IS research, it is quite difficult to perform scientific experiment. However, researcher should have some hand on experience on the system that is being tested or validated. For instance, if a researcher investigates the richness of Lotus Notes in Knowledge Management but she/he does not have the skills in using it. In my opinion, IS research lacks of the practical side” (Web-based Questionnaire Respondent 42127852).

“And through practice. Too often, IS researchers just watch people or ask people about their work (observation, surveys, interviews etc.) without actually DOING it. Research methods that include putting ideas into practice, such as Action Research, ought to be much more widely valued by the (predominantly male) IS community” (Web-based Questionnaire Respondent 42124313).

Research Engagement

Several questions within the web-based questionnaire were designed to evaluate or gauge the level of research activity within the population questioned. Firstly, the respondents were asked to comment on the amount of time spent in a twelve-month period on research (question 12) and, further, on their main research areas (question 20). Secondly, the respondents were asked whether or not they saw themselves to be research active. Thirdly, they were asked whether they submitted work under the RAE 2001 and the rating that the work achieved.

The results from these questions are interesting. Nearly 37% of a respondent's academic time is spent undertaking research, a figure that is similar and, indeed, slightly exceeds the 34% time allocated to teaching over a twelve-month period (areas explored by question 12 of the web-based questionnaire)²⁸.

²⁸ Given the fact that 15% of the sample was academic staff from overseas undertaking primarily a research function, pursuing a PhD within the UK in IS/IM the percentage may be slightly than is the

Having established that on average the respondents reported to spend around one third of their time on research activity, the next line of questioning was designed to evaluate the perceptions and nature of the research activity. In question 21, respondents were asked to comment on whether or not they thought they were research active, in order to evaluate and narrow the use of the idea of being active in and with research.

Of the 84 respondents who answered this question, 88% indicated that they were active researchers. By performing several cross tabulations it is interesting to note that age appears to be a factor in determining whether or not respondents' classify themselves as research active. Indeed, nearly all of the younger age banded respondents (age is worked about based on an average of length of teaching and research service and position) claimed to be research active, with those respondents in the older age brackets having more of a balance between active and non-active research classifications. This might suggest that new to the profession academics tend to engage in research, with those who perhaps have been in the HE systems for a number of years or have come in from industry, making a choice or failing to see the need to be perceived as being research active.

When this research activity was further interrogated, specifically by questioning whether respondents had submitted under the last research assessment exercise, interesting results were obtained. Firstly, of note, less than half (i.e. 44) responded to the question. The reason for this failure to respond is not clear. It may simply reflect poor question design, a common cause for failure to answer questions in questionnaires (Groves, 1989). Alternatively, the question may have caused some unease amongst the respondents. Indeed, that this might be the case is perhaps supported by the second important finding from this line of questioning i.e. that the majority of those responding to the question had not submitted under the last RAE. Clearly, the RAE is not the only measure of research activity. However, these findings together might suggest that although most of the group considered themselves to be research active, this did not appear to be borne out when an objective

case for UK IS/IM academics. However, given the fact that they are registered in the UK and have been granted permission to join the UKAIS then the results have not been factored.

measure of research activity was used to evaluate their research outputs. The finding that, of the 74 respondents claiming to be research active, only fourteen, 32% reported actively having submitted work under the last RAE further supports this. This may simply suggest that research outputs were generated but not submitted, or known to have been submitted, under the RAE, or, indeed, that they were not able to be submitted because of the lack of suitability or departmental/university unit of assessment groupings to submit under.

Indeed, in this regard, it is of interest that, UK-wide; only 199 IS/IM academics submitted work under RAE2001²⁹, a finding perhaps suggesting that the RAE may not be a reliable measure of research activity at least for IS/IM. Alternatively, more respondents 88% reported to being research active than is borne out by the results obtained elsewhere in the web-based questionnaire, with only 32% (14 respondents) reporting to have had their work presented in the last RAE. This discrepancy may suggest that a majority of the 88% reported research active respondents had a very positive, and perhaps an over inflated, image as themselves as researchers (either in the past, or currently).

To evaluate further the research activity of the web-based questionnaire respondents, the areas researched by the respondents was explored further.

Research Areas

Of the respondents in the study, 94% (86 out of 92) completed question twenty³⁰, which was designed to evaluate the main areas in which IS/IM research was undertaken by the web-based questionnaire respondents. These IS/IM research areas were based on key areas outlined by the UKAIS.

²⁹ A synthesis of the RAE2001 Overview Reports for Business & Management; Computing and Information Systems and Librarianship and Information Management (available for the HERO Web Site).

³⁰ Two respondents selected the 'Not Applicable' Option to question 20. It is, therefore, assumed that these two respondents answered this question in error since only 84 respondents had previously indicated that they considered themselves to be research active.

The researched areas have been clustered into the following areas and are presented in Figure 4.4. It is worth noting that these areas given the design of the web-based questionnaire are similar to the areas already presented concerning teaching areas. However, one difference that did emerge was about the ‘other’ areas of research undertaken, being different to those of teaching.

With regards to the differences with regards to what is research, the ‘other’ category covers areas, which tend to be unique to individual’s and include developing areas in the domain of IS/IM such as the Process of social inquiry; SMEs and ICT critical theories; Managing IT enabled change Management history; Computer Law; IT/IS Security; HCI; e-Government; Linguistic analysis of IS Development methodologies; IS/IM in higher education; Online shopping behaviour; Information systems pedagogy; History of IS/IM; Metrics and software quality and Software process improvement. These areas which are still being explored and tend to reside on the on the periphery of IS/IM curricula³¹.

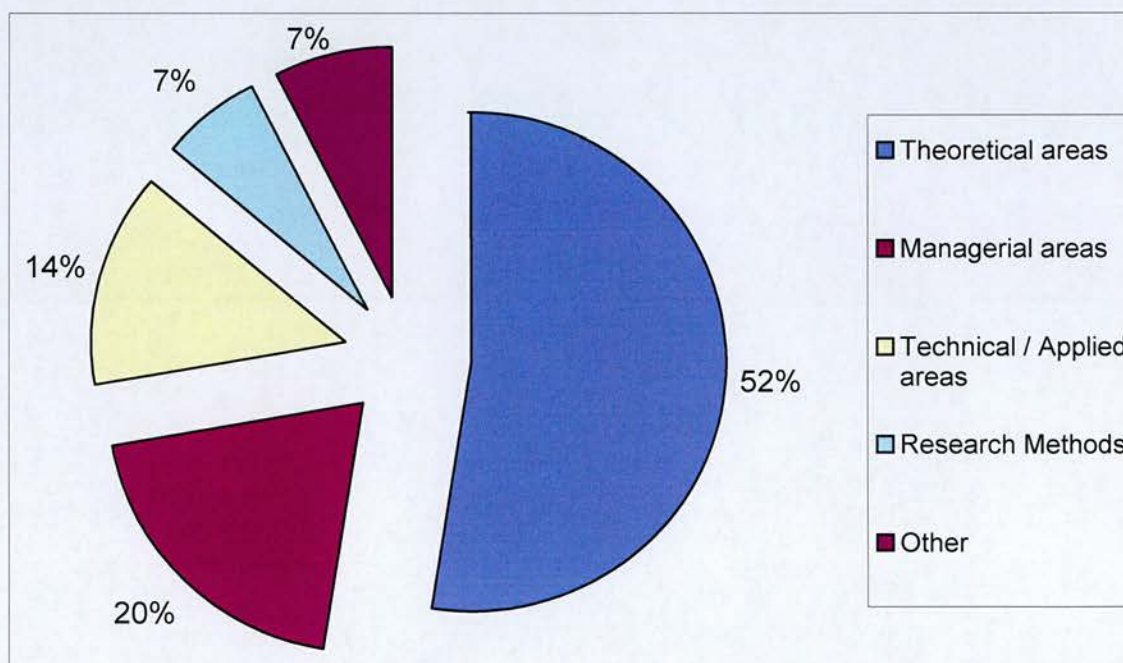


Figure 4.4 - Areas Research by Respondents as an Aggregated Percentage of Responses (n=84)

³¹ Based on the International Undergraduate and Master’s Level ‘suggested’ areas of study, advocated by the Association of Information Systems, Educational Development Committees.

The predominant areas of research activity are firmly grounded in and on the 'theoretical underpinnings of IS/IM' (52%), which includes areas such as Organisational and social effects of ICT', Strategic Information Systems Planning and Knowledge. The 'managerial' (20%) and technical 'hands on' areas (14%) are relatively less researched which is perhaps a little surprising given that managerial and technical aspects of IS/IM once underpinned the practice of IS/IM (Keen, 1987). Interestingly, this spectrum of responses identifying areas, which are actively researched by participants, is similar (with the exception of the other category) in nature to those reported for teaching areas. For both academic functions, teaching and research, suggests that a shift from engagements with practical areas and elements of IS/IM has moved towards theoretical engagements. This shift in terms of what is researched may be due to a number of factors. One factor may be the perceived need of the respondents to help establish IS/IM as a credible discipline in the eyes of other disciplines, or, that IS/IM academics may find it hard to secure research council funding, and, as such, conceptual or theoretical research is seen as an affordable alternative.

Perceptions of Research

Questions 33 and 35 of the web-based questionnaire were designed to evaluate how research is and should be valued by the respondents' with regards to their academic departments/divisions, by their IS/IM profession and by the HE sector in general. As demonstrated in Figure 4.5 below, it can be seen that fewer than one in six respondents felt that research was valued 'about right' by the HE sector, with a little over one in eight respondents expressing they felt that the IS/IM profession valued research about right. With little over one in seven respondents reporting that, their own academic department valued it about right. In contrast, 22%, 8% and 14% felt that research was 'valued a lot' by the HE sector, the IS/IM profession and their own

departments respectively. Only two respondents felt that their departments valued research too little³².

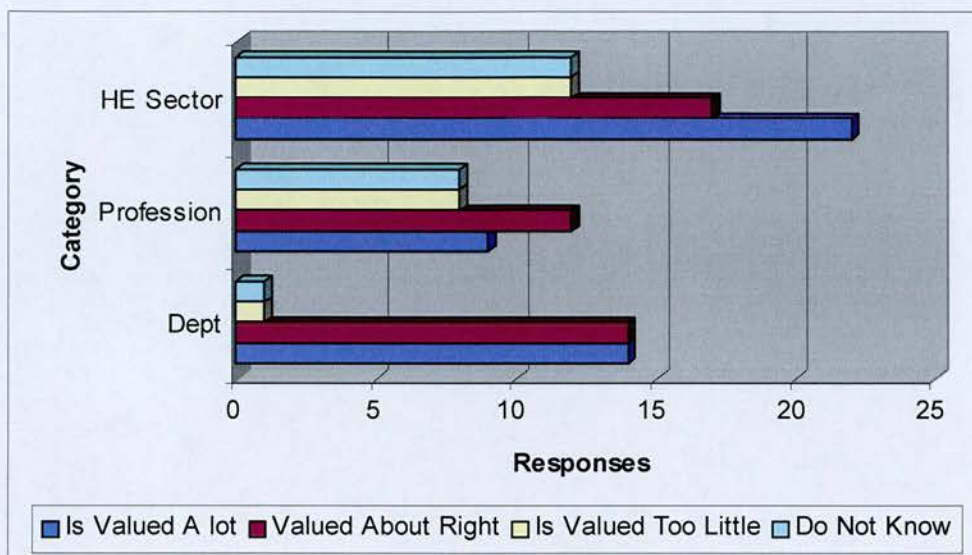


Figure 4.5 – Perceptions of How Research is Valued (n=78)

Question 35 addressed the issue of whether research should be valued differently by their department/division, the IS/IM profession and the HE sector in general. Although 56%, 62% and 61% felt that research should be valued more by departments/divisions, the IS/IM profession and the HE sector in general, with less than 3% for each category reported that research should be valued less by these groupings respectively. These results are interesting. If, as this data would suggest, research needs to be regarded more highly by the IS/IM profession and by the HE sector in general, it is perhaps surprising that so few respondents appeared to be RAE active. However, given the imminent RAE2008 deadline, a lot of press and discussion has been written about research and the RAE; so the need to value research more in the future may be due to the temporal nature of the research assessment exercise.

³² The percentage statistics discussed here, add up to 68%. In answering this question, some respondents placed data in the generic heading box of research, as illustrated in Appendix Two. It is not clear whether this was in error. Nevertheless, these numerical results have been excluded since it is not possible to determine (a) why they completed the generic heading label; and (b) who or what is being rated. Therefore, the numbers represented in the text relate to the three areas expected i.e., the sector, the profession, their department/division.

When further analysis is undertaken, the data suggest that fourteen respondents reported that research should be valued more by their departments tend to class themselves as being research active and reside in teaching led universities. However, the same fourteen respondents also felt that the HE sector and the profession valued research “about right” are interesting. It suggests that they have a negative perception as to how their institution values research or that they felt that their teaching only focus may be inappropriate for them as researchers.

Set in opposition to these views, there is small percentage (22%) of respondents, who felt that research was being overvalued by their department/division. It is interesting and relevant to note that these individuals tended to be ‘teaching only’ staff on the whole and it is then not surprising that they may have felt that research was regarded too highly by their department/division.

The statistics suggest respondents in the more ‘modern (redbrick)’ (28 respondents)³³ universities and ‘new’ universities (ex-polytechnics) tended (24 respondents)³⁴ to rate teaching and research, higher, than other respondents from traditional universities, who tended to rate research higher than teaching.

Returning to what areas were researched compared with what areas were taught, a Pearson’s test was performed (a test for a linear relationship existing between two sets of variables) the result suggests a formal linear link exists between what is taught and what is researched, despite the fact that both the areas taught and researched are predominately theoretical. This may suggest that universities engage in teaching and research for differing purposes and agendas.

³³ Not all staff from this type of university completed this question.

³⁴ Not all staff from this type of university completed this question.

Definition of Scholarship

Scholarship was defined in the Web-based questionnaire, as *“the process that seeks to identify, interpret, draw together, and bring new insights to other peoples’ original research with regards current and emerging thinking, with regards personal development of skills, expertise and knowledge.”* The majority of respondents (85%) were satisfied with the definition given. However, fourteen respondents took the opportunity to comment upon the definition. The additional comments were interesting in that ten felt that scholarship was connected with ‘*doing*’ research. This can be illustrated by the following quotes;

“Why separate this from research? Is not the process of bringing insights part of good research”? (Web-based Questionnaire Respondent 42123756).

“I’m not sure how this differs from research. To me, the term scholar refers to a person who is an acknowledged expert in their field. They are a learned person, well versed in one or many branches of knowledge; a person of high literary or scientific attainments” (Web-based Questionnaire Respondent 42306769).

“In that case Scholarship is part of research isn’t it? I think that the idea of distinguishing between research and scholarship is just part of the UK government agenda to get higher education on the cheap and has no relevance to actual researchers and scholars” (Web-based Questionnaire Respondent 43787328).

These ten respondents illustrate the contested terrain and the conceptual tension that exists between research and scholarship, which is evident in previous research studies on the nexus between teaching and research, see Chapter Two. These ten respondents found the separation to be wrong and artificial.

Interestingly, when cross relating these individual responses, the ten respondents all shared similar background characteristics. All the respondents who engaged with this definition, above, hold doctorates, claimed to be active researchers and all resided in traditional or red brick universities. On further analysis, all teach at post-graduate level, and they do not hold a formal teaching qualification and are not members of the Institute of Learning and Teaching/Higher Education Academy.

The other four respondents who engaged with this definition suggested that Scholarship was connected to being curious and serving the community of IS/IM, i.e., journal editorials, journal reviewing and serving on national and international committees, etc.

Surprisingly, no comment or response challenging the definition was made concerning the Scholarship for Teaching. All the respondents to this definition appear to have concentrated their responses on the Scholarship of Teaching, i.e., the content of IS/IM. This lack of challenge or clarification is supported by the limited educational research undertaken by the respondents.

Interestingly, 76% (65 out of 86 respondents, of question 27) described themselves as individuals who actively engaged in the Scholarship of IS/IM (predominately meaning the content of IS/IM, based on cluster analysis to question 29). What is surprising is the little activity undertaken by the respondents regarding the Scholarship of Teaching, with only 9% (based on cluster analysis) of the areas of scholarship being undertaken by respondents focused on the scholarship of teaching, i.e., on assessment issues, rather than the scholarship for teaching, the latter accounting for the other 82%. Clearly, there is a difference between the numbers of respondents engaging in Scholarship for versus Scholarship of Teaching. Scholarship For Teaching corresponds to the subject matter/content of IS/IM, whereas the Scholarship of Teaching corresponds to the process of teaching. Whether this difference in numbers reflects a true difference between respondents or a failure to understand the terminology or the question is unclear. Although only 9% engaged in the Scholarship of Teaching, 69% (45 of the 65 respondents who answered question 27) reported themselves as being individuals who actively engaged in the scholarship of learning and teaching of IS/IM.

In order to determine how much time the respondents spent on 'scholarship', a 12-month period was selected in order to accommodate varying academic workloads throughout the academic year. The results indicate that the respondents spend on

average during a 12-month period, 11% of their working time on scholarship activities, with administration and management accounting for 18% of their time, with research (36%) and teaching (31%) and consultancy (5%) accounting for the rest.

In a similar manner to the exploration of teaching and research outlined above, the next section outlines the areas of scholarship in which the respondents actively engaged. The data relate to the responses to question 29 of the web-based questionnaire drawing both on the subject content (Scholarship for Teaching) and the knowledge and skills of how to teach the content of IS/IM (Scholarship of Teaching).

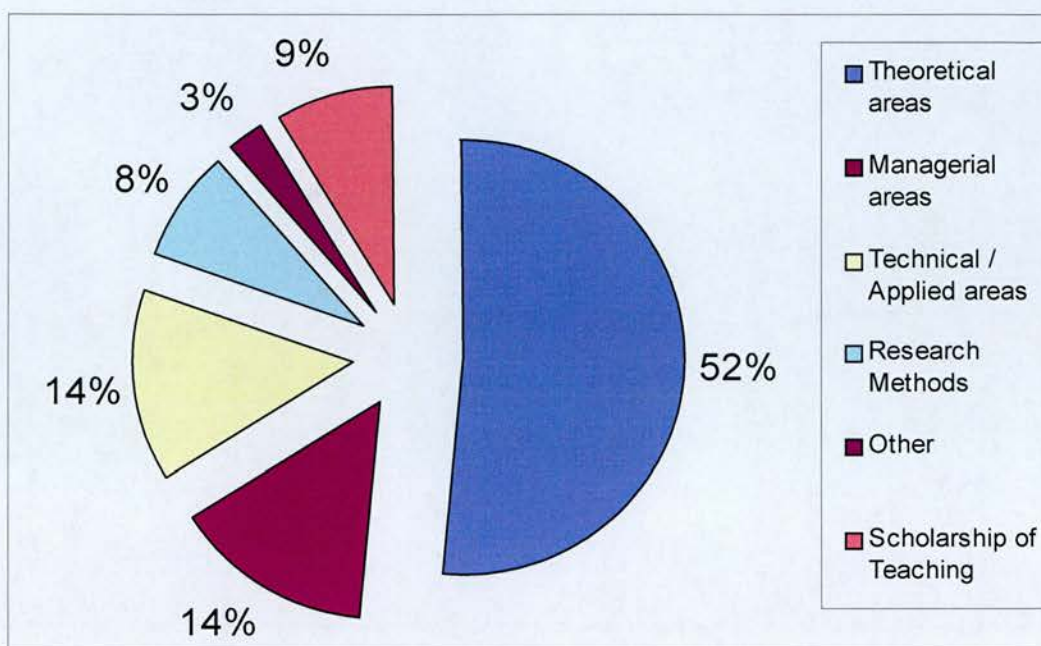


Figure 4.6 - Areas of Scholarship Engagement by Respondents as an Aggregated Percentage of Responses (n=65)

The scholarship areas undertaken by the respondents have been clustered into the following areas and are presented in Figure 4.6. It is worth noting that these areas, given the design of the web-based questionnaire are similar to the areas already presented concerning teaching areas. However, there are a number of differences unique to scholarship.

These being:

Scholarship of Teaching included areas that could be themed into the following view “is an aspect of practice” (Hutchings, 2004). With includes developing assessment strategies, or reading the available educational literature to assist in professional reflection on practice, etc.

Other is defined as those areas, which are unique to individuals which includes developing areas in the domain of IS/IM, Action Research; IS/IM issues in SMEs; Computer Law; Computer Ethics; Computer Security; E-learning, which are different to those of research and teaching.

The main areas of Scholarship engagement are related to ‘knowing’ what is happening about the content of IS/IM and, like the teaching and research engagement, are firmly rooted in the theoretical areas of IS/IM with 52% claiming scholarly engagement in these areas. Concerning the Scholarship of Teaching, only 9% of the total time spent was spent on ‘scholarly’ activities.

Comparing the areas of scholarly engagement with the research and teaching areas, it is apparent that the areas of scholarly engagement are not dissimilar to the central areas of research and teaching engagements, mentioned above. This suggests that the actual process of undertaking scholarship is rooted in the same subject matter of IS/IM rather than being centred on teaching and educational development. Further evidence in support of this is found when respondents were asked about their participation informal learning and teaching qualifications, such as the Postgraduate Certificate in Tertiary Level Teaching Methods. Just over a third (36%) of the were involved with a formal teaching qualification. Interestingly, only 21% were members of the Higher Education Academy, formerly the Institute for Learning and Teaching in Higher Education. This statistic is interestingly, as it suggests the perceived ‘low’ standing, the respondents had of the historic and developing national agency in the UK to promote and develop teaching and learning in HE, perhaps due to not seeing the value and benefit of being individual members.

Perceptions of Scholarship

As in the sections above, the respondents were asked to consider how scholarship is perceived.

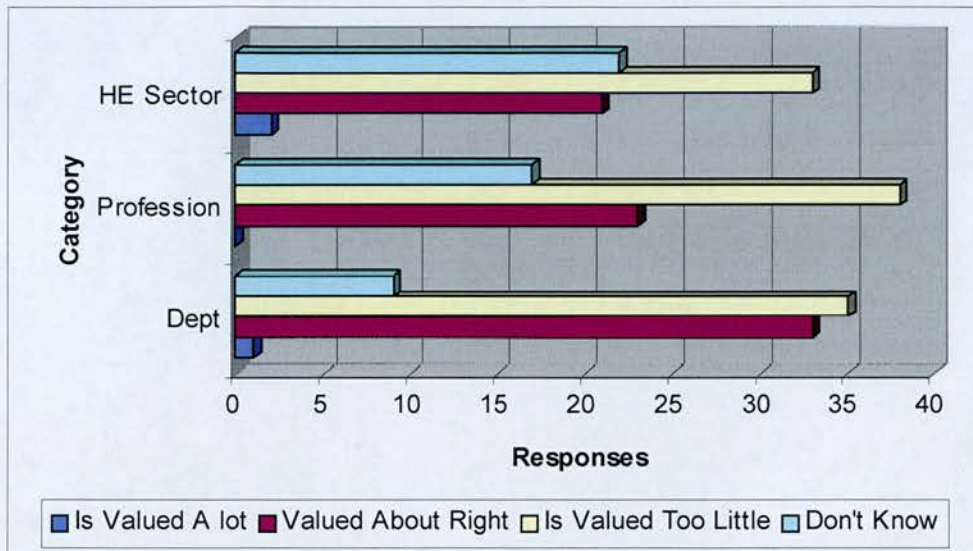


Figure 4.7 - Perceptions of How Scholarship is Valued (n=78)

As shown in figure 4.7, it is evident that, in all categories (HE Sector, 33%; Professional 38%; Department 36%), the perception of the respondents was that scholarship was valued too little. However, no clear pattern emerged as to any common characteristics from the respondents. However, when question 35 of the questionnaire in incorporated, which was concerned with evaluating how respondents perceived scholarship be valued by their department, the IS/IM profession and the HE sector. The results suggest that, overall; scholarship should be valued 'more' by the IS/IM profession (72%), by the HE sector as a whole (72%), and by their own departments (76%), (n=76).

Set against these current and future perceptions of scholarship, approximately one quarter (22%) of respondents felt that scholarship was being over-valued by their departments/divisions and that scholarship should be valued less than currently.

When analysing the data from the questions exploring how scholarship is and should be valued, it became readily apparent that, contrary to the situation when the teaching and research data was analysed, a significant number of respondents (fourteen) did not know how to rate the area of scholarship. This pattern may reflect a poorly constructed question, or that the concept of scholarship is a complex area for respondents to internalise and comment upon.

Having defined, characterised and explored perceptions regarding teaching, research and scholarship, the next section considers the final component of the nexus, namely consultancy.

Definition of Consultancy

For the purposes of the questionnaire, consultancy was defined as “*an academic applying existing knowledge to an agency, where the problem situation is usually client specified, in order to solve or diagnose a problem[s] e.g.: day-to-day problems, longer term strategic issues, etc*”.

Analysis revealed that the majority (85%) respondents were satisfied with the definition given. Fourteen respondents commented further, with eleven respondents feeling that consultancy was about academics bringing theoretical knowledge to organisations to help identify problems, making sense of them and solving them. Three respondents questioned the terminology, drawing specifically on the term ‘agency’, commenting that different organisations would require different theoretical knowledge and skills to be used, e.g., public versus private organisations.

In order to establish the level of consultancy engagement, consultancy gross income (i.e., revenue) was used to illustrate the level (in terms of monetary gain over the last three years) of the individual academic's involvement in knowledge transfer.

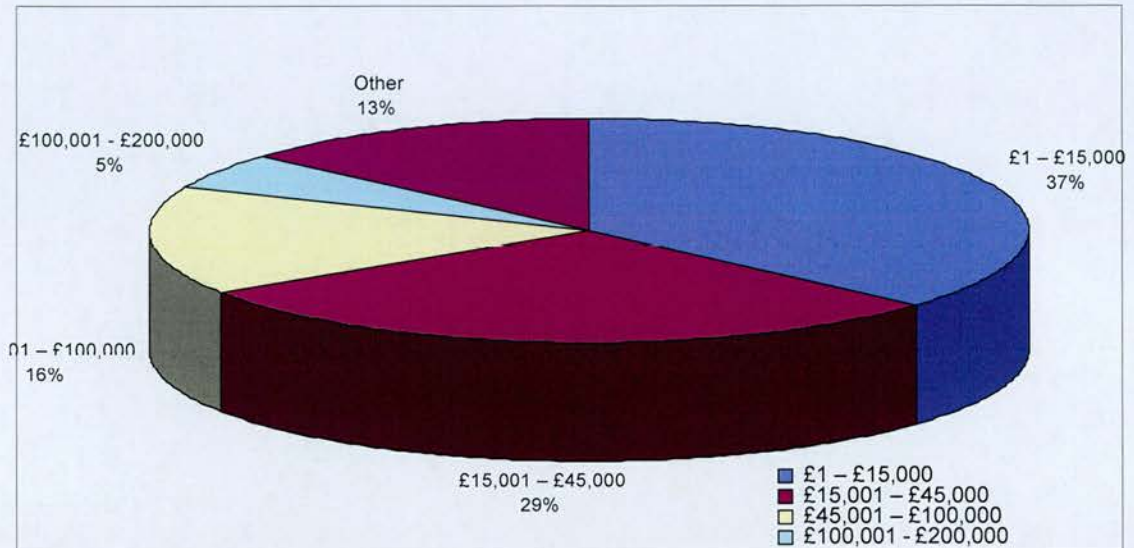


Figure 4.8 - Gross Consultancy Income (n=38)

The results suggested that, of the 85% respondents who answered this question, 44.7% (38 respondents) reported claimed to have engaged in consultancy. This degree of participation is far lower than that reported for the other components of this study, namely teaching, research and scholarship. Interestingly, when a twelve-month period was selected in order to accommodate varying academic workloads throughout the academic year, the results suggested that, on average, the respondents spent around 5% of their 'total academic time' engaged on and with consultancy activities. This would suggest that academics appear to be interested in pursuing consultancy, but that the actual level of engagement is limited. Why the respondents felt the need to pursue consultancy activities is not clear from the data. However, it may be to 'earn' additional monies to compensate for the lower academic salaries they may receive compared to colleagues working in professional practices. Alternatively, they may feel the need to keep a 'foot' in the camp, by way of being able to 'practice what they preach' and, possibly, to keep the link to being an IS/IM professional, rather than being solely an IS/IM academic.

Nevertheless, it is important to acknowledge the possibility that a ‘shadow / grey academic consultancy economy’ may exist, i.e., staff participating in consultancy activity, but not declaring it to their university. This, indeed, may skew the results, as a true picture may not have been presented. In January 2006, the Times Higher Education Supplement, suggested in a review article that not all universities, such as Oxford, Cambridge and Nottingham have a staff consultancy register, but they do encourage staff to engage with consultancy (THES, 2006). Following on from this point, the same review article, reported that for the HE sector in the UK, (based on a recent survey of 70 UK universities) found the total income of £168 million was only the ‘tip of the iceberg’, for consultancy income in HE (THES, 2006). Finally on this point, returning to this research, the fact that 16% of the respondents comprised visiting academics from abroad, on student visa’s also skews the results as these foreign staff members may be excluded from pursuing consultancy given their immigration status. Thus, it is difficult to establish a completely accurate view of consultancy income.

Nevertheless, returning to Figure 4.8, just over a third of all consultancy activity undertaken by the thirty-eight respondents was in the most part for income less than £15,000 (36.8%); followed by almost a third (29%) attracting money in the range £15,001 to £45,000. Only a small minority of academics (5.3%) obtained more than £100,000 from consultancy activity. Thirteen percent earned an “other” amount of consultancy money either in excess of £200,000 or payment in extra monetary form. Some respondents provided additional comments in this consultancy section. Five respondents suggested that ‘an additional value’ to academics engaging in consultancy, was to fund research. Indeed, one of the five respondents stated;

“About 40K [referring to the income obtained] but that covered the employment of a researcher for two years” (Web-based Questionnaire Respondent 42123984).

The other four respondents tended to place the monies into an account, which they used to support conference and workshop travel and attendance, thus also suggesting a

link to research activities and, to a lesser extent, scholarship. Taken together, these results suggest that the majority of consultancy activity undertaken by the respondents (41%) was small scale, in terms of gross income obtained.

However, based on analysis, a strong statistical relationship does exist between areas of research undertaken and consultancy services. Conversely, no statistical relationship exists between what is taught and what is consulted in.

Of the 38 responses, to question 32, the results are clustered in rank order, concerning the key areas of consultancy employed by the respondents:

Technical / Applied 'hands on' areas such as E-Business, IS Security, Business Intelligence (Data Mining, Data Retrieval Tools); Internet Spam (creating and preventing); legacy systems integrations with the Internet.

Managerial areas, such as Benefits Management; IS Strategy Development, Enterprise Resource Planning; business systems analysis. However, many of these areas have strong theoretical foundations, but they can be perceived as being more of the professional practice side of things, rather than academic.

Theoretical areas that are emerging, i.e., Knowledge Management and E-Learning.

Interestingly, the main area of content for consultancy is firmly rooted in and with the technical and applied areas of IS/IM, which is counter to the main areas of teaching and to a much lesser extent research engagements.

A further observation from the results is that none of the respondents, (n=38 for question 31) mentioned the use of Teaching Company Schemes or Knowledge Transfer Partnerships, the UK Government's flagship to encourage collaboration between academia and industry. This might simply indicate a lack of exposure to such schemes. However, interestingly, at least eight respondents had experience of

such schemes as evidenced by the responses to question thirty-three, in which these eight respondents noted exposure to Teaching Company Scheme / Knowledge Transfer Partnerships although they did not appear to see this as a form of income generation or consultancy. It is not clear whether it fell into any of the other categories of teaching, research or scholarship activity.

Perceptions of Consultancy

Figure 4.9 presents the responses to question 33 exploring the perceptions surrounding the value of consultancy. Nearly half (45%) of the respondents felt that consultancy was valued “about right” by their departments.

Interestingly, a little less than a third of respondents’ of how consultancy was perceived as being ‘valued too little’ by the sector (30%) and profession (33%), illustrated that engagement in consultancy in their view should be valued more as an academic area of activity. The majority of the respondents to question 35, regarding how consultancy should be perceived in the future, felt that, although important, consultancy should be valued ‘a little’ by the profession (42%); the HE sector (47%) and by their own department/division (49%), but the use of the rating ‘a little’ does suggest that consultancy should be given less value than given for teaching and research.

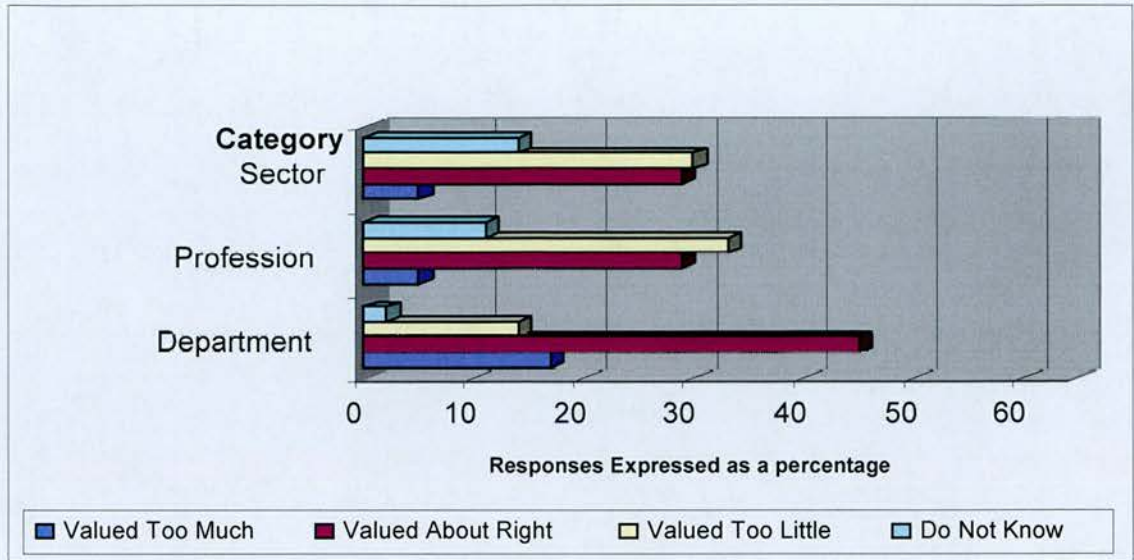


Figure 4.9 - Perception of How Consultancy is Valued (n=78)

Having discussed the respondents' views, experiences and perceptions of consultancy, in addition to those of teaching, research and scholarship, it is important, having established the foundation blocks, to establish what academic outputs respondents produced and to evaluate which of these were directly used to inform teaching practice.

Academic Outputs

The main academic activities of academics tend to be measured and are often compartmentalised into 'teaching', 'other knowledge transfer activities' and 'research'. While this is a useful distinction for some purposes, such as planning and resource allocation, it overlooks the interdependence of these activities. Research activities create knowledge and understanding, and it is this knowledge that is then 'transferred' to other 'stakeholders'; students, fellow academics, employers, business, trade unions, voluntary bodies, and so on. The argument that an institution could engage in knowledge transfer without investing in knowledge creation simply by supporting staff in the acquisition of existing knowledge does not hold at the level of higher education. The reason for this lies in the fact that the return from research lies

not just in its end product, i.e., articles, books etc, but also in the insights and enhanced professionalism that typically follows being involved in research.

This section explores the actual academic outputs / artefacts the respondents from the UK IS/IM community members undertook or engaged with. Question 33 was developed to identify the academic outputs or artefacts being created in order to then establish what academic outputs were or could be used to inform teaching practice. The outputs were grouped into three categories to aid analysis and subsequent discussion.

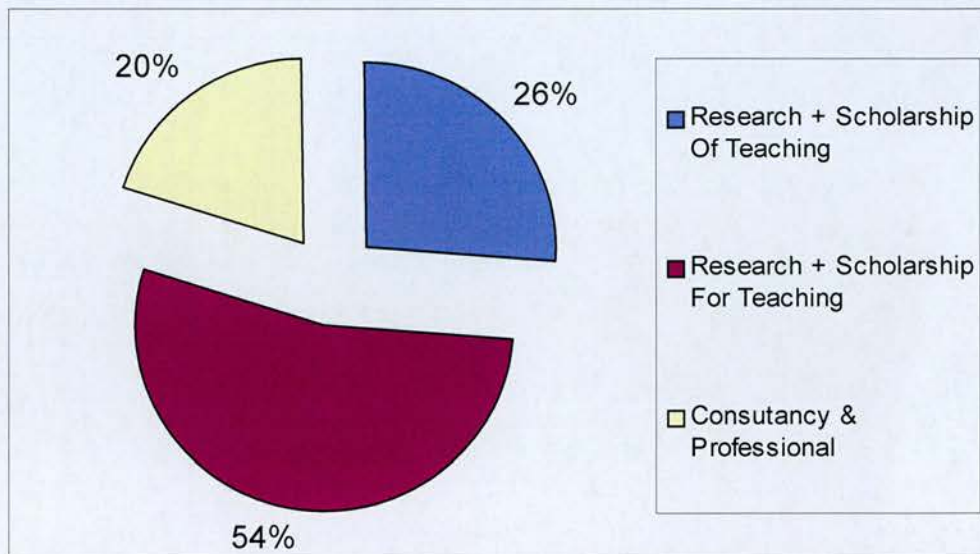


Figure 4.10 - Main Areas of Academic Output Expressed as an Aggregated of Responses (n=85)

The three areas above are categories developed to summarise the range of academic outputs produced by the respondents:

Research and Scholarship of Teaching, relates to academic outputs respondents had engaged in or with over the last three years of their academic life. This category, contains academic activity outputs such as journals, books, book chapters and conference papers where focus was on the *learning and teaching* of IS/IM and dedicated learning resources to support teaching, such as open/distance learning packages, E-Activities, etc.

Research and Scholarship for Teaching, this category contains academic activity outputs such as journals, books, book chapters and conference papers whose focus was *on the subject domain* of IS/IM. This category also includes activities such as journal reviewing, reviewing research proposals for funding agencies and doctorate level supervision.

Consultancy and professional, relates to academic consultancy and service to the professional IS/IM community. This category contains academic activity such as involvement in Teaching Company Schemes (Knowledge Transfer Partnerships), executive and management briefing sessions, developing hardware and software systems and writing for the IT/IS trade press, like Computing Weekly, etc.

Based on the responses from eight-five respondents (92% of the sample), the top five academic outputs were (with actual aggregated response rates expressed as a percentage):

- Conference Papers on IS/IM topics (88%);
- Journal Papers / Book Chapters on IS/IM topics (74%);
- Doctorate Level Supervision (45%);
- Teaching and Learning Case Studies (41%);
- Reports To/For Professional Bodies (34%).

Interestingly, but not surprisingly the actual 'skills' or practical elements of an academic's work only contributed 22% of the actual output. It would appear that the respondents are developing and engaging in and with academic areas of activity, rather than keeping their technical / practical skills sharpened and enhanced, which is surprising giving the early stages of shift towards problem based learning in IS/IM, in Scotland. However, this emphasis may reflect the reluctance of most academic journals to accept practical / prototype pieces of work preferring instead to consider more mainstream academic material.

One interesting area that features strongly is doctorate level supervision. One reason why this is such a strong area is the fact that under the rules and regulations for RAE2008, doctorate supervision, counts as part of the overall research rating and profile, whereas historically it did not feature as firmly in the previous RAE.

An exploration into how, if at all, the relationships between teaching, research, scholarship and consultancy are operationalised in the teaching practices of academics is presented next.

Academic Outputs that Inform Teaching Practice in IS/IM

As was noted in Chapter Two, one of the areas often overlooked in the majority of the nexus studies to date, has been any exploration as to how the actual output actually informs the teaching practice of academics. As such, this work has aimed to investigate the extent to which the academic activities of research, scholarship and consultancy inform IS/IM teaching practice. The following question (question 36) and analysis in-conjunction with the results presented above attempt to address this issue. Question 36, was completed by 73 respondents, which equates to 79% of the whole sample.

The following academic engagements are ranked in order of significance and represent the areas the respondents believed informed their teaching practice of taught IS/IM postgraduate programmes of study. They are presented in the following order; teaching practice that is informed by research engagements, then by scholarship engagement and finally by consultancy engagement.

Teaching Practice Being Informed By Research Outputs/

Artefacts (n=73³⁵)

- Own academic journal papers;
- The use of research colleagues to teach part of the module/course being taught; usually in a workshop setting;
- Case studies based on research activities;
- Supervising the dissertation / thesis stage of a student programme of study.

Teaching Practice Being Informed By Scholarship Outputs/Artefacts (n=73)

- Experiences of others research outputs (in the form of reading lists) and with what companies are doing in the form of case studies to teach a particular aspect of a module;
- Teaching resources that I am aware of (e.g. web sites);
- My own reading;
- Own life experiences.

Teaching Practice Being Informed By Consultancy Outputs/Artefacts (n=73)

- Own experience of doing consultancy (both process and the outcome);
- Guest speakers (other consultants) and key people from industry;
- Others people's experiences via trade news interviews, etc.;
- Case studies of experiences developed by others who have been or are consultants, mainly commercial people.

To supplement the evaluation of which academic activities inform IS/IM teaching practice in the UK, two open-ended questions, were used to determine other activities that academic staff engage with that could inform their teaching practice. Thirteen

³⁵ Nineteen respondents skipped this question; this is comprised of the seven who skipped the previous question, with the remaining twelve, not being easily explained. The primary reason why the high number of respondents' skipped this question is probably primarily due to having too many criteria and the complex and/or ambiguous paraphrasing.

respondents contributed additional areas. Based on content analysis of these responses, four categories are presented:

- Current issues reported in trade magazines and journals (three respondents);
- Dedicated Web Sites (or Computer Aided Learning systems contained within) such as IS world, LTSN (Learning, Teaching Support Network); AIS (Association of Information Systems); UKSS (United Kingdom Systems Society), UKAIS; BCS (British Computer Society), etc (four respondents);
- Experience (as seasoned educator and professional) and the use of students' own experiences (five respondents);
- Extracts from discussion lists on list servers (one participant).

In order to 'take stock' of the key messages from the analysis and data presentation of the web-based questionnaire, before moving on to the analysis and data presentation of results of the twelve semi structured interviews, a summary of the key issues developed from the web based questionnaire is presented below.

Summary of the Main Findings from the Web-Based Questionnaire

In the first part of this results chapter, results from the web-based questionnaire have been presented.

The web-based questionnaire respondents represent a heterogeneous group of individuals working at different levels in a variety of departments in both teaching-led and research-led universities.

Despite the heterogeneity, it is apparent that approximately one third of the respondents claimed research to be their primary academic function. A further 12% claimed their primary role was equally divided between research and teaching. This compares to 16% claiming to adopt an entirely teaching-orientated role. None of the UK IS/IM academics claimed to have a purely consultancy-focused role. Together, these results suggest that research was central to the work of a significant number of

IS/IM academics either alone or in combination with other activities. Although the temporal issue of the RAE2008 may be skewing these reported findings.

Interestingly, respondents questioned, spent approximately one third of their time undertaking teaching. This does suggest that, although seen as a primary role by only 16%, teaching was a major component of their academic lives and professional activities. Furthermore, one third of their time was spent undertaking research whilst 14% and 6% of their time is spent undertaking scholarship and consultancy respectively.

Overall respondents were satisfied with the definitions of teaching, research, scholarship and consultancy offered by this research. However, it is evident that the terminology surrounding the concepts of teaching, research, scholarship and to a lesser consultancy are messy and complex with individual perceptions being potentially influenced and shaped by one's university type and focus, i.e., teaching or research led.

The predominately taught areas of IS/IM in the UK, relate to the theoretical foundations and theoretical base of IS/IM. Technical teaching areas given the historic origins of IS/IM being an applied discipline, do not feature highly in IS/IM curricula.

Over four fifths of the respondents reported that they perceived themselves to be active researchers. Of the 74 UK IS/IM respondents who perceived themselves as being research active, only fourteen respondents (10%) had their research outputs presented for review in the last Research Assessment Exercise in 2001.

The significant areas of research activity are firmly grounded in and on the 'theoretical underpinnings of IS/IM', which includes areas such as; organisational and social effects of ICT', Strategic Information Systems Planning and knowledge.

A little over three quarters of respondents described themselves as individuals who actively engaged in the Scholarship of IS/IM (predominately meaning the content of

IS/IM). The main area of Scholarship engagement (such as keeping abreast of the literature) is firmly rooted in the theoretical areas of IS/IM. The central areas of scholarly engagement are not dissimilar to the central areas of research and teaching engagements.

Little scholarship activity is evident, regarding the Scholarship of Teaching, with only 9% of the areas of scholarship, being undertaken by the respondents being focused on the scholarship of teaching, rather than the scholarship for teaching counting for the other 82%. Yet, 69.2% perceived themselves to be an individual who actively engages in scholarship of learning and teaching of IS/IM. However, this discrepancy may be due to specific questions in the web-based questionnaire not being well formulated.

Just under half of the respondents had been or were actively engaged with consultancy activities. This degree of participation is far lower than that reported for the other components of the nexus, namely teaching, research and scholarship.

The main areas of consultancy activity fall into the *Technical / Applied* 'hands on' areas of IS/IM. The scale of consultancy, using income generation as a measure, indicates that just over a third of all consultancy activity undertaken by 38 respondents was in the most part was for income less than £15,000.

A strong statistical relationship was found between research and consulting themes, with no statistical relationship between what is taught and what is consulted in.

Based on the responses, from 92% of the sample, the top two academic outputs were; Conference Papers on IS/IM topics (88%) and Journal Papers / Book Chapters on IS/IM topics (74%) by a considerable margin to the third rated output, that being doctorate supervision (48%).

In conclusion, the web-based questionnaire suggests that IS/IM academics' teaching, research, scholarship and consultancy engagements did inform individual respondents teaching practice, to differing and varying degrees of application.

Results from Twelve Semi-Structured Interviews

Introduction

The results presented in this section are informed by a grounded theory analysis of the interview responses from six IS/IM academics from a Scottish research-led university³⁶ and six IS/IM academics from a Scottish teaching-led university; all interviewees taught at postgraduate level on IS/IM programs of study (MScs).

The format for each interview was based on an individual one to one semi-structured interview approach. The actual format, duration, and questions used in the interviews are discussed in detail in Chapter Three. While every care has been taken to try to ensure that the analysis has been systematically carried out, the possibility of alternative analyses on the same data other researchers may yield differing interpretations cannot be entirely ruled out.

Given the use of grounded theory, several themes emerged from the data and the subsequent coding, (see Chapter Three for a fuller discussion). In the sections that follow, results from the interviews are presented and discussed in the context of the themes outlined below:

- **Theme one:** perceptions surrounding teaching & learning (including what makes a good teacher?);
- **Theme two:** perceptions surrounding research;
- **Theme three:** perceptions surrounding scholarship;
- **Theme four:** perceptions surrounding consultancy;

³⁶ Research-Led Universities: The Carnegie Classification includes all colleges and universities in the United States. They define a Research-Led University, as an institution, which typically offers a wide range of baccalaureate programs, and they are committed to graduate education through to doctorate. They award 50 or more doctoral degrees per year, across at least 15 disciplines. - In the UK the Department for Education and Skills, define a Research-Led University, as a Research Extensive, using the same Carnegie Classification, but the number of doctorates awarded is 60 not 50, across at least 15 academic disciplines.

- **Theme five:** nexes between teaching, research, scholarship and consultancy;
- **Theme six:** promoters and inhibitors of a nexus;
- **Theme seven:** the disciplinary effect of IS/IM on the nexus;
- **Selective theme:** the perceived nexus as a process.

Theme One: Perceptions Surrounding Teaching and Learning

When asked about their perceptions of teaching, each of the twelve interviewees provided a clear view of what they perceived the nature and the essence of teaching to be and what it meant to them as individual IS/IM academics.

The notion that an academic member of staff in IS/IM should teach is almost universally held (by interviewees from both the teaching and research-led universities). The exception was one staff member from the teaching-led university, who objected strongly to the word and notion of being a ‘teacher’, preferring instead, the concept of a lecturer and lecturing, as they felt that lecturing, and not teaching, was their primary role. This view was founded by the individual’s interpretation of the role of a lecturer i.e., someone who tells students what they needed to know.

After analysing the responses, nine of the twelve interviewees provided a wider ‘open systems’ view, similar to the student centred learning view of teaching discussed in Chapter Two. Their view suggested that teaching was more than just didactic lecturing, and that teaching was concerned with supporting and facilitating students’ learning, such as the management and planning of student independent learning; the development of blackboard web sites to support student learning, and in developing interactive handouts, etc.

This view tended to be expressed by staff in the research-led university, along with the three staff who reported to be research active in the teaching-led university. Indeed, all nine participants considered that teaching was more than just the teacher being in control, but could not fully explain why they thought this, it ‘*just was*’, was a common

response. When probed on this point, the nine research active staff felt that teaching was concerned with helping students to find, understand, enact and interconnect knowledge themselves, with the teaching staff acting as guides and coaches to help students to challenge their existing knowledge base. This view of teaching can be illustrated further by the following quotes:

“Teaching is about giving structure to the student. Learning and research give the framework. Lecturing helps the students to find interconnections with theory and examples and it helps them to see things differently” (UniR4,P1,L7-9)³⁷.

“Teaching is about helping students to learn themselves, but guiding them through the area” (UniR6)³⁸.

What is of interest, in the first quote, is the suggestion that it is students who undertake learning, not the teacher, with the ‘teachers’ research or students research being used to find interconnections to help learning to occur. This does suggest that a nexus between teaching and research can be achieved, by students, and not solely between staff and student as is often portrayed in the literature. However, discussion on the nexus is revisited in a subsequent theme below.

The remaining three staff, all from the teaching-led university interviewed, who reported themselves as being non-research active, tended to have a more didactic approach to teaching. This approach was in association with a strong coaching, social and mentoring function towards students with specific regards to projects and dissertations. This can be illustrated by the following quotations:

“For one thing, you have to convey lots of information to students; this is the bread and butter of teaching. Basically, you divide your knowledge or wisdom, into chunks, then you interpret the syllabus of the module then you tell the students the information” (UniT1,P2,L8-11).

³⁷ Code Stands For = Uni (Meaning Interview at a Scottish Based University); T (Teaching Focused University); R (r Research Focused University); P (page number of interview transcript); L (Line Number(s) from interview transcript, if permission was given by interviewee to be audio taped.

³⁸ Code Stands For Uni (Meaning Interview at a Scottish Based University); T (Teaching Focused University); R (Research Focused University) however, interviewee refused to be audio taped, therefore evidence taken by researcher in field notes / memos constructed during the interview, with a full reflection session after the interview.

“Teaching is knowledge dissemination!” (UniT4).

From the above quotes, it is readily apparent that two different approaches to teaching emerged for the interviews. These differing views appeared to be at least in this group, partly influenced by whether the interviewee was research active. Indeed, interviewees from the research-led university, and those who claimed to be research active in the teaching-led university, tended to have a more student-centred view to teaching than those of non-research active staff from the teaching-led university who tended to have a more didactic view of teaching.

What Makes a Good Teacher?

The concept of what constitutes ‘a good teacher’ was also probed in order to identify staff perceptions on this issue and to determine whether areas related to scholarship, consultancy and research would feature in their responses. In response to the question, “What makes a good teacher?” a number of very similar responses were obtained. It was apparent from the interviewees that certain ingredients may contribute to being a good teacher. These included:

- that you have to have the personality and patience to teach and to be interested in your subject area;
- to undertake research and to a lesser extent consultancy, which was a perception expressed by a minority, which comprised a mixture of staff from each institution.

The essence of these responses is represented in the following quotes:

“Patience probably. When I was a student, you knew who the good academics were, as they were approachable and had time for you. [Anything else?] ³⁹ Yes, knowing your subject. I think you need to know your area. As a teacher, you need to continually question and challenge what you already

³⁹ Parenthesis added by author

know, which is similar to doing research. [How do you know your subject area?] Knowing what journals to read, keeping up to date with what is going on, but not just in academic journals but in the professional journals and newsletter as well. Also keeping your membership of the professional body is good as well, as many academics let this slip, but it is a good way of keeping up to date with what the profession is doing, etc” (UnitR2, P2-3, L49-57).

“Some of the best researchers make the worst teachers. [Why?] [Teaching] requires different skills than to do research. [Why?] Being a good teacher requires more social, motivational, coaching and mentoring skills than research skills” (UnitR1, P2, L30-33).

In response to the question “What makes a good teacher?” some respondents introduced elements such as research, scholarship and consultancy, is interesting, and suggests that a nexus between these various elements may be important when informing teaching.

“To be a better teacher you must have done or be doing research in Information Systems, as there is no point, if you are a student hearing about IS research from someone who reports what they have read, third or even second hand, then students are losing out. Students are best hearing about IS from the horses mouth so to speak” (UniT3, P2, L10-12).

“Consultancy experience gives you real life examples that the students love to hear about” (UniT4).

Interviewees, in response to “What makes a good teacher”, also raised the concept of learning. The evidence suggests, that just under half of the interviewees tended to see learning as more of an understanding of how to learn; and that students were being taught to learn how to operate as a professional in IS/IM rather than solely learning a body of knowledge which has been already pre-defined. Five staff observed the focus of IS/IM postgraduate learning, as being ‘students should be competent in a fundamental set of professional skills rather than concentrating on the knowledge base itself’.

Theme Two: Perceptions Surrounding Research

When interviewees were asked about their perceptions of research, they had a very clear view of what research was. The majority thought that research was about knowledge discovery and knowledge creation. This can be illustrated by the following:

[What is Research?⁴⁰]

“Can be many things and at different levels. [What things?] The activity of doing that leads to the creation and discovery of knowledge. However, it also includes reading, networking with academic and business professionals. It could also be about writing research proposals as well and doing field work” (UniR1, P3, L12-15).

What is your view of research?

[Slight pause]

“That is a good question.

It is about finding out weaknesses in one’s knowledge.

It is about making sense of what you have seen or experienced.

It starts with a PhD type research to learn the skills, but research is about putting these skills into action to develop some sort of conceptual research or something applied. Research can be so many things at the same time; it is difficult to say what it is. You need to be self-grounded with what has gone before, before you can do research. Research needs to take account of what is already there, but the real research is about creating something that is of industrial value” (UniT1, P2, L16-24).

Conversely, two of the interviewees, one from a teaching-led university and one from a research-led university, emphasised that reading of the literature was a component of research, “research does not just have to be about making new advances; it could be about reading the literature and thinking of things in a new way” (UniT5, P2, L2-3). This suggests that, for this individual, scholarship at least by the definition outlined in this theme, may play a role in the research process. Indeed this emphasis may reflect some of the difficulties associated for some, i.e., differentiating between research from

⁴⁰ Added by author based on the actual question(s) used for that interview

scholarship. For some interviewees the distinction between research and scholarship is far from clear. A finding that supports some of the results from the web-based questionnaire and it also echoes some of the earlier studies whose findings are discussed in Chapter Two.

Interestingly, all of the interviewees felt that research in and on IS/IM should be more applied and practical in nature. This perhaps is not surprising given the technical origins of IS/IM. The view of research being reported is not dissimilar to Gibbon's (1997) Mode Two Research, i.e., applied, undertaken in partnership with and for benefactors of research, i.e., business and commerce, rather than solely for students and the university sector. This is not to say that those interviewed did not see the place for Mode One research, i.e., more traditional type research, but, given the nature and essence of IS/IM, Mode Two research was perhaps seen as being more appropriate for the IS/IM profession.

All of the interviewees reported that such practical and applied research would be of greater relevance to students in their future careers as IS/IM practitioners, since such research would give them 'real world' insights. The vast majority of the interviewees (eleven of the twelve) expressed concern that current Mode One research tended to be more focused on rigour in research design rather than being relevant to the needs of students and to industry and other IT/IS/IM practitioners.

The strong opinion most interviewees expressed regarding the necessary emphasis on the "skills" element in IS/IM is particularly interesting, not least because this transcends the teaching-led and the research-led universities. It is perhaps not surprising to uncover such a view in the teaching-led university given the ex-polytechnic background of such universities in Scotland. Indeed, during their evolution, such polytechnics were charged with being closer to industry and commerce and the polytechnic structure of governance was modelled on the business corporation rather than the traditional university structure of senate.

It is harder perhaps to explain why those interviewees from the research-led universities also expressed similar views. It may reflect the recognised underlying need for IS/IM to retain its technical/skills origins in order for it to flourish and develop as a discipline irrespective of whatever is being undertaken in a research or a teaching-led university.

Theme Three: Perceptions Surrounding Scholarship

When all interviewees were asked to define scholarship, they found this difficult to do. This is in contrast to the relative ease they had in defining and discussing teaching and research. On further probing, eight of the twelve participants viewed scholarship in similar ways. The most common perception of scholarship was that scholarship was a “frame of mind” (UniT2,P3,L1) or an attitude that allowed someone to “be able to pull other areas together to make an appropriate solution and appreciate the wider diversity of what information systems can do” (UniT2,P3,L3-4).

A minority viewed scholarship as the end product of research and the accumulation of one’s experience and knowledge as illustrated by the following; “I see scholarship as the end result of research, like a published paper or a completed report or finishing a PhD” (UniR1,P3,L1-22).

The remaining four participants, tended to view scholarship as the foundation to the earlier stages of ‘doing’ research. This can be illustrated by the following; “scholarship is the foundation for research, as it allows one to be at the edge of knowledge in the discipline”, (UniT1,P2,L41-49). However, these four interviewees, like the eight whose responses are described above, also felt scholarship was connected to knowing ones subject area in sufficient depth, which was not deemed to be the same as research.

When all the interviewees were asked why they found defining scholarship to be more problematic and complex than defining other elements of the nexus, the most common response was what that they had not really thought about what constituted scholarship

until the question was asked. This suggests two things: firstly that IS/IM staff perceive scholarship to be an academic behaviour rather than being seen as an academic function; secondly, as a group, they may not take time to reflect on teaching practice or see the need to do this.

Theme Four: Perceptions Surrounding Consultancy

When all interviewees were asked to define what they thought consultancy was, there was a universal agreement and acknowledgement that it related to income generation and knowledge transfer. Consultancy is achieved when an academic provides advice, guidance and solutions to businesses on problems that they face, by drawing upon their expertise, which is usually derived from research, for personal, or usually either for monetary gain or for their department and or their University. The following quotes illustrate this almost universal view:

“I see consultancy more as solving a problem using research to do it, but packaging the process in less academic terms and concentrating more on the product rather than the process of doing it” (UniT5, P2, L24-26).

“Basically, it is a way to bring money in” (UniR2, P6, L23).

Regardless of university type, or how they viewed teaching, or research or scholarship, or the level of the individual’s research activity, their view of consultancy remained the same. It appeared to be a concept that was virtually unanimous meaning attached to it.

Where deviation in and between the interviewee responses arose, was concerned with why and how academics engage in and with consultancy activities. Views from three academics from the research-led university, tended to report that consultancy, and its allied activities, allowed for inroads to be developed in order to allow academics to engage in more mainstream academic research work, i.e. to write up and publish the consultancy experience as a case study. An often-quoted reason for academics

undertaking consultancy was to gain good and appropriate access for research opportunities. This access to research opportunities is evident in the following quote:

“From our perspective consultancy allows us to do more research. [How?] It is the means to attend conferences, to travel, to get access, etc” (UniR2, P6, L23-24).

“Tend to see consultancy as being more applied and action centred in approach, this is more interesting to me. Gaining access and making sense of what is happening in a business or sector is more interesting than solving the problem for someone (UniR5P2,L30-31).

Three interviewees from the teaching focused university viewed consultancy as a way of ‘keeping in touch’ with their professional roots and backgrounds and it allowed them to see what was ‘going on’, which is similar to the minority view of scholarship discussed earlier. Interestingly, this ‘keeping in touch’ was perceived to give them status by the HE community, in their minds and perhaps by the students they teach.

All of the interviewees felt that engaging in consultancy activities would enhance teaching (and, by implication, student learning), but that a different set of skills was needed by the academic to bring this knowledge and experience back to the classroom. This can be illustrated by the following quotes:

“Well, the last one we went for us, it was on does Scotland get value for money from the Scottish Library. The experiences and the outputs feed directly into some of our teaching on the MSc” (UniR2, P6, L24-26).

“Bringing consultancy back to lecturing takes a more reflective approach on what was done, how it was done, and why it was done. However, I do not think that every piece of consultancy is a form of research. If you build a new IT system, then that is not research, I am more interested in research that looks at why things were done, not what was done” (UniR5P2,L31-43).

How knowledge and experience relating to consultancy activity informed teaching practice, was not evident from the question alone; subsequent interview questions were needed and employed to address this area. This issue is discussed in detail later on in this Chapter.

Theme Five: Nexes between Teaching, Research, Scholarship and Consultancy

For the purposes of presenting the interview results for this theme, the following diagram will be introduced and used to explore the variety of nexes that conceptually and practically may be perceived to exist between teaching, research, scholarship and consultancy.

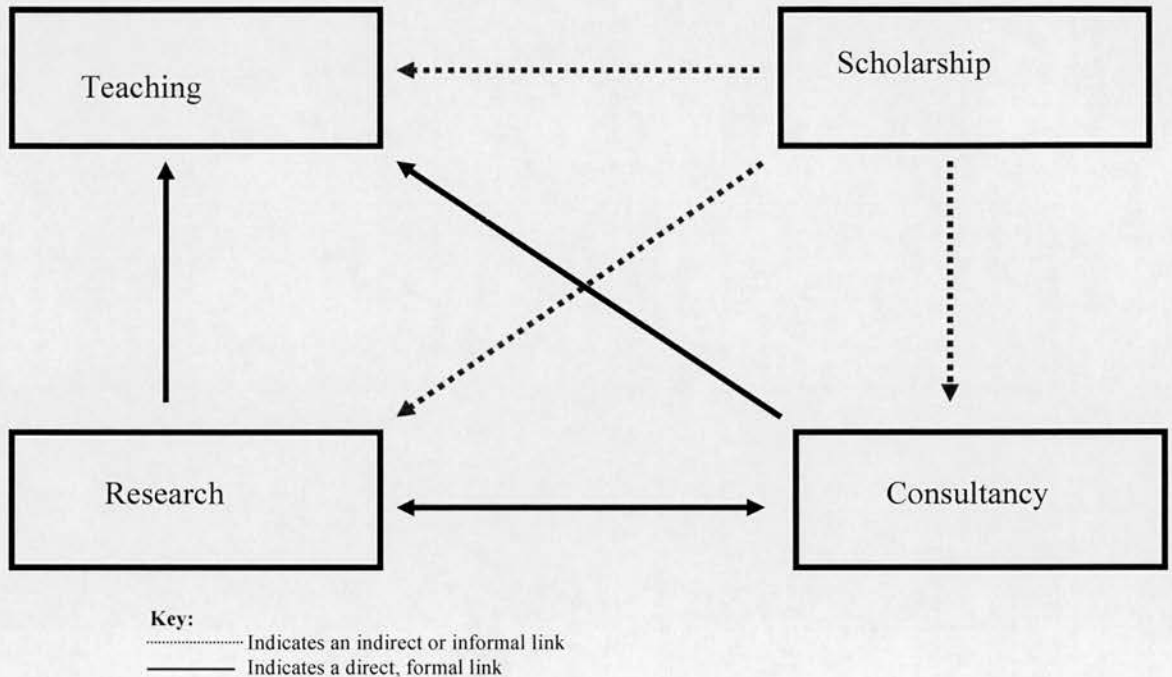


Figure 4.11 - Perceptions of Nexus Relationships'

In Chapter One, the concept of a nexus was introduced as a link or a connection or the centre of 'something'. However, based on the results obtained from the majority of the interviewees, a nexus should be seen as an integrated human activity system⁴¹ whose essential properties arise from the relationships between its parts, as a system which places things together, from the Greek *synhistanai*. When evaluating and discussing a nexus or nexes between teaching, research, scholarship and consultancy, the difference between a link/connection and a relationship, as a system becomes important and significant when unpacking the nexus.

⁴¹ A human activity system is entitled a 'holon' (Checkland and Scholes, 1990). Since this research is focusing on the interactions between academic activity (of staff) and how this informs student teaching sessions, the terminology of a human activity system is maintained for clarity.

Figure 4.11 suggests that a link and or a relationship can occur between each element either both ways or one-way either formally or indirectly. Each interviewee had no problem with identifying each element in Figure 4.11 as being appropriate for academics to discuss and engage in and with in Scottish higher education. However, as discussed above in this Chapter, what each element constituted was subject to a number of differing perceptions.

Based on findings presented here, the term ‘a nexus’ is best explained by a metaphor, which was provided by one of the interviewee’s:

“A link is like the connection between cousins, there is a family connection, via other relatives, which people know and accept in society, but a relationship is more of an interconnection between both parties, who mutually benefit from the relationship, rather than just having a connection [meaning a link] because of custom, practice or law. So a nexus relationship is like a husband and wife team coming together, correlating, in the form of a marriage in an emotional and physical way, rather than in just a formal, mechanistic, legal way accepted by society” (UniR4).

Having explored the difference between a ‘link’ and a ‘relationship’, it is now necessary to determine if a perceived nexus existed. The majority (nine out of the twelve) of the interviewees expressed the view that there was a relationship between teaching, research and consultancy, but that the relationship was informal, like two separate agents cohabiting and correlating informally for common good and benefit. This point is further unpacked and discussed in Chapter Five.

Returning to Figure 4.11, each of the relationships will now be presented and discussed in turn.

Teaching ← Research

During the interview analysis, it emerged that all interviewees reported that they perceived and the majority (nine out of the twelve) personally experienced, a relationship between teaching and research and that the relationship was one way, i.e., research informed teaching. However, the question of intensity, level and consistency emerged from the analysis, but is not pursued here.

Engaging in and with research appeared to inform teaching practices, but teaching engagements do not appear to inform research practices, based on this sample's view. The vast majority of the interviewees (ten of the twelve) reported that research did play a significant role in 'being a teacher' and that it was the relationship that gave them the identity of being an academic. This can be illustrated via the following interview dialogue:

“To be a good teacher, you probably do not have to do research. Nevertheless, I think it helps if you do both [meaning teaching and research].

[Question - Why?]

Purely from a pragmatic point of view, you will not be promoted if you only do teaching and no research.

[Question - Is this a good or a bad?]

It is a shame.

[Question – Why?]

Some people are good teachers and enjoy teaching, but they have to do research to get promotion, as being good and enjoying teaching is not enough to get promoted especially here [a research led university]”. UniR3P3L18-23.

And,

“We should undertake research, as we will be learning more than just reporting what others have said. Also, why should students come here given the rise of

the internet and the digital economy and listen to us, rather than going to those who have actually done the research work” (UniR5).

In addition, one interviewee from the teaching-led university, who was research active, provided a clear synthesis of the views expressed by the research active staff interviewed from the teaching university:

“This [meaning research] is central to what you teach. Essentially you can’t teach, if you have not been involved yourself. If you don’t you will end up just talking out of textbooks about what others have said, but you will never really understanding why they say what they say” (UnitT3, P2, L2-8).

One interviewee, from a research-led university stated “teaching and research are what real academics do” (UniR4,P4,L6). When probed regarding what is a ‘real academic’, the following response was given, “it is somebody from a ‘real university’, where ‘real’ academics undertook research” (UniR4,P4,L8-9). This suggests that a sense of inferiority exists in the ‘new universities’, ex-polytechnics, with regards to research experience, and that there seems to be a reluctance to acknowledge that post 1992 universities have their own distinctive strengths, which may or may not include academic research.

When interviewees were asked to explain what components of their academic activities might inform their teaching practice, a range of answers emerged, some of which are illustrated below and reflect the variety of responses that were obtained:

“A variety of things. My own experiences, my own qualifications.” (UniR1, P2, L16).

“It comes more from my research activities, as I know what topics are useful to be covered for the students. I add in key topic areas that they need to be familiar with as the profession would find it strange that they have not been covered if they are in that profession” (UniR1,P2, L10-22).

“People here seem more obsessed with using their own research work in class, rather than other people’s, but we are getting closer to the RAE submission deadline, and it may be wise to kill two birds with one stone,” (UniR5)

“Also, by knowing who is doing what, [meaning research] it allows me to invite key experts in the field to come in and to talk to the students, which they [the students] like (UniR1, P2, L20-22).

“..... if someone came in to my office and saw me reading a book, I would feel I would have to hide and do some course administration or some marking, as I would feel guilty about not doing proper work...” (UniT2,P2,L10).

When individual research orientated participants during the interviews were probed to give ‘concrete’ examples of what informed their teaching practice, the majority of responses given tended to be clustered around the following areas:

- Own/personal journal papers (nine interviewees);
- Own/personal conference papers (nine interviewees);
- Reading lists (informed by bibliographies contained in journal papers) (three interviewees);

However, the three areas above are not all directly related to research, but two of them could be classified as being connected with and to scholarship (i.e., to know one’s subject area). Of course, scholarship is not an imperative condition for research, but it is a necessary pre-requisite, i.e., one criteria of ‘good’ research, which is grounded in knowledge and an understanding of what the ‘literature’ states.

The nine research active interviewees gave personal examples of how and when their research activity directly informed their teaching practice, the most often cited areas were; dissertation supervision or teaching a particular lecture on a topic that they have researched for a number of years. Interviewees, if they had published an academic journal paper(s) or presented a conference paper, cited a journal paper and / or a conference paper that they developed, which they had used to teach a particular aspect of a module/class. However, when all the interviewees were probed further concerning whether all elements of a module were serviced by a nexus, it emerged that research outputs tended, in their view, serviced small sections of teaching practice. For example it might be used to inform a module/unit/lecture/class; a little activity in a workshop; or a small example in a laboratory/practical class, and recently, in the developing area of problem based learning.

Support for this point, can be illustrated by the following narrative:

[Question - Does the link inform everything you teach or smaller parts?]

“Small parts of modules that I teach. Only little chunks. I think there is an element that students want to see you doing some research. One of the things I have seen is for students to search on tutor names in research index web sites to see what they have published.

[Question – Why?]

For reassurance, so that the staff know what they are talking about” (UniR2,P4,L18-23).

Another interviewee stated, “... to date, my research has only really informed my teaching of one class last year” (UniR2,P4,L28).

When interviewees were asked how they knew a nexus had been achieved, they all reported that they were not sure if a nexus had been achieved, or indeed, whether the students had learnt anything from that event/session of teaching, which was informed or partly informed by either the process or product of research. One interviewee stated:

“Staff who do research and publish make the best lecturers, as they are up-to-date, passionate about their subject area and have fresh and exciting ideas which stimulates students in class. After all, who wants to be taught by someone who doesn’t actually do it and only tells you only what others do” (UniT4).

This interviewee seems to be reporting (which is widely reported in the literature) that it is not the precise substantive (content/subject-matter) that links teaching and research, but that researchers are passionate about what they research. It is this passion becomes infectious in their teaching as they use ‘street creditable examples’ of IS/IM research and practices to inform their teaching practice.

What did emerge from the results was that there might be a tendency for senior staff within the teaching-led university to concentrate institutional research support and

expectations on several key 'prized' staff to undertake highly rated research. By placing them in a 'research silo', which allows them to concentrate on *'doing'* research and having no formal connection with and to other university activities, such as teaching or administration, this does question the need for a nexus between teaching and research in a teaching-led university. Conversely, senior staff within the research-led university, tended to support a wider range of staff to engage in highly rateable research, but that they were also expected to 'use' these engagements to inform other academic activities such as teaching. Interesting, in the teaching-led university, research supervision was seen as a teaching function, and in the research-led university, research supervision was seen as research and an activity undertaken by research active staff.

When interviewees were asked whether they thought that the nexus between teaching and research was a good or a bad thing, the vast majority perceived the nexus between teaching and research to be good. The following quote captures and illustrates the often-cited reasons given by ten of the twelve interviewees:

“As this link helps the students to get jobs. The link gives them an edge at job interview, as it gives them real life experience not just theory, also they know company names, that they can use, etc. it makes them appear real and worth employing” (UniT6).

In conclusion, a relationship exists between teaching and research and academic staff engaging in research engagements are informing that teaching practice, when they teach or are allowed to teach. However, no relationship was evident between research and teaching, as research did not appear to be informed by staff engaging in teaching.

Teaching ←····· Scholarship

Based on the results from this research establishing and evaluating the nexus between teaching and scholarship, proved more difficult to evaluate. Given this, the concept of scholarship, was difficult to 'pin down' given the differing views and meanings attached to it.

When individual participants during the interviews were probed to give concrete examples of how their scholarly activities [meaning knowing ones subject area] informed their teaching practice, the majority of responses given tended to be clustered around the following areas:

- Students doing project work in the area (recycling the work in future classes) (two interviewees);
- Explanations of research work undertaken by others to students (process and product) (three interviewees);
- Other members in the department/division who had specific knowledge and expertise of particular topics relevant for and to the module being taught, being called upon to deliver that segment or a particular set of segments of a module (four interviewees).

What was evident in the results, was the fact that, at no time during the twelve interviews did any interviewee discuss or speculate as to the idea of teaching experience being used to inform their own personal scholarship of being a teacher, which supports the earlier points presented in the first half of this Chapter, with regards the Scholarship of Teaching. It appears from the interviewees that this issue does not feature when they think and talk about a nexus.

Teaching ← Consultancy

Consultancy, which has been under researched in earlier nexus studies, is perceived, based on the results here, based on the majority of the interviewees, to inform teaching practices.

However, given the small number in the interviewee sample, who reported to be actively engaged in consultancy activities, (five of the twelve, from both the teaching and research universities), attempting to draw conclusions regarding possible links and or relationships between teaching and consultancy, care has to be taken when interpreting the following. From the results, all interviews were able to give concrete,

insightful and definitive examples of when and how they perceived their consultancy activities informed their teaching practice. The most common ways in which consultancy activity and experience from undertaking consultancy informed teaching practice tended to take the form of personal (lived) case studies derived from personal experiences in consultancy. Nevertheless, these enriching experiences tended not to be formally written up, but were used as illustrations and anecdotes to explain and to a lesser extent entertain students in class, by giving a 'real world' perspective on the material being presented in class, to help students to make and find interconnections between theory and practice in IS/IM.

Yet, what became apparent from the results was that teaching was perceived to be enhanced and supported by consultancy activities. Nevertheless, due to a lack of examples, it can be concluded that no perceived relationship or link between teaching informing consultancy practice was professed to exist.

Research ↔ Consultancy

Interviewees who performed consultancy activities (five of the twelve), perceived being research active as the cornerstone for being able to undertake consultancy activities outside of the academy. When asked why this was the case, the most often cited reason was that it was the research that the companies wanted to hear and to know about and that publishing gave them an external 'persona' of being perceived as a subject expert by their peers.

Accepting the relationship between research and consultancy for the moment, engaging in research to undertake consultancy was the type of activity that perhaps lent itself to more mode two views of research than traditional mode one research, which has traditionally been the focus of research to date, which is discussed in Chapter Two and above. This is particularly illustrated by the following quote:

“Research needs to take account of what is already there, but that real research is about creating something that is of industrial value. Industrial does not

mean commercial, but the creation of an artefact that is needed or wanted by someone else". (UniT1,P2,L26-31).

Interestingly, like the results presented above in the web-based questionnaire data presentation section, interviewees who undertook consultancy activities suggested that undertaking and performing consultancy also allowed them to undertake academic research. This typically took the form of writing up the experiences in the form of a journal case study and or to have a relationship with a company, which could then be used to undertake academic research and, furthermore, the relationship appeared to be bidirectional, existing both ways with consultancy being enacted and enhanced research activities.

In summary there appeared a perception that a nexus between research and consultancy, both ways, was apparent and that this perceived nexus was a benefit to teaching and by extrapolation students learning and for the individual academic themselves, and as such it was seen as beneficial and harmonious relationship.

Research ◀..... Scholarship

Given the discussion in Theme Three, which suggested that the most common perception of scholarship was that scholarship was a 'frame of mind' or an attitude that allows someone to relate areas of IS/IM together, this suggests that a nexus between research and scholarship may be possible. A minority viewed scholarship as the end product of research as illustrated by the following; "I see scholarship as the end result of research, like a published paper or a completed report or finishing a PhD" (UniR1,P3,L1-2). A further four interviewees perceived scholarship as the foundation of research, suggesting a nexus does exist between scholarship and research.

Given the results, relating to research and scholarship the perceived link between these two elements is inconclusive and at best speculative. What can be speculated is that a nexus was perceived to exist between scholarship and research, as knowing the area, helped the individual to spring into 'doing' research. However, this relationship

was perceived not to be a strong one and it only went one way, i.e., scholarship to research, not research to scholarship, which many of the interviewees found conceptually hard to reconcile. This finding does confirm findings presented and discussed in the literature, especially the work of Brew (1999, 2001).

Consultancy ◀······· Scholarship

Of the relationships investigated, the consultancy/scholarship nexus, proved difficult to establish and to evaluate. No themes or trends have emerged from the data analysis. This is not surprising given that fact that the interviewees had difficulties when defining scholarship, as presented above.

Theme Six: Promoters and Inhibitors of a Nexus

During the interviews, all interviewees were asked if they thought a nexus existed. This was followed by a question, exploring issues, factors, in their view, influenced making the nexus stronger, and what factors and issues made the nexus weaker. This question was asked in an attempt to move interviewee responses from looking at the specific elements of the nexus, to looking at the nexus as a whole. Based on analysis of the interview transcripts, a number of specific areas emerged as to what factors appeared to inhibit and promote a nexus between one and more of the academic functions. These are presented below.

Inhibitors – We Can't Do it all Well

Six out of the nine interview participants (research-focused staff, from both the teaching and research-led universities) reported that, if they were engaged in both teaching *and* research to the same level, then the pressures of undertaking both activities in normal day-to-day practice would be difficult to achieve. Indeed attempting to integrate both teaching and research would just add more work for no real benefit to them. They suggested that the pressures of undertaking both activities well, precluded the use of one activity to *inform* the other, given the limited resource

of time they had. Indeed, it was mooted by two of the interviewees, that spending time on both activities [teaching and research] would, in fact, “dilute the other activity” (UniT1,P3,L5). Six of the interviewees also suggested that, in situations where either teaching or research activity predominated, the possibility that the nexus might play a role would discourage them from promoting or strengthening the relationship, as they would be ‘too busy’ doing each activity to be ‘*bothered*’ with seeing if a nexus emerged or not. Finally, supporting an earlier statement, when asked what activity they would be inclined to reduce or remove from their own activity, the answer was universally given as teaching, as research was seen as being more essential for them to do for their careers. None of the interviewees raised concerns regarding time/activity conflicts involving the other elements i.e., scholarship and consultancy.

Inhibitors – What is Perceived to be Important

All twelve interviewees indicated that their host university had a promotion strategy for staff, which encouraged staff to excel in two out of the following three categories; teaching, research (which included income generation in the teaching-focused university) and programme administration. Even so, staff felt that excellence in research was deemed *superior* to that of the other categories. Indeed, one lecturer from the research –led university reported, “the only way I will get an SL post is to do more research” (UniT6).

The interviewees did not mention the idea or concept of a nexus or indeed scholarship itself for that matter, as a component of their internal promotion strategies. The academic areas referred to, tended to hone in on specific activities and candidates were expected to achieve excellence (as defined by the university, in at least two areas) namely, research, teaching, knowledge transfer, management and outreach.

Attempting to excel in teaching on its own was not deemed important by the majority of the interviewees as the sole basis for an application for promotion. Therefore, promoting or encouraging any form of integrations or interconnections between the

major functions of IS/IM academics' work was deemed to have a low priority, as it did not feature in any institutional policies⁴². However, the lack of reference to the nexus here may be due to an omission either intentionally or unintentionally by each institution, concerning their internal promotional systems.

Inhibitors – Other Institutional Policies

All of the interviewees were asked about their own institutional policies with respect to learning and teaching; research; and consultancy/knowledge transfer (previously called income generation). It emerged that the majority of interviewees broadly acknowledged that their institution had all three policies or strategies.

Neither the teaching nor the research-focused university had a strategy or a policy document that integrated or attempted to integrate academic areas together; nor did they have a separate academic scholarship or scholarly development strategy. However, the interviewees reported that the concept or, at least the idea of scholarship and scholarly activity, was implied in the learning and teaching strategy and the research strategy, but in what form, nature and type of scholarship that was expected or encouraged, was never explained, discussed, debated or made fully explicit.

Taking the lack of policy direction and strategic intent within their respective university's, the majority (nine of the twelve) academic staff interviewed suggested that no information, material or guidance was offered by their institutional policy documents on how to perceive the nexus or indeed how to develop or enhance a nexus between teaching, research, scholarship and consultancy. Indeed, the nine interviewees (who had claimed to have read their institutional policies/strategies) reported that what was contained and stipulated in the policy documents might in fact be detrimental and potentially harmful to a nexus. The main areas that caused concern were modularisation, the obsession certain quality assurance systems have in forcing academic teaching staff to prove learning outcome had been met by students during their modules and the increase in academic administration.

⁴² Much of this material was analysed post interview, via policy document analysis, available around the time of the interviews.

Promoters of a Nexus between Teaching, Research, Scholarship and Consultancy

In contrast to the inhibiting factors noted above, nine of the twelve interviewees felt that their institution would be receptive to creating and managing a nexus between teaching, research, scholarship and consultancy. Just under half of the interviewees (five of the twelve) suggested a nexus between academic activities could be achieved via redesigning the curricula, changing assessment strategies and modifying learning and teaching strategies, a move similar to that advocated by Jenkins (1999) and Jenkins et al (2002); Jenkins and Zetter (2003); Jenkins (2005) and HEA (2005).

Indeed, five interviewees reported that there was an apparent academic emptiness with regards professional practice, as one interviewee stated there was a “movement away from what some people consider the enjoyable part of the job, i.e., teaching, to other areas, such as research” (UniR1,L3,P4-5). As such, trying to integrate research into teaching practice, or consultancy activities to inform teaching practice, would be counter-productive, as research was perceived to be more important and there was an implied assumption that teaching, especially developing teaching practice would suffer or be cut back to fulfil research obligations and / or desires. When this line of enquiry was pursued, just over half (seven of the twelve) of the interviewees’ thought that the shift towards publish or perish was wrong.

When asked what activities would promote a stronger nexus, there was an agreed consensus that the activities listed below would promote a nexus between academic activities. However, none of the suggested areas (given below) was policy driven or policy constructed as most, if not all, can be arguably considered to be focused at the individual practitioner level. The areas suggested promoting a nexus included:

- To create systems and procedures to encourage the interaction between staff and students, and between staff and staff, with regards knowledge creation and learning the essence of knowledge;

- To be empowered and trusted to be able to respond to the needs of the learners not the needs of the institution or government agencies, i.e., being allowed to teach and add material that is not prescribed in module descriptors and validation/approval documents.

Theme Seven: The Disciplinary influence on the Nexus

Based on the results from the twelve interviews, IS/IM was not seen so much as a discipline in its own right, but more as a trans-disciplinary area of engagement being a “collection of a mismatch of ideas, areas and concepts” (UniR5). IS/IM was considered to be more of a profession and an emerging discipline rather than a traditional academic discipline in keeping with the definitions provided by the work of Becher and Trowler, (2001). Indeed, a large segment (eight out of twelve) of the interview participants reported that IS/IM was still trying to establish itself as an orthodox academic area.

A third of the interviewees reported that IS/IM academic staff should report on and keep up-to-date with what other researchers from other universities and agencies have found regarding the changes and developments in IS/IM. This suggests that the discipline does influence how the nexus is perceived and enacted by members of the discipline.

This research introduces the concept of an emerging discipline and that the profession orientation does influence the nexus between teaching, research, scholarship and consultancy, but that this effect is more a question of intensity, coverage, rather than a blanket universal disciplinary view offered by Robertson and Bond (2001) in their nexus work.

Selective Theme: The Perceived Nexus as a Process

Unpacking the selective key theme, which emerged during this study, in its basic form, is an alternative way to conceptualise the event of a nexus.

The following quotes are illustrative of what emerged from this research from IS/IM practitioners:

“The best things to teach are the things you have actually done, as you can use the experience to help the students to understand. If you have only read about it, it is more difficult to give it the same passion and insight, than if you had actually researched it. If you are honest about your own research, it helps to animate the subject. Students don't just want to here about the theory they want to here about how it actually is in real life.” (UniR2,P3,L24-39).

[Question - If a link between teaching and research exists, is it more of an entity or a process?]

“I would say it is probably more of a process. Because, you really have to see the links yourself. If you are smart, you will make your research fit with your teaching. It is more were you put a process in place, which makes the material you are researching relevant to what you teach. That may be cheating in a way, but I do not think it is, given the demands on time. If it is relevant then it is relevant, it is all about turning things around and getting a fit were possible”. (UniR5,P6,L13-20).

[Question - Probe - how would it improve/inform teaching?]

“By doing more research and getting a stronger link, it would not necessary improve teaching, as simply standing in front of a class saying this is my latest paper, would not improve anything. It is more a question of fitting the experiences of doing the research and sharing what was found out. This would help the students find interconnections themselves. Also, in class it is the impromptu one off, unplanned sessions that students see to like and appear to benefit from [Why?] Because they are able to relate to my mistakes and reasons for doing things.” (UniT3P6L19-2).

Although, the quotes indicate that the perceived nexus is thought of as a process, rather than a substantive ‘thing’ (which is discussed the next Chapter) they do not explain how the outputs from academics engaging in other academic studies are operationalised in practice in a class. It is this separation, which may have caused

both qualitative and quantitative studies in this area to be at loggerheads as each have focused on the what not the how. This selective theme has attempted to propose that a move towards a process, emergent, complexity type view in the form a complex adaptive system is needed and that the actual process is more significant than the outcomes or the actual artefacts, i.e., it address both the what and the how. This idea is developed in Chapter Five and in Chapter Six.

Summary of Key Findings from the Interviews

The second part of this chapter has attempted to explore the nexus between teaching, research, scholarship and consultancy, by using semi structured interviews with IS/IM academic staff, who teach on post-graduate level, IS/IM programmes of study, from a teaching and a research-led university, in Scotland.

The majority of the interviewees tended to see the function of teaching as helping students to find and make interconnections between areas of the curricula themselves. This attitude was stronger in those staff reporting to be research active, regardless of institutional type. All interviewees reported that teaching practice was informed by research, but that to be a good teacher; one did not have to engage in research. All interviewees reported that IS/IM academics should teach, and this was perceived as being central to their function of being an academic.

The majority of the interviewees perceived research as being concerned with discovery and the creation of knowledge. All of the interviewees reported that IS/IM research activity should be focused and firmly rooted in Mode Two engagement, i.e., practical trans-disciplinary and practitioner focused and valued.

All of the interviewees found defining, discussion and relating to the concept of scholarship difficult. The most common view of scholarship was that it was a state of mind and an attitude towards being perceived by one's peers as being as an academic, via recognition and acknowledgment of ones work and service to the IS/IM community, i.e., of being regarded as a scholar, and an academic.

The concept of consultancy was almost universally acknowledged and accepted as being connected with income generation and knowledge transfer in IS/IM. Only a minority of interviewees reported that they engaged in this activity. What happens to the profit of performing the consultancy service is where the biggest deviation in the interviewees' responses occurred. Some used the profit element of consultancy for personal gain, or for their university's gain, where the money could be used for any purpose whatsoever. Those staff who reported themselves as being research active tended to use profits to support and fund their research activities.

It can be seen that a perceived relationship/nexus can exist in both directions between each element and other elements within the web of teaching, research, scholarship and consultancy. However, in reality, mutually inter-connectedness view did not appear to exist in all possible instances. Based on the evidence from this work, the majority of the interviewees all perceived a relationship to exist between teaching and research. However, the relationship was perceived to be in one direction only, i.e., research informing teaching practice and not the other way around. There was some confusion as to what constituted research examples, as some of the examples could be classified as examples of scholarship rather than research, if the web-based questionnaire definition is used. Results establishing and evaluating the nexus between teaching and scholarship, proved more difficult to evaluate perhaps reflecting the difficulties and the complexity of defining and, to a lesser extent, enacting scholarship.

All interviewees, regardless of whether they undertook consultancy themselves, believed that a nexus between teaching and consultancy existed. However, what became apparent was that teaching was not perceived to enhance or support consultancy activities.

Interestingly, the perceived nexus between research and consultancy appeared to exist both ways with research playing a role in consultancy activity and vice a versa.

Determining whether a nexus was perceived to exist between research and scholarship was difficult to state, given the fact that interviewees found it hard to separate these to elements. What can be suggested is that there is a link between scholarship to research, as a minority of interviewees reported that engaging in scholarship was a prerequisite of and for doing research, as knowing what was going on in the area was beneficial for doing good research. However, no link, relationship, or influence appeared to exist from research and scholarship, or from scholarship to research, or an influence of research on scholarship, or scholarship as an influence on research.

When looking at what factors were perceived to promote or hinder a nexus a number of variables were found to inhibit and promote a nexus (in its widest sense). The most significant inhibitor reported by interviewees was that they could not become an expert or devote the same amount of time to each of the four major functions of being an academic. Rather the interviewees felt that their respective institutions tended to promote and reward excellence in research, rather than any other of the main academic functions, i.e., teaching, consultancy or scholarship.

Concerning promoters of the perceived nexus, the majority of interviewees felt that their respective institutions would be open and willing to encourage staff and to develop systems, procedures and protocols to promote a nexus between teaching, research, scholarship and consultancy. The suggested areas were all connected with encouraging interactions between staff and students and students and students.

Finally, the term 'a nexus' for this study was perceived to be a relationship, not a link or a connection, between the elements of teaching, research, scholarship and consultancy. As such the perception of a nexus was conceptualised as an integrated 'whole' whose essential properties arise from the relationships between its parts from the Greek *synhistanai*, meaning 'to place together'.

Chapter Five Discussion

"The more original a discovery, the more obvious it seems afterwards".

Arthur Koestler (1905-1983)

Introduction

The work presented in this thesis has attempted to explore the nexus between teaching, research, scholarship and consultancy in the context of what informs academic teaching practices and how the nexus is operationalised for that practice. In the discussion that follows, specific areas of the findings presented in Chapter Four will be discussed in the context of the literature pertaining to the nexus.

Much of the literature to date has focused on the nexes that may exist between teaching and research and teaching and scholarship. The work presented in this thesis has attempted to further clarify these nexus debates, and, in addition, introduces new elements which may be of relevance to the nexus in the context of post-graduate teaching of IS/IM. Specifically, this work explores the contribution of the area of academic consultancy to the nexus debate and the impact of and emerging academic discipline has on the nexus. Finally, an alternative, theory that is grounded, is presented which offers an alternative way of conceptualising the nexus between teaching, research, scholarship and consultancy concerning academic activity informing teaching practices.

It is important to highlight at this stage, that a note of caution is needed, since the discussion presented here does assume that IS/IM academic staff are free agents to encourage a nexus between the elements of teaching, research, scholarship and consultancy to emerge. However, in everyday teaching practices, IS/IM academic staff are, on the whole, not 'free agents', rather they are constrained by particular quality assurance and enhancement regimes, modularisation and particular resource funding formulas, all of which are perceived by practitioners involved in this research as having a negative effect on their teaching practices and what actually informs their teaching practices.

A Nexus between Teaching and Research

As introduced and discussed in Chapter Two, it is evident that the vast majority of the literature to date has focused on a possible nexus between teaching and research. As was established in Chapter Two, most of the quantitative studies, which have investigated the nexus between teaching and research, have failed to demonstrate with evidence or have demonstrated a 'weak' link or relationship between teaching and research. Conversely, the majority of the qualitative studies on the nexus between teaching and research, such as those of Neumann, (1992; 1993); Rowland, (2000) Jenkins (2005), suggest that a nexus between teaching and research does exist or is perceived to exist by academics.

This research has attempted to readdress several of these issues as follows:

- by engaging with academics in one emerging discipline to ensure depth and an understanding of the customs and practices that exist in terms of teaching and research;
- by obtaining a well balanced mix of qualitative and quantitative data from academic teachers and research practitioners including those who claim to engage in both teaching and research;
- by analysing the data using a combination of qualitative and quantitative means;
- by using a range and different types of research output to review academic activity, rather than just academic journal papers.

In the present study, one of the first areas to be addressed was the issue of definition, and, specifically defining the core elements constituting the nexus between teaching and research, since it was considered to have been taken for granted that the definitions and the nature of the elements of teaching and research are well established. In fact, when questioning participants' views of teaching and research, both in the form of the web-based questionnaire and the interviews, an interesting pattern emerged. Whilst nearly all participants in the study held similar views with

regards the definition and nature of research, significant disparity existed when they were asked to define teaching, reinforcing the notion that teaching may be a complex area of study.

Perhaps not surprisingly, this study's results suggest that teaching practice is shaped and is influenced by what the teacher is teaching (mainly theoretical areas of IS/IM), to whom (a split between postgraduate and undergraduate students), and that the teaching practices are set within the IS/IM community of practice boundaries, agreed subject areas and teaching protocols. However, certain deviations from the basic essence of teaching emerged. Interestingly, in this regard is the finding that disparity in the definition of teaching existed depending on whether or not a practitioner declared himself or herself to be research active. An area most enlightened by the results obtained from the semi-structured interviews, it became apparent that those practitioners who were research active held a wider 'open systems' view, similar to the student centred learning view of teaching (Trigwell and Prosser, 1996) discussed in Chapter Two. These research orientated participants suggested that teaching was more than just didactic lecturing, and that teaching was concerned with supporting and facilitating students learning. This included activities such as the management and planning of student independent learning, the development of blackboard web sites to support student learning, and in developing interactive handouts, etc. These views were not expressed by those who declared themselves to be non-research active. It was of particular interest to note that the declaration of research activity had more influence on the definition and/or view of teaching than the institutional type *per se* i.e. research active individuals residing in the teaching-led university held similar views to colleagues who resided in the research-led university. This finding further highlights the importance of unpacking the definition of teaching in the context of the study's participants prior to exploring the nexus between teaching and research.

Most participants felt that the nexus between teaching and research legitimised their roles as academics within the academy, supporting the claims made by Ramsden and Moses (1992). This perception was held irrespective of what they considered themselves to be i.e. primarily as researchers or primarily as teachers. Furthermore,

where academics considered themselves to have mixed roles, this perception was retained irrespective of the amount of time spent on either function.

Based on those surveyed, research was considered fundamental to one's role as an academic and to be an academic, even if the individual did not consider himself or herself to be particularly research active. It was certainly evident from the study's findings that research was important at several levels. In particular, it was generally accepted that universities tended to operate a promotion strategy, which encouraged staff to excel in two out of three categories, namely teaching, research (which includes income generation) and programme administration but that staff perceived excellence in research to be considered to be "*valued much more highly*" than that of the other categories.

Indeed, the view that research was valued much more highly than other academic functions was perceived to come from and exist at all levels within the institutional hierarchy. None of the participants held the view that a nexus between teaching and research was promoted or encouraged, rather they felt that their institutions concentrated on the elements as two separate activities of academic engagement. The research active staff seemed to have both research and teaching on their agendas based on the time allocated to each, yet the non-researchers, or the predominately-teaching only staff, only had teaching on their agenda. Furthermore, although teaching was undertaken by these teaching only staff, little emphasis was placed on reflection and enhancing teaching practice, which is one view of scholarship put forward in Chapter Two. It is therefore perhaps not surprising that, regardless of the institutional context, these two groups (i.e. research/teaching versus teaching only) seemed to be concentrating on differing agendas.

The results from the present work have also highlighted the fact that although the participants unanimously agreed that a nexus was perceived to exist, how they viewed the nexus varied depending on their individual perceptions of teaching and their own belief systems. In practice, teaching was informed by research when it was deemed appropriate and relevant by the practitioner. Indeed, the results presented in Chapter

Four would suggest that a nexus between teaching and research was perceived to exist, but that this might only occur for small elements of a module/unit in a programme of study. Such occurrences were spontaneous rather than planned for and the opportunities for such engagements tended to be driven by the staff-student interaction as much as by the relevance of the research experience and/or content.

From the data in this research, experience of undertaking research was likely to inform teaching. This view suggests that staff do not necessarily follow a predefined formula to create a nexus between teaching and research, but that the nexus between teaching and research may be more informal⁴³. As it just emerges when the occasion and the interaction between staff and students allows it to happen, i.e., that the students are receptive and that they can make interconnections with their own knowledge and or experiences of a particular topic and that the staff members experience and knowledge support the particular teaching event or occasion in situ.

Appreciation that the perceived existence of a nexus between teaching and research may be informal, suggests why it is difficult to measure 'the nexus'. That it is dependent on individual perceptions which may explain why the predominantly quantitative orientated studies such as those undertaken by Hattie and Marsh (2004; 1996; Marsh and Hattie, 2002) cannot provide absolute 'proof' one-way or the other and to the existence of a nexus or not. Indeed these studies may have measured some occurrences of the informality of the nexus emerging, some of the time not all of the time.

In this regard, certain reports are of particular interest. Jenkins (2000; 2005) and Jenkins et al (2002; 2003) have been longstanding campaigners for the existence of a formal nexus between teaching and research. This formality, to them, suggests that the nexus between teaching and research can be planned for and manufactured.

⁴³ Informal is defined here, as just emerging when the interaction between staff and students, the material and the experiences of all collide, rather than the staff member planning a nexus to happening at a predefined time, in a lesson plan, using a particular journal paper or specific research experience.

The use of journal papers and book chapters as the sole measures or markers of research activity, however, may not be appropriate when exploring the nexus between teaching and research. Indeed, in using both qualitative and quantitative techniques in the work presented in this thesis, it has been evident that journal outputs only represent one of the many forms of research activity. It would appear that these less conventional forms of research activity might be as important in informing teaching practice as the more orthodox research outputs. Examples of these less orthodox forms of research activity might include reviewing funding proposals, giving keynote addresses at conferences and teaching company schemes (now referred to as knowledge transfer partnerships). These less conventional forms of research activity will clearly not be fully encompassed by the formal measures of research activity such as submissions for the Research Assessment Exercise (RAE), as the RAE classify many of these as 'esteem indicators' for RAE2008, but they did not play such a significant prominence in previous research assessment exercises. Furthermore, this 'hidden' research activity, in turn, based on the evidence presented in Chapter Four, is used to inform teaching practice in the day-to-day teaching of IS/IM students.

Indeed, acknowledgement of the existence of this 'hidden' research activity may also go some way to explaining why more participants claimed to be research active than might have been anticipated had the RAE been used as the sole marker of research activity. Indeed, it is well established that the RAE itself only measures a particular type of research (Drennan and Beck, 2001), predominantly Mode One, rather than encompassing all forms of research output and activity. Based on RAE criteria alone, the findings from this study would significantly underestimate the amount of research activity being undertaken by UK IS/IM academics. It is also important to note at this stage in the discussion that the nature of the area of study may also be relevant here. IS/IM, as highlighted in Chapter One and Chapter Four, is not typical of a traditional academic discipline. As such, therefore, it is perhaps not surprising that conventional measures of research output such as the RAE may not be truly reflective even when journal papers are used as markers of activity.

From the results presented in Chapter Four it might then be anticipated that, in order to understand fully a nexus, then measures are needed to identify, measure and evaluate the actual process and interactions of doing the research and the experiences obtained by academics rather than just measuring the actual output, to inform teaching practices. Hence, the informality of the nexus introduced above.

At the obvious risk of speculating on what the data is saying, it does appear to the researcher, that whatever forms research activity take, a degree of sophistication and output may be needed before academics can share their knowledge and experiences gained from engaging in the act of research. In other words, it could be suggested that it is only when this experience is gained that the process can be shared as part of a wider student learning experience with both students and staff engaging in research in achieving a nexus between teaching and research.

Teaching and Scholarship in the Nexus Debate

The results presented in Chapter Four are somewhat conflicting concerning scholarship and there appeared to be two main schools of thought in operation. One group appeared to express the view that scholarship was essentially the same as was a major component of 'doing' research. This would support the view that scholarship is, indeed, an early part of the process of research, but that the separation between these two elements is marginal, which is contrary to the research of others such as Boyer (1990) discussed in Chapter Two.

In contrast, a second group expressed the view that scholarship was a product of being an academic, part of this including research, and that scholarship reflected a culmination of all academic activities. For this group, scholarship *seemed* to play a significant part in the research process, and it was the unique activity of being an academic, rather than directly informing teaching, research or other academic activities. This school of thought suggested that research should be expanded to include being a scholar as the end point of the research process, rather than being at the start of the research process. To some extent, this finding contradicts the work of

Elton (1992) and Brew (2001), but it does support the view offered by Pulsen (2001), i.e., the Scholarship of Service and Citizenship, discussed in Chapter Two. It is, however, important to note that, although the work explored the inter-relations between scholarship, research, teaching and consultancy, it did not seek to explore specifically what it means to be a scholar and how this related to being an academic. It may then represent another dimension in the nexus debate, which has not been fully explored in this work.

Interestingly, irrespective of which group a surveyed participant fell into, both groups felt that there was a nexus between teaching and scholarship although the precise nature of this remains messy. Indeed, how scholarship manifests itself into learning and teaching is still unclear from the results presented here since evidence supporting a direct link between scholarship and learning such as that offered by Elton and Brew failed to emerge from the data.

However, seeing Scholarship as the ‘end point’ or ‘product’ or ‘the glue’ of being an academic does signal and support what other contemporary authors on scholarship may be hinting at with regards to the Scholarship of Teaching. Authors such as Andresen (2000) and Kreber (2005; 2006) suggest that one way of understanding scholarship is to conceptualise it as an activity of professional academic practice, not solely about teaching or research. Scholarship may be the manifestation of academics thinking and reflecting on their professional practice, rather than being something that is part of teaching or research.

It is interesting, however, that the participants in this study do not value highly IS/IM academics solely excelling in the practice of teaching i.e. knowing how to teach, but they do value greatly knowing the content of what to teach. Indeed, being or trying to be a ‘good’ or ‘better’ teacher was not deemed as important as being a scholar. Even if an IS/IM academic reported the need or the desire to work towards achieving a nexus between teaching and scholarship, old habits, and current pressures on research and academic administration tended to override good intentions.

However, this study's results also introduce another dimension which further contradicts the work of Boyer, Brew, and partly Kreber, namely that scholarship was, and is, a state of mind, rather than actions of professional practice, i.e., undertaking teaching reflection, etc, and, indeed, scholarship represented the end point of being engaged in research and being acknowledged as being a scholar or an eminent researcher in the area of IS/IM. One interviewee provided a good summary of scholarship that captured the views of this community of practice concept (Lave and Wenger, 1991) of Scholarship:

“I see [academic scholarship] as acceptance as an expert in the area by my peers and industry. [This is achieved] from doing a good number of papers and people acknowledging you as being an expert in that area. So I suppose I see it more as gaining expertise in an area, than anything else.” (UniR1,L3,P6-9).

The Contribution of Consultancy to the Nexus Debate

The results presented in Chapter Four support the idea that as far as this sample of IS/IM academics was concerned that the activity of consultancy was perceived to exist and indeed did inform teaching and research practice. The results suggest that, the relationship is more informal and an almost opportunistic engagement in class rather than following any deliberate plan, intention or policy. In contrast, however, the relationship between consultancy and research, is more formal and deliberate, with the areas being researched feeding directly into the primary areas of consultancy activity. The areas of research interest and the areas in which the academics consult appear to be very similar.

Although all of the participants recognised a nexus between consultancy and teaching and consultancy and research, the appreciation of these associations varied depending on the type of university the participant resided in and their primary activities. In general, staff within the research-led university sampled appeared to appreciate a stronger association between research and consultancy, compared to the relationship between teaching and consultancy. However, staff from a teaching-focused university tended to see a greater association between teaching and consultancy, compared to

that between research and consultancy. This perhaps reflects the broader primary emphasis on teaching in these institutions. It might be anticipated that this situation is particularly likely to be found in a discipline like IS/IM where its origins are traditionally and firmly rooted in the applied, vocational and industry based sectors.

Influence of the Discipline on the Nexus between Teaching, Research, Scholarship and Consultancy

As discussed earlier in Chapter Two, the majority of teaching and research is performed by academics grounded in their cognate discipline area, therefore, the role and significance of the actual academic discipline becomes a critical factor when exploring the nexus. What is apparent was that IS/IM was perceived to be an academic discipline, but still developing, by IS/IM staff surveyed. The results tend to suggest that IS/M is perhaps, more than most subjects, was perceived to suffer from commercial and professional practice being seen as ahead of academic theory. This research suggests that when looking at developing or emerging disciplines such as IS/IM, the issue of a task orientation (of doing the job, rather than reflecting on practice) also influences the nexus, which has not been explored to date and is worthy of future research.

The view of what constitutes disciplinary knowledge does imply that academics in this study will use what academic tools and academic artefacts that work for them to help students find interconnections and create knowledge themselves, all within the ethos of working closely with industry and commerce, which again suggests a particular view of knowledge exists by them in IS/IM. Indeed this suggests that there is no clear difference between knowledge and epistemology and that one cannot separate discipline thinking and approaches for department's way of teaching, especially when colleagues perceive themselves as being research active. Being an academic and being an IS/IM academic are so intertwined that it does seem to affect the nexus and how a nexus is conceptualised and enacted. Therefore, it can be concluded from the findings that the discipline did seem to impact on the nexus, and it was perceived to

create a ‘disciplinary version of the nexus’ and there may exist some tensions and concerns with the practice of a discipline and a discipline of practice.

A Process View of the Nexus: a New Way of Thinking

This research has indicated how teaching practice is perceived to be informed via academics engaging in other academic activities, it also introduces in addition to the ‘what’ informs academic practice, the issue of ‘how’ the nexus between the various academic activities, informs teaching practice in the actual classroom. As seen in Chapter Four, participants interviewed, perceived the nexus between teaching, research, scholarship and consultancy, not as substantive entity, but as a process.

The often-portrayed classical substantive (Rescher, 1995, 2001) view of the nexus dominates in the literature, is demonstrated in Chapter Two, (mainly by the quantitative studies) and can be summarised and explained by focusing on the actual product(s) of the academic activity; the desire to establish and measure the stability of these products; and finally that each product can be used in a predictive way, following some sort of predetermined formula (Jenkins et al, 2003; and Jenkins 2005). This substantive view suggests when academics make gestures towards the nexus, using a journal paper, to teach a particular subject, and then they assume that they can control and predict the impact and the effect of using that particular journal paper on the nexus and on students learning and their teaching.

Based on the responses mainly from the twelve staff interviewed, presented in Chapter Four, the nexus was perceived to be a process. A process view (Rescher, 1995, 2001) suggests that an event, which maybe called a nexus in class, is concerned with the experiences gained by staff and or students engaging in one or more of the academic activities (research, scholarship and consultancy) collectively. Indeed, each teaching episode in class can not be absolutely planned for as it will be in a continual state of flux and will always have an element of unpredictability to it. This point is further discussed in Chapter Six.

This research suggests that a nexus should be conceptualised as a process, and this can be best explained via an analogy, namely, the academics ability to operate in unstructured play, (i.e., not following a pre-set game plan). Taking opportunities as and when they arise and being able to see them happen and to know almost instinctively what to do and do it, in class, given the topic area and the experiences and knowledge of the staff and the students involved, rather than following a prepared plan. Thus, staff need to engage in the elements of teaching, scholarship, research and consultancy, but the specific mix and degree of each is determined by them, what they teach, to who and why, but the actual nexus, is their ability to teach and operate in unstructured teaching scenarios. It is the actual interactions, connectivity and networks between teaching, research, and consultancy, which are at the core and essence of a nexus not the end result of a nexus.

Chapter Six

Implications and recommendations, personal reflections on the research design and a suggested way of thinking about the concept of a nexus

Introduction

Given the work presented in this thesis, a number of issues are worthy of further comment and discussion and it is these issues that form the basis of this chapter. Firstly, this research has the potential to inform future IS/IM academic teaching practice(s) and it offers a number of implications and recommendations for the individual within the IS/IM community of practice. These implications and recommendations are considered in the first part of this chapter. The section which follows, highlights several possible areas of further research that may be fruitful when further exploring the nexus between teaching, research, scholarship and consultancy. As part of these potential research avenues, a personal reflection on the methodology adopted by this work is also offered to assist the work of future researchers. Finally, some concluding remarks are offered as ‘food for thought’, in order to suggest a possible, yet fruitful, way to re-conceptualise the concept of a nexus. The last section of this chapter presents a final overview of the key contributions this research makes to the existing body of knowledge on the nexus debate.

Implications for the Day-to-Day Professional Practice of UK IS/IM Academics

The work presented in this thesis has suggested that a nexus was perceived to exist between certain academic activities and that this perceived nexus did inform teaching practice. Teaching was believed to be informed by the process and outputs of academics engaging in research and consultancy, but research and consultancy practices were not informed by the act of teaching. In addition, a nexus between research and consultancy was perceived to exist and this relationship was bi-directional in that research was perceived to inform consultancy and consultancy was perceived to inform research. Given these and other findings presented in Chapter Four, together with elements discussed in Chapter Five, these findings may have

implications for the day-to-day professional practice of some UK IS/IM academics, the academy and the emerging discipline of IS/IM.

One implication from these findings relates to the classroom teaching of IS/IM in the UK. Many believed and, indeed, reported that a nexus, especially between teaching and research, teaching and consultancy, and research and consultancy was a positive relationship and a 'good thing' to have in the University and for academics to engage with and in and for students to learn in the domain of IS/IM. Indeed, many suggested that it was the nexus, and in particular, the nexus between teaching and research, that made an academic an academic and the academy the academy. Developing this point further, many of those surveyed felt that nexes between teaching and consultancy, and consultancy and research, are what make an IS/IM academic a 'good' IS/IM academic.

The natural extrapolation of this would be that for those wishing to enhance and/or change their individual teaching practice(s), to encourage the emergence of a nexus or a set of nexes, then it would be necessary to raise their awareness and knowledge of the components of a nexus. As part of this process, particular attention would need to be paid to how the academic activities of research and consultancy inform teaching practice.

IS/IM academics should not try to control and 'over plan' for a nexus to emerge, as discussed in Chapter Five, but instead they should encourage themselves to engage with students in dialogue regarding the topic area and to use everybody's experiences of IS/IM to support learning in themselves and within the class group. This recommendation is similar to the spirit of the influential⁴⁴ Royal Society of Arts, Opening Minds Project (1999, 2003), which suggests that learning should be thought of as a family of learning competences, all intertwined. However, the actual nature and precision of the family of practice that constitutes learning still needs to be developed. Indeed, the family of objects notion does suggest that a new way of

⁴⁴ As it offers a contemporary and radically different view of learning and teaching to the orthodox view portrayed in the learning and teaching literature.

conceptualising the nexus may be needed, which is further explored later on in this chapter and, indeed, may in turn call for different forms of teaching in the classroom.

It is further advised, when seeking to create a nexus in class IS/IM academics should not focus solely on the actual products of academic processes, i.e., a particular journal paper, and/or a consultancy experience. Rather, they should find ways to help students to make interconnections themselves, by giving students an insiders view of the process of research and or consultancy in the domain of IS/IM.

Irrespective of whether an academic wishes to take steps to encourage a nexus to occur, the notion of being perceived by one's peers, as being a 'good' or 'better' teacher is dependant on whether or not one engages in research and/or consultancy. Given that IS/IM is an emerging academic discipline then these perceived value adding activities continue to suggest that both practice (consultancy work), theoretical (research) work and practical skills are valued by the IS/IM community. It is these skills together, rather teaching or research alone, which are needed in order to be seen as a scholar of IS/IM. This particular set of skills is valued in IS/IM perhaps more than in other disciplines.

Given the 'mixed' academic function (teaching, research and consultancy), it does suggest that IS/IM academic teachers may need to develop additional and alternative methods of teaching rather than continuing the traditional lecture, seminar and computer laboratory formula of teaching prevalent in IS/IM. This newer approach, for an emerging discipline such as IS/IM, may help to bring the elements of teaching, research and consultancy in meaningful ways to help students to learn. Some possible methods of enhancing teaching practice, if one is primarily research active and/or consultancy active, might be more active and intensive forms of learning and teaching such as scenario and role-playing, business simulations, and strategic conversations and SISP boardroom events. Indeed, given the historic and applied roots of IS/IM, the nexes between teaching, research and consultancy may become a distinctive feature of what constitutes an emerging or even an applied or a different discipline such as IS/IM, as outlined in Chapter One.

Irrespective of whether an individual wishes or perceives a nexus to exist and the fact that so many IS/IM academics believe it exists and that it is a positive and harmonious activity to have, will have implications concerning who is 'given access' to the UK IS/IM community of practice, and perhaps the academy in general. For many years, as discussed in Chapter Two, the 'University' has 'claimed ownership of the teaching/research nexus' as its domain of interest. However, given the role and value consultancy appears to have in the nexus debate, at least in IS/IM, as demonstrated by this research, this may actually change the nature of what constitutes the role and activities of the 'University' and the activities of academics. This may influence what an 'academic' is and does. Currently there exist two main camps, teaching led and research led universities. Perhaps a new type of university is needed or will emerge to capitalise on the nexus between teaching, research and consultancy, namely a nexus university, or perhaps corporate university, but this would require different funding regimes and policy changes to encourage this type of university to exist and flourish. However, the results of this study, do question the issue that the nexus between teaching and research and the nexus between teaching, research and consultancy, could exist out with the academy as well as within the academy, since it is a process, rather than discrete element.

Having provided some conclusions, recommendations and implications to professional IS/IM teaching practice, it is now necessary to discuss possible future research areas.

Recommendations for Future Research Areas Regarding the Nexus between Teaching, Research, Scholarship, and Consultancy in IS/IM

Although this research does seem to have contributed to a fuller understanding of the nexus between teaching, research, scholarship and consultancy, it has not been able to address all the issues that may reside in the nexus debate. It is therefore important to suggest additional areas worthy of further investigation. These areas are interlinked and focus initially on the internal workings of the university and academics within it, before looking beyond the University.

One interesting area for future investigation would be to see if existing performance/quality management systems and regimes currently in operation within the UK higher education system encourage and promote the nexes between teaching, research and consultancy. To date, several studies have looked at the RAE and TQA scores, but none have looked specifically at QAAHE subject and institutional enhancement review requirements; subject benchmarking statements and the QAAHE codes of practice, in particular the codes that deal with research students and student assessment.

Another area of interest for further research might be to explore what reward systems are in place (or planned for) in higher education that encourage academics to find ways to link and co-relate academic activities together rather than concentrating on specific academic activities? Indeed, from experience, there exist institutional reward mechanisms for research, consultancy and teaching, but not scholarship or the integration of teaching, research and consultancy. Following on from this point, an additional area worthy of study would be to investigate what organisational and staff development support mechanisms and systems are needed to capitalise on the perceived benefits of a nexus and what sort of academic culture would be needed to promote capitalising on the perceived benefits of a nexus.

Moving beyond the University, one important area for further research would be to investigate what employers and other benefactors/stakeholders' of the university

sector think of what is being taught and how it is taught, to see if the nexus or nexes do add value to them as stakeholders. In particular, does the integration between teaching, research, scholarship and consultancy prepare the students for the world of work in contemporary IS/IM?

Reflections on Research Design Employed

Given the resources available, namely one self-funded researcher, working full time in a Scottish university, the research design employed for this study has allowed the aim of the research to be fulfilled, as demonstrated in Chapters Four and Five. However, critical reflection highlights a number of areas worthy of further mention and consideration.

Although those surveyed provided their views and perceptions, the issue of representation remains. Members of the UKAIS were invited to answer the web-based questionnaire and this data was combined with twelve interviews with non-UKAIS members. It is important however to note that, although the UKAIS is the largest UK IS/IM academic body, it does not encompass all IS/IM academics, since membership relies on subscription (as discussed in Chapter Four). Therefore, finding additional ways of penetrating members of the UK IS/IM community (e.g. via discussion bulletin boards, the BCS newsletter, etc) would be beneficial for future research designs to employ. Clearly, with the sample adopted for this study, there are a number of staff views which may not be being heard, explored, or represented fully.

Furthermore, regarding the interviewed population, all twelve interviews undertaken for this study resided in two different Scottish universities. Thus, the more qualitative data in this study is derived from only one small subset of a much larger IS/IM community. It would be advantageous to undertake further interviews in England, Northern Ireland and Wales, thus addressing any cultural and national higher education funding council issues, which may influence the nexus between teaching, research, scholarship and consultancy. This point could also apply to exploring the nexus or perceptions of a nexus with an international audience of IS/IM academics, to

see if national culture(s) and differing higher education configurations and missions may impact on the nexus between teaching, research, scholarship and consultancy.

One group of stakeholders not considered by this research or indeed, by research generally undertaken on this theme, are students. Students may add an alternative dimension to the debate on the nexus between teaching, research, scholarship and consultancy. It could be potentially advantageous to explore their perceptions and experience as to what they think a nexus between teaching, research, scholarship, and consultancy is, and what it means for them as “learners.” Indeed, on reflection, two additional methods of ‘*capturing*’ and ‘*measuring*’ a perceived nexus between teaching, research, scholarship and consultancy would have been useful. The first would be classroom observation (accepting the methodological problems often associated with this approach) to determine how the artefacts from various academic activities are used and brought into the class discussion to facilitate learning and classroom observation could be supported by a form of student narrative approach/mapping of their experiences of a nexus with those observed and reported by the staff. This could have potential when exploring the ‘lived experiences’ of learning about the nexus.

This study has concentrated on IS/IM academic staff perceptions, and, thus, it has only unpacked the issues in one emerging discipline. If funding allowed, then a team of researchers could also sample other disciplines (for example sampling some perceived to be emerging and others deemed to be well established) in order to explore what the experience would be like for academic staff and students in different disciplines. This would be potentially useful, as it would explore the issue of ‘disciplinary scholarship’ (introduced by this research), thus also allowing the issue of scholarship to be further unpacked.

In this thesis, grounded theory has been used to investigate the perceptions UK IS/IM staff surveyed have on nexus between teaching, research, scholarship and consultancy. This proved to be a useful method of investigation given that the nexus debate has many differing and often conflicting views and a limited empirical evidence base. It

enabled me to fuse the data collection and allowed patterns to emerge and be compared and contrasted. However, the constant comparing and theme generation and subsequent collapsing and exploding were highly interpretive. It is of note that it was difficult to be completely non-judgmental in data interpretation, since my own baggage and ideological value systems are bound to have 'coloured' the process, albeit inadvertently. However, given the constant comparing and contrasting, it is hoped that this problem was kept to a minimum.

Finally, this study only looked at people's perceptions as to what informs face-to-face teaching in a classroom setting. There exist a number of other teaching and learning approaches, such e-learning, and open and distance learning, and the whole aread of assessment which could be investigated to further add dimensions to the nexus debate.

Having presented several critical reflections on the research design employed, in the discussion that follows, further commentary as to a possible approach to re-conceptualise the concept of a nexus, and, in particular, the nexes between teaching, research, scholarship and consultancy is offered below, informed by a conceptual reflection on this research journey.

Conceptual Implications when Exploring the Nexus between Academic Activities

Barnett (2005) hints at the need to re-conceptualise the concept of the nexus, when discussing the nexus between teaching and research. In his view, the problem is not the sheer quantity of the discussion and the material on the teaching and research interrelationships, but the equivocal signals contained within the volume of material and the gradual loss of will and structures to deal with a nexus or nexes.

Taking one of the themes presented in Chapter Four and discussed in Chapter Five a speculative stage further, i.e., that a nexus was perceived to be a process rather than an substantive entity, then the following is offered as a potential way to re-conceptualise the concept of a nexus, by drawing upon the theory of Complex Adaptive Systems (Stacey, 2001; 2005). At its heart, this theory is a process thinking perspective, that

seeks to explain social situations via local interactions - in this case between academic staff, staff and students and students and students, rather than focusing solely on the actual teaching artefacts of research, scholarship and consultancy. This perspective resonates with the ideas presented by the Royal Society of Arts findings in their Open Minds Project (1999; 2003) discussed previously.

Adopting a CAS perspective, would allow individual academics to pay particular attention to local communications and patterns of behaviour, and to focus on the present, rather than 'just' the future (Mead, 1934). In addition, a CAS perspective also allows a nexus to exist external to the university and indeed outwith the traditional classroom teaching.

By using CAS to help make sense of the nexes between teaching, research, scholarship, consultancy, student and staff learning, then a plexus web could be used to conceptualise the interconnections between the various elements above. The plexus concept allows a nexus to be concerned with and about all components of the nexus. However, the concept of a plexus stresses that they are interconnected in co-dependent and associate ways and that the inter-connectedness is made obvious through peoples' experiences, actions and beliefs that interlock, via meaning, form, matter and network (Capra 2003), elements which are outlined below.

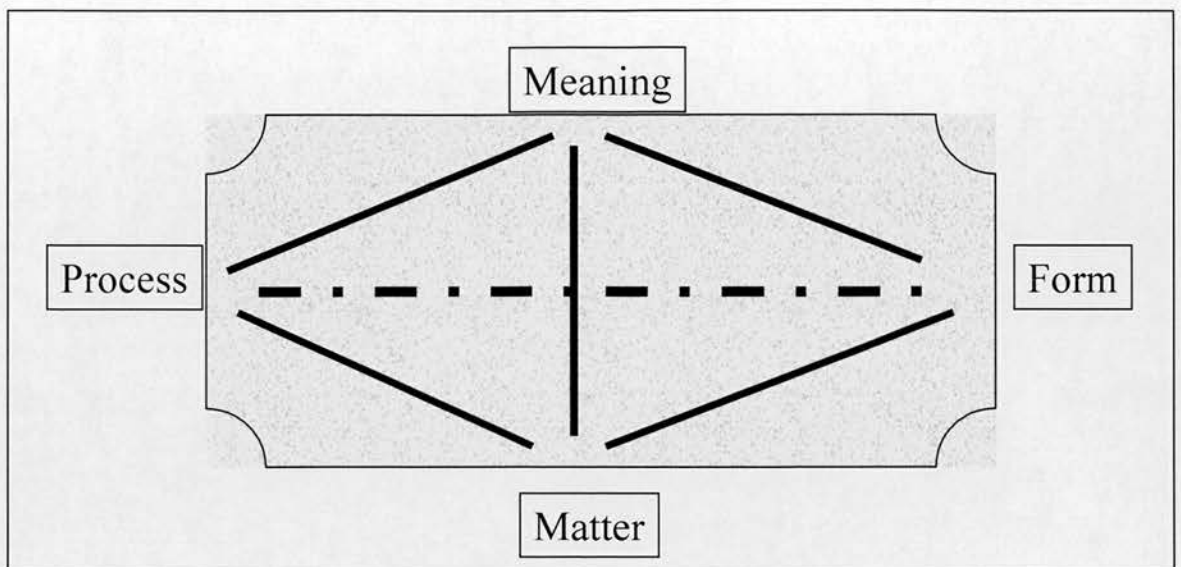


Figure 6.1 - A Plexus Web (adapted From Capra, 2003)

As introduced in Chapter One and discussed further in Chapter Two, nexus studies to date have tended to only measure two or three or the four main academic functions typically associated with being an academic. Although administration is seen as being an activity, it is seen more as an activity that is undertaken by academics, not something that defines them as being an academic. However, most of the studies both qualitative and quantitative tend to measure one, or sometimes two of the variables above, i.e., research, teaching and/or scholarship. The quantitative studies tend to focus on “*matter*”, i.e., what they perceive the nexus to be comprised of, which can be captured and measured, such as a journal paper.

Qualitative studies tend to be preoccupied with “*form*” being the pattern of what is happening, which suggests order, organisation and relationship, which are usually measured by quality factors, i.e., the quality of the learning or the quality of the teaching. However, some do touch on “*matter*” to determine what and what does not impact on teaching.

Only an extremely few nexus studies to date, capture and measure and address the idea of “*meaning*”. Meaning reflects the emerging shifts in thematic patterning of human action (Stacey, 1996). This shift in thematic patterning could be called learning, but in this case, learning can happen individually or collectively

simultaneously. As the plexus web stresses that individuals cannot learn in isolation from the rest of the network or web of interactions between others, but they learn from being part of it acting via local interactions. As with the notion of “*meaning*”, the notion of “*process*” has been touched on by certain qualitative studies surrounding the nexus between teaching, research and scholarship, but it has never been made explicit, or fully understood, given the pre-dominant substantive view in nexus thinking to date. However, this research has attempted to make the ‘process notion’ explicit between teaching, research, scholarship and consultancy (in the form of “*matter*”, “*form*” and “*meaning*”).

Returning to a less speculative view of the nexus, to conclude this thesis, this work has added to the existing knowledge base surrounding the nexus between teaching, research and scholarship in the following ways: firstly, it has added the element of academic consultancy to the debate, an element which has been shown to be an important element when informing teaching practice. Indeed, this research has introduced the idea that two new nexes are perceived to exist, namely between teaching and consultancy and between research and consultancy, the latter being a bi-directional relationship. Secondly, this research also shows how teaching practice is thought to be informed by the nexus between teaching, research, and consultancy. In particular, this research provides empirical evidence as to what is perceived to inform teaching practice in an emerging applied discipline and profession, which, to date, has not been addressed in the existing body of literature. This research suggests that the discipline does influence on what is taught and how, and, in particular, which academic activities are deemed to be the most important and valued, namely research and consultancy by those IS/IM academics surveyed.

Thirdly, the empirical evidence obtained practitioner based views and experiences collected from two Scottish universities. To date, no nexus study has been conducted within Scotland or within Scottish universities. This is interesting since, according to Universities Scotland the amount spent on research in Scotland, per capita, has yielded the highest research ranking in the UK (Universities Scotland, 2006a). In addition to this, Scotland, per capita spent, is regarded as the lead nation regarding knowledge

transfer activities, which includes academic consultancy (Universities Scotland, 2006b). Fourthly, this research has obtained empirical evidence by drawing upon both qualitative and quantitative data. This is very worthwhile, as many existing nexus studies tend to focus only on one type of data, whereas this research has yielded richer findings. In addition to this, this research has focused on practitioners' views and experiences. This allows the voices and views of those who engage in nexus activities to be heard and investigated. This 'bottom up' research rather than 'top down', is more enriching, as it attempts to penetrate at the heart and soul of academic work, i.e., what academics think and do, rather than on what others, such as administrators and senior university managers, think what academic do and should do, has often been the case in the earlier nexus literature.

Fifthly, this research has explored the often taken-for-granted assumptions people have with regards to the definitions of teaching, research, scholarship and consultancy, something many nexus studies have failed to do adequately. Finally, this research suggests that the nexus between teaching, research and consultancy is more of a process, than a substantive element.

Epilogue

"In times of change, learners inherit the Earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists." Eric Hoffer (1902 – 1983).

References

- Andresen, L. W., (2000) A Usable, Trans-Disciplinary Conception of Scholarship, *Higher Education Research and Development*, Vol. 19, Iss. 2, pp 137-153.
- Astin, A. W., (1993) *What Matters in College? Four Critical Years Revisited*, Jossey-Bass, San Francisco.
- Avison, D. E., and Fitzgerald, G., (1991) Information Systems Practice, Education and Research, *Journal of Information Systems*, Vol. 1, pp 5-17.
- Barnett, R., (1992) Linking Teaching and Research: A Critical Inquiry, *Journal of Higher Education*, Vol. 63, No. 6, pp 619-636.
- Barnett, R., (2005) (Ed) *Reshaping the University: New Relationships between Research, Scholarship and Teaching*, SRHE, Open University Press.
- Barrow, R., (1991) The Educated Intelligence, paper presented to *The Annual Conference on the Philosophy of Education*, Rockhampton, paper provided during Ed.D. programme of study (Year One).
- Baskerville, R., and Myers, M. D., (2002) Information Systems as a Reference Discipline, *MIS Quarterly*, Vol. 26, Vol. 1, pp 1-14.
- Becher, T., (1989) *Academic Tribes and Territories: Intellectual Inquiry and the Culture of Disciplines*, Buckingham, Open University Press.
- Becher, T., and Trowler, P., (2001) *Academic Tribes and Territories*, 2nd Edition, Buckingham, Open University Press.
- Beynon-Davies, P., (1999) Information Systems Work: Professionalism and Professionalisation in the UK in Brookes, L and Kimble, C (Eds) *Proceedings of the 4th UKAIS Conference*, 7-9th April, York.
- Biglan, A., (1973a) The Characteristics of Subject Matter in Different Scientific Areas, *Journal of Applied Psychology*, Vol. 57, Iss. 3, pp 195-202. Cited in Becher, T., and Trowler, P., (2001) *Academic Tribes and Territories*, 2nd Edition, Buckingham, Open University Press. (Was unable to access the original).
- Biglan, A., (1973b) Relationships between Subject Matter Characteristics and the Structure and Output of University Departments, *Journal of Applied Psychology*, Vol. 57, Iss. 3, pp 204-213. Cited in Becher, T., and Trowler, P., (2001) *Academic Tribes and Territories*, 2nd Edition, Buckingham, Open University Press. (Was unable to access the original).
- Boaden, R., Lockett, G., (1991) Information Technology, Information Systems and Information Management: Definition and Development, *European Journal of Information Systems*, Vol. 1, Iss. 1, pp 23-32.

- Borgatti, S., (2004) Introduction to Grounded Theory, <http://www.analytictech.com/Mb870/IntrotoGt.Htm> [last accessed 16th May 2007].
- Bosnjak, M. M., and Tuten, T. L., (2001) Classifying Response Behaviours in Web-Based Surveys, *Journal of Computer-Mediated Communication*, Vol. 6, No. 3 (April), at <http://www.ascusc.org/jcmc/vol6/issue3/boznjak.html>, [last accessed 6th November 2002].
- Boyer, E. L., (1990) *Scholarship Reconsidered: Priorities of the Professoriate*, The Carnegie Foundation for the Advancement of Teaching, Princeton, New Jersey, University of Princeton.
- Brew, A., (1999) Research and Teaching: Changing Relationships in a Changing Context, *Studies in Higher Education*, Vol. 24, Iss. 3, pp 291-301.
- Brew, A., (2001) *The Nature of Research: Inquiry in Academic Contexts*, Routledge Falmer, London.
- Brew, A., (2003a) Teaching and Research: New Relationships and their Implications for Inquiry-Based Teaching and Learning in Higher Education, *Higher Education Research and Development*, Vol. 22, Iss. 1, pp 3-18.
- Brew, A., (2003b) Research and the Academic Developer: A New Agenda, *International Journal for Academic Development*, Vol. 7, Iss. 2, pp 112-122.
- Brew, A., (2004) Closing the Gap between Teaching and Research at an Institutional Level: A Case Study, *Research and Teaching: Closing the Divide? An International Colloquium, Marwell Conference Centre, Colden Common, Hampshire, UK, 18-19th March 2004*.
http://www.solent.ac.uk/externalup/318/Angela_Brew_S_Paper.Doc, [last accessed, 14th June 2005].
- Brew, A., and Boud, D., (1995) Teaching and Research: Establishing the Vital Link with Learning, *Higher Education*, Vol. 29, pp 261-273.
- Brown, R., (1995) *Quality, Funding and Diversity: The Role of Research in Higher Education*, Centre for Policy Studies in Education, University of Leeds.
- Brown, R., (2004) *Quality Assurance in Higher Education*, Routledge Falmer, London.
- Brown, G., and Atkins, M., (1997) *Effective Teaching in Higher Education*, Routledge, London.
- Brown, S., and McIntyre, D., (1993) *Making Sense of Teaching*, Buckingham, Open University Press.

- Burrell, G., and Morgan, G., (1979) *Sociological Paradigms and Organisational Analysis*, Gower, Aldershot.
- Capra, F., (2003) *The Hidden Connections: A Science for Sustainable Living*, London, HarperCollins.
- Checkland, P.B., and Scholes, J., (1990) *Soft Systems Methodology in Action*, Chichester, Wiley.
- Checkland, P.B., and Howell, S., (1998) *Information, Systems and Information Systems Making Sense of the Field*, Chichester, Wiley.
- Ciborra, C., (2004) *The Labyrinths of Information: Challenging the Wisdom of Systems*, Oxford, Oxford University Press.
- Clark, B., (1997) The Modern Integration of Research Activities with Teaching and Learning, *The Journal of Higher Education*, Vol. 68, Iss. 33, pp 241-249.
- Coaldrake, P., and Stedman, L., (1999) Academic Work in the 21st Century: Changing Roles and Polices. Occasional Paper Series (99h), *Higher Education Division. Department Of Education, Training & Youth Affairs*, Commonwealth of Australia. <http://www.dest.gov.au/archive/highered/occpaper/99H/academic.pdf> [last accessed 15th June 2005].
- Colbeck, C., (1998) Merging into a Seamless Blend: How Faculty Integrate Teaching and Research, *The Journal of Higher Education*, Vol. 69, Iss. 6, pp 647-671.
- Couper, M. P., (2000) Web Surveys a Review of Issues and Approaches, *Public Opinion Quarterly*, Volume 64, Iss. 4 (Winter), pp 464-481.
- Couper, M. P., (2001) Web Surveys: The Questionnaire Design Challenge, *Proceedings of the 53rd Session of the ISI*, At <Http://134.75.100.178/Isi2001/>, [last accessed 6th November 2002].
- Court, S., (1999) Negotiating the Research Imperative: The Views of UK Academics on their Career Opportunities, *Higher Education Quarterly*, Vol.53, No.1, pp 65-87.
- Davies, S.W., and Glaister, K.W., (1996) Spurs to Higher Things? Mission Statements of UK Universities, *Higher Education Quarterly*, Vol.50, Iss. 4, pp 261-294.
- Davies, G., and Olson, M., (1985) *Management Information Systems: Conceptual Foundations, Structure, and Development*, McGraw-Hill, New York.
- Dey, I., (1999) *Grounding Grounded Theory: Guidelines for Qualitative Inquiry*, Sand Diego Academic Press, Sand Diego.

- Department for Education and Skills (DfES), (2003) *The Future of Higher Education*, (Cm5735), London, The Stationery Office.
- DeVaus, D.A., (1996) *Surveys in Social Research*, (3rd Ed), Allen and Unwin, London.
- Dillman, D. A., Phelps, G., Tortora, R. D., Swift, K., Kohrell, J., and Berck, J., (2001) Response Rate and Measurement Differences in Mixed Mode Surveys using Mail, Telephone, Interactive Voice Response and the Internet, at [Http://Survey.Sesrc.Wsu.Edu/Dillman/Papers/Mixed%20mode%20ppr%20 With%20gallup %20poq.Pdf](http://Survey.Sesrc.Wsu.Edu/Dillman/Papers/Mixed%20mode%20ppr%20With%20gallup%20poq.Pdf), [last accessed 22nd November 2003].
- Dillman, D., and Redline, C.D., (1999) Influence of Type of Question on Skip Pattern Compliance in Self-Administered Questionnaires, at [Http://Survey.Sesrc.Wsu.Edu/Dillman/Papers/AMSTAT%20'99%20proceedings%20paper.Pdf](http://Survey.Sesrc.Wsu.Edu/Dillman/Papers/AMSTAT%20'99%20proceedings%20paper.Pdf), [last accessed 6th November 2002].
- Dillman, D.A., Tortora, R.D., and Bowker, D., (1998) Principles for Constructing Web Surveys, Working Paper Available from [Http://Survey.Sesrc.Wsu.Edu/Dillman/Papers.Htm](http://Survey.Sesrc.Wsu.Edu/Dillman/Papers.Htm) [Last Accessed June 2002].
- Dobson, S., and McNay, I., (1996) Organisational Culture, in Warner, D., Palfeyman, D., (editors), *Higher Education Management - The Key Elements*, pp 16-32, Buckingham, SRHE/OU Press (could not locate the original).
- Downie, R. S., (1990) Professions and Professionalism, *Journal of the Philosophy of Education*, Vol. 24, Iss. 2, pp 147-59.
- Deem, R., and Lucas, L., (2006a) Learning about research: exploring the learning and teaching/research relationship amongst educational practitioners studying in higher education, *Teaching in Higher Education* Vol. 11, No. 1, pp. 1-18.
- Deem, R., and Lucas, L., (2006b) Research and teaching cultures in two contrasting UK policy contexts: Academic life in Education Departments in five English and Scottish universities, *Higher Education*, Online First: pp 1-19, due to be published in 2007, based on a paper entitled "Identities and cultures of Education academics and their Departments in England and Scotland: research, teaching and academic life in two contrasting policy locations" presented at the *Consortium of Higher Education Researchers Conference*, Jyväskylä, Finland, 1st – 3rd September 2005.
- Drennan, L. T., (2001) Quality assessment and the tension between teaching and research, *Quality in Higher Education*, Vol. 7, Iss. 4, pp 167–78.
- Drennan, L., and Beck, M., (2001) Teaching Quality Performance Indicators: Key Influences on the UK University Scores, *Quality Assurance in Education*, Vol. 9, Iss. 2, pp 92-102.

- Earl, M. J., (1989) *Management Strategies for IT*, Prentice Hall, London.
- Easterby-Smith, M., Thorpe, R., and Lowe, A., (1991) *Management Research: An Introduction*, Sage, London.
- Ellis, R.J., (2001) Does Researching Help or Hinder Your Teaching? *English Subject Centre Newsletter, Royal Holloway, Iss. 1, May 2001*
<http://www.english.ltsn.ac.uk/explore/publications/newsletters/newsissue1/index.htm>
 [last accessed June 2004].
- Elton, L., (1992) Research, Teaching and Scholarship in an Expanding Higher Education System, *Higher Education*, Vol. 46, Iss. 3, pp 252-268.
- Elton, L., (1995) Effect of Funding Council Policies on Teaching Quality, in Smith, B., and Brown, S., (eds) *Research, Teaching and Learning in Higher Education*, Kogan Page, London.
- Elton, L., (2001) Research and Teaching: Conditions for a Positive Link, *Teaching in Higher Education*, Vol. 6, Iss. 1, pp 43-56.
- Entwistle, N., (1995) The Use of Research on Student Learning in Quality Assessment, *Improving Student Learning Through Assessment and Evaluation*, editor, G. Gibbs., G., Oxford Centre For Staff and Learning Development, Oxford, pp 24-43.
- Entwistle, N.J., and Marton, F., (1994) Knowledge Objects: Understanding Constituted Through Intensive Academic Study, *British Journal of Educational Psychology*, Vol. 64, pp 161-178.
- Etzioni, A., (1969) *The Semi-professions and their Organisation: Teachers, Nurses and Social Workers*, New York, Free Press.
- Feldman, K., (1987) Research Productivity and Scholarly Accomplishment of College Teachers as Related to their Instructional Effectiveness, *Research in Higher Education*, Vol. 26, Iss. 3, pp 227-291.
- Foresight Programme, (1999) - <http://www.foresight.gov.uk/> [Last accessed 15th June 2006].
- Fox, M., (1992) Research, Teaching and Publication Productivity: Mutuality Versus Competition in Academia, *Sociology of Education*, Vol. 65, pp 293-305.
- Galliers, R.D., (2003) Change as Crisis or Growth? Towards a Trans-Disciplinary View of Information Systems as a Field of Study, *Journal of the Association of Information Systems*, Vol. 4, Iss. 6, pp 337-351.
- Gibbs, G., (1997) *Times Higher Educational Supplement* of 2nd May 1997 (front page).

- Gibbs, G., (2002) *Analysis of Strategies for Learning and Teaching*, Higher Education Funding Council for England, Bristol.
- Gibbons, M., (1997) *Development of Science and Basic Research: The Implications of Mode 2 Science*, in H., Etzkowitz and L., Leydesdorff (Eds) *Universities and the Global Knowledge Economy: a Triple Helix of University-Industry-Government Relations*, pp 90-104, London, Pinter.
- Glaser, B. G., (1994) *Basics of Grounded Theory Analysis: Emergence Versus Forcing*, Mill Valley, California Sociology Press.
- Glaser, B.G., (1998) *Doing Grounded Theory: Issues and Discussions*, Sociological Press, Mill Valley, California.
- Glaser, B. G., and Strauss, A., (1967) *The Discovery Of Grounded Theory*, Chicago, Aldine.
- Grant, K., Stansfield, M.H., and Land, R., (2000) *Teaching Information Management to Honors Degree Students: The Information Challenges Approach*, *Informing Science: The International Journal of an Emerging Discipline*, Vol. 3, Iss. 2, pp 41-46. <http://www.inform.nu/articles/vol3/v3n2p41-56.pdf> [Last Accessed 30th June 2003].
- Grant, K., Hackney, R., and Edgar, D.A., (2003) *Managerial Academia: Towards the Harmonization of the Profession*, *The Journal of Informatics Education and Research*, Vol. 5, Iss. 2, Fall 2003, pp 1-15.
- Grant, K., and Fitzgerald, S., (2005) *The Nexus between Teaching and Research: A Qualitative Study Using Two Focus Group on Academic Information Systems Teachers*, *Electronic Journal of Business Research Methods*, Vol. 3 Iss. 1, April 2005, pp 37-56.
- Groves, R., M., (1989) *Survey Errors and Survey Costs*, Wiley, New York.
- Haig, B. D., (2003) *Grounded Theory as Scientific Method*, *Philosophy of Education*, http://www.ed.uiuc.edu/eps/pes-yearbook/95_docs/haig.html [Last Accessed 30th October 2003].
- Hattie, J., and Marsh, H. W., (1996) *The Relationship Between Research and Teaching: A Meta-Analysis*, *Review of Educational Research*, Vol. 66, Iss. 4, pp 507-542.
- Hattie, J., and Marsh, H. W., (2004) *One Journey to Unravel the Relationship between Research and Teaching*, *an International Colloquium, Maxwell Conference Centre, Colden Common, Hampshire, UK, 18-19 March 2004* http://www.solent.ac.uk/ExternalUP/318/hattie_and_marsh_paper.doc [Last Accessed, 14th June 2005].

Higher Education Funding Council for England and Wales (HEFCE) (2000) Review of Generic Research Funding Report to the HEFCE by KPMG http://www.hefce.ac.uk/Pubs/Hefce/2000/00_48.htm [last accessed 7th July 2003].

Higher Education Funding Council for England and Wales (HEFCE) (2000) 00/37, Review of Research, Bristol, Higher Education Funding Council for England. www.ilt.ac.uk/archives/hefce_rev.htm [last accessed 14th June 2005].

Higher Education Research Office (HERO), (2005) <http://www.hero.ac.uk/uk/home/index.cfm> [last accessed 14th June 2005].

Hirschheim, R., 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* Vol. 4, Iss. 5, pp 237-293.

Higher Education Academy (2005) Institutional strategies to link teaching and research, by Alan Jenkins and Mick Healey (1st November 2005) - http://www.heacademy.ac.uk/resources.asp?process=full_record§ion=generic&id=585 [last accessed 4th May 2007].

Hitchcock, G., and Hughes, D., (1989) *Research and the Teacher: A Qualitative Introduction to School-Based Research*, Routledge, London.

Holliday, A., (2002) *Doing and Writing Qualitative Research*, Sage, London.

Hounsell, D., (2006) – Glasgow Caledonian University, Senior Management Forum, 18th January 2006, Large First Year Undergraduate Courses: Some Research Findings and their Organisational and Managerial Implications.

Hounsell, D., (2002) Does Research Benefit Teaching? *Exchange* Special Issue on Linking Research and Teaching, pp 6-8, <http://www.exchange.ac.uk/issue3.asp> [last accessed 30th June 2003].

Hughes, C., and Tight, M., (1995) Linking University Teaching and Research, *Higher Education Review*, Vol. 28, Iss. 1, pp 51-55.

Hutchings, P., (2004) Approaching the Scholarship of Teaching and Learning, in *Opening Lines: Approaches to the Scholarship of Teaching and Learning*, Hutchings, P., ed., Menlo Park, CA: Carnegie Foundation for the Advancement of Teaching. http://www.carnegiefoundation.org/publications/opening_lines4.htm [last accessed 14th of June 2006].

J. M. Consulting (2000) Interactions between Research, Teaching and other Academic Activities, report for the Higher Education Funding Council for England, Bristol.

Jenkins, A., (1995) The Impact of the Research Assessment Exercises on Teaching in Selected Geography Departments in England and Wales, *Geography*, Vol. 84, Iss. 4, pp 367-374.

Jenkins A., (2000) The Relationship between Teaching and Research: Where Does Geography Stand and Deliver, *Journal of Geography in Higher Education*, Vol. 24, Iss. 3, pp 325-351.

Jenkins, A., (2005) A Guide to the Research Evidence on Teaching-Research Relations, By Alan Jenkins, for the Higher Education Academy, (formerly the ILTHE), December 2005, York.

Jenkins, A., Blackman, T., Lindsay, R., and Paton-Saltzberg, R., (1998) Teaching and Research: Student Perspectives and Policy Implications, *Studies in Higher Education*, Vol. 23, Iss. 2, pp 127-141.

Jenkins, A, Breen, R., Lindsay, R., and Brew, A., (2002) *Reshaping Teaching in Higher Education: Linking Teaching and Research*, Kogan Page, London.

Jenkins, A and Zetter, R. (2003) *Linking Research and Teaching in Departments* Oxford Brookes University, full text (PDF) available at:
http://www.ltsn.ac.uk/application.asp?app=resources.asp&process=full_record§ion=generic&id=257 [last assessed 16 June 2005].

Jensen, J. J., (1998) Research and Teaching in the Universities of Denmark Does Such an Interplay Really Exist? *Higher Education*, Vol. 17, pp 7-26.

Keen, P. G. W., (1987) MIS Research: Current Status, Trends and Needs, in *Information Systems Education: Recommendations and Implementation*, Buckingham, R. A., Hirschheim, R. A. Land, F. F., and Tully, C. J. (eds.), Cambridge University Press.

Kerr, C., (1962) reprinted as Kerr, C., (1995) *The Uses of the University (4th ed.)* Cambridge, Harvard University Press.

King, J. L., and Lyytinen, K., (2003) When Grasp Exceeds Reach: Will Fortifying our Theoretical Core Save the Information Systems Field?, Working Paper Series, George Town University. Available E-library – Association of Information Systems
<http://www.ais.org> [last accessed June 2004].

Kolitch, E., and Dean, A.V., (1999) Student Ratings of Instruction in the USA: Hidden Assumptions and Missing Conceptions about 'Good' Teaching, *Studies in Higher Education*, Vol. 24, Iss. 4, pp 27-42.

Kolb D, A., (1983) *Experiential Learning: Experience as the Source of Learning and Development*, Prentice Hall, New York.

- Kreber, C., (2003) The Scholarship of Teaching: Conceptualizations of Experts and Regular Academic Staff, *Higher Education*, Vol. 46, Iss. 1, pp 93-121.
- Kreber, C., (2005) Higher Education Seminar Lunch Time Seminar, Teaching, Learning and Assessment Centre, University of Edinburgh.
- Kreber, C., (2006) Exploring Research-Based Teaching: New Directions for Teaching and Learning, No. 107. Jossey-Bass, New Jersey.
- Kreber, C., and Cranton P. A., (2000) Exploring the Scholarship of Teaching, *Journal of Higher Education*, Vol. 71, pp 476-495.
- Kuhn, T. S., (1970) *The Structure of Scientific Revolutions*, Chicago, Illinois, the University of Chicago Press.
- Lambert, R., (2003) The Lambert Review of Business-University Collaboration, final report, HM Treasury, London <http://www.lambertreview.org.uk> [last accessed 14th June 2004].
- Landry, M., and Banville, C., (1992) A Disciplined Methodological Pluralism for MIS Research, *Accounting, Management and Information Technologies*, Vol. 2, Iss. 2, pp 77-97.
- Larwood, L., and Gattiker, U. E., (1999) *Impact Analysis: How Research Can Enter Application and Make a Difference*, Lawrence Erlbaum Associates, New Jersey.
- Lave, J., and Wenger, E., (1991) *Situated Learning: Legitimate Peripheral Participation*, Cambridge University Press, Cambridge.
- Lindsay, R., Breen, R and Jenkins, A., (2002) Academic Research and Teaching Quality: The Views of Undergraduate and Postgraduate Students, *Studies in Higher Education*, Vol. 27, Iss. 3, pp 309-327.
- Lucas, L., (2006) *The Research Game in Academic Life*, Maidenhead, Open University Press & the Society for Research into Higher Education. Macfarlane, A., (1994) Future Patterns of Teaching and Learning in Schuller, T., (Ed) *The Changing University*, Open University Press, London.
- Marsh, H.W., and Hattie, J. (2002) The Relation Between Research Productivity and Teaching Effectiveness: Complementary, Antagonistic or Independent Constructs? *The Journal of Higher Education*, Vol. 72, Iss. 5, pp 603-641.
- Marsh, H.W., and Overall, J.W., (1979) Validity of Students Evaluations of Teaching: a Comparison with Instructor Self Evaluations by Teaching Assistants, Undergraduate Faculty and Graduate Faculty, paper presented at the Annual Meeting of the American Educational Research Association, cited In Marsh, H.W., and Hattie, J., (2002) The Relation Between Research Productivity and Teaching Effectiveness:

Complementary, Antagonistic or Independent Constructs? *The Journal of Higher Education*, Vol. 72, Iss. 5, pp 603-641. (Was unable to access the original).

Martin, E., and Ramsden, P., (1992) An Expanding Awareness: How Lecturers Change Their Understanding of Teaching, *Research and Development in Higher Education*, Vol. 15, pp 148-155.

Mead, G. H., (1934) *Mind, Self and Society*, Chicago University Press, Chicago.

McBride, N., and Hackney, R., (2003) Establishing the Principles of Information Systems Teaching, *Communication of the Association for Information Systems*, Vol. 11, pp 322-331.

McCall, M., and Bobko, P., (1990) *Research Methods and Discovery in Industrial/Organisational Psychology*, Palo Alto, California.

McInnis, C., (2000) Changing Academic Work Roles: the Everyday Realities Challenging Quality in Teaching, *Quality in Higher Education*, Vol. 6, Iss. 2, pp 143-152.

McLaughlin, P., (2003) Lecture Material, Nature of Inquiry, Taught Ed.D. Module at the University of Edinburgh.

McNay, I., (1999) The Paradoxes of Research Assessment and Funding, in *Changing Relationships between Higher Education and the State*, Henkel, M., and Little, B. (ed) pp 191-203, Jessica Kingsley, London.

McNay, I., (1997) The Impact of the 1992 RAE on Institutional and Individual behaviour in English Higher Education: The Evidence from a Research Project, Higher Education Funding Council for England (HEFCE), Bristol.

Morley, L., (2000) School effectiveness: new managerialism, quality and the Japanization of education, *Journal of Educational Policy*, Vol. 15, Iss.2, pp169-183.

Newman, J. H., (1852) *The Idea of a University*, London, Longman, Green, (1929) Edition, in Ball, C., and Eggins, H., (Eds) (1989) *Higher Education into the 1990's: New Dimensions*, The Society for Research in Higher Education, Open University Press, Milton Keynes. (Was unable to access the original 1852 or the 1929 editions).

Neumann, R., (1992) Perceptions of the Teaching-Research Nexus: Framework for Analysis, *Higher Education*, Vol. 23, pp 159-171.

Neumann, R., (1993) Research and scholarship: Perceptions of Senior Academic Administrators, *Higher Education*, Volume 25, Iss. 2, pp 97-110 available at [http://www.springerlink.com/\(x4gsj255rn4j05umfs2qrwbb\)/app/home/contribution.asp?referrer=parent&backto=issue,1,9;journal,108,225;linkingpublicationresults,1:102901,1](http://www.springerlink.com/(x4gsj255rn4j05umfs2qrwbb)/app/home/contribution.asp?referrer=parent&backto=issue,1,9;journal,108,225;linkingpublicationresults,1:102901,1) [last accessed 13th June 2004].

- Neumann, R., (1994) The Teaching-Research Nexus: Applying a Framework to University Students' Learning Experiences, *European Journal of Education*, Vol. 29, Iss. 3, pp 323-338.
- Neumann, R., (2001) Disciplinary Differences and University Teaching, *Studies in Higher Education*, Vol..26, Iss. 2, pp 135-146.
- Neumann, R., and Becher, T., (2002) Teaching and Learning in their Disciplinary Contexts: a Conceptual Analysis, *Studies in Higher Education*, Vol. 27, Iss. 2, pp 405-418.
- Nexus Project (1999) Centre for Educational Development and Interactive Resources, University of Wollongong [Http://Cedir.Uow.Edu.Au/Nexus/Index.Html](http://Cedir.Uow.Edu.Au/Nexus/Index.Html) [last accessed 30th June 2003].
- NCIHE (National Committee of Inquiry into Higher Education) (1997a), *Education in the Learning Society, Report of the National Committee (the Dearing Report)* London, HMSO, <http://www.leeds.ac.uk/educol/ncihe/> [last accessed 14 June 2004]
- NCIHE (National Committee of Inquiry into Higher Education) (1997b), *Education in the Learning Society, Report of the Scottish Committee (the Garrick Report)* London, HMSO, <http://www.leeds.ac.uk/educol/ncihe/scottish.htm> [last accessed 14th June 2004].
- Ottewill, R., and Macfarlane, B., (2005) National Report for the Business Education Support Team Explicit and Implicit Judgement of Quality: an Analysis of the QAA Business and Management Subject Review Reports (2000-2001), BEST, LTSN Subject Centre, Business & Management, GCU.
- Ozga, J., (2000) *Policy Research in Educational Settings: Contested Terrain*, Buckingham: Open University Press.
- Pollitt, C., (1990) *Managerialism and the Public Sector: The Anglo-American Experience*, Blackwell, Oxford.
- Porter, E. M., and Ketels, C. H.M., (2003) UK Competitiveness: Moving to the Next Stage, Department of Trade and Industry Economics Paper Number 3, (with the Economic & Social Research Council. <http://www.dti.gov.uk/files/file14771.pdf> [last accessed 20th September 2006].
- Powers, B. A., and Knapp, T.R., (1995) *A Dictionary of Nursing Theory and Research* (2ed), Sage, London.
- Pring, R., (2000) *Philosophy of Educational Research*, Continuum, London.
- Prosser, M., Martin, E., Trigwell, K., Ramsden, P., and Lueckenhausen, G., (2005) Academics Experiences of Understanding of their Subject Matter and the Relationship

- to their Experiences of teaching and learning”, *Instructional Science*, Vol. 33, pp 137-157.
- Prosser, M., and Trigwell, K., (1997a) Perceptions of the Teaching Environment and its Relationship to Approaches to Teaching, *British Journal of Educational Psychology*, Vol. 67, pp 25-35.
- Prosser, M., and Trigwell, K., (1997b) Using phenomenology in the Design of Programs for Teachers in Higher Education, *Higher Education Research and Development*, Vol. 16, Iss. 1, pp 49-57.
- Prosser, M., Trigwell, K., and Taylor, P., (1994) A Phenomenographic Study of Academics' Conceptions of Science Teaching and Learning, *Learning and Instruction*, Vol. 4, pp 217-231. Available at http://www.sciencedirect.com/science?_ob=IssueURL&_tockey=%23TOC%236021%231994%23999959996%23324457%23FLP%23&_auth=y&view=c&acct=C000010621&version=1&urlVersion=0&userid=128597&md5=dc41984c31603a7c8a4cf2e470ffb6e8 [last accessed 13th June 2004].
- Pulsen, M B., (2001) The Relation Between Research and the Scholarship of Teaching, Chapter Two, pp 12-29, in Kreber C., et al (Editors) (2001) *New Directions for Teaching and Learning*, Jossey Bass, Chichester.
- Ramsden P., (1998) *Learning to Lead in Higher Education*, Routledge, London.
- Ramsden, P., (2001) Strategic Management of Teaching and Learning, in *Improving Student Learning Strategically*, Rust, C., (ed), pp 1-10, OCSLD, Oxford.
- Ramsden P., and Moses I., (1992) Associations between Research and Teaching in Australian Higher Education, *Higher Education*, Vol. 23, pp 273-295.
- Rand Corporation (2001) American Military Research Institute.
- RCD (2006) Research and Commercialisation Department, Glasgow Caledonian University.
- Redline, C.D., and Dillman, D.A., (1999) The Influence of Auxiliary, Symbolic, Numeric, and Verbal Language on Navigational Compliance in Self-Administered Questionnaires, at [Http://Survey.Sesrc.Wsu.Edu/Dillman/Papers/Auxiliary,Symbolic,Numeric%20paper-With%20Cleo.Pdf](http://Survey.Sesrc.Wsu.Edu/Dillman/Papers/Auxiliary,Symbolic,Numeric%20paper-With%20Cleo.Pdf), [last accessed 6th November 2002].
- Remenyi, D., Williams, B., Money, A., Swartz, E., (1998) *Doing Research in Business and Management*, Sage Publications, London.
- Rescher, N., (1995) *Process Metaphysics*, Albany State University of New York Press, New York.

Rescher, N., (2001) *Process Philosophy: a Survey of Basic Issues*, University of Pittsburgh Press, Pittsburgh.

Rice, E. R., and Austin, A. E., (1990) Organisational Impacts on Faculty Morale and Motivation to Teach, in *How Administrators Can Improve Teaching*, edited by Seldin, P., San Francisco: Jossey-Bass. Cited In 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*, Vol. 22, Iss. 1, pp3-18. (Was unable to locate book personally).

Rice, R.E., (1992) Towards a Broader Conception of Scholarship: the American Context, in Whiston, T. G., and Giger, R. L., (Eds) *Research and Higher Education: the UK and the USA*. Cited in 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*, Vol. 22, Iss. 1, pp3-18. (Was unable to locate book personally).

Ritzer, G. (1996) *The McDonaldization of Society Revised*, Thousand Oaks, Pine Forge, California.

Roberts Report - Review of research assessment Report by Sir Gareth Roberts to the UK funding bodies, 2003, <http://www.ra-review.ac.uk/reports/roberts.asp> [last accessed 14th June 2004].

Robbin's Report (1963) - Committee on Higher Education (1963), *Higher Education Report of the Committee appointed by the Prime Minister under the Chairmanship of Lord Robbins 1961-1963*, London, HMSO.

Robertson, J., and Bond, C., (2001) Experiences of the Relations between Teaching and Research: What do Academics Value? *Higher Education Research and Development*, Vol. 20, Iss. 1, pp 5-19.

Robertson, J., and Bond, C., (2003), *The research/teaching relation: variation in communities of enquiry*, paper presented to the Society for Research in Higher Education Annual Conference 'Research, Scholarship and Teaching: changing relationships', December 16th-18th, Royal Holloway College, University of London.

Robson, C., (2002) *Real World Research*, (2nd Ed), Blackwell, Oxford.

Rowland, S., (1996) Relationships between Teaching and Research, *Teaching in Higher Education*, Vol. 1, Iss. 1, pp 7-20.

Rowland, S., (2000) Teaching and Research: a Marriage on the Rocks? paper presented at the European Conference on Educational Research, Edinburgh, 20th - 23rd September 2000.

- Royal Society of Arts (1999; 2003) Opening Minds Project (1999) and Opening Minds Project: Taking Stock (2003), London, available at <http://www.thersa.org> [last accessed 26th September 2006].
- Royer, I., and Zarlowski, P., (2001) Research Design, in Thiétar R. A., (ed.), *Doing Management Research: a Comprehensive Guide*, Sage, London, pp 111–131.
- Satmetrix, (2001) Investigating Validity in Web surveys, at http://www.satmetrix.com/public/pdfs/validity_wp4.pdf, [Last accessed 16th September 2003].
- Saunders, M., Lewis, P., and Thornhill, A., (2003) *Research Methods for Business Students*, (2nd ed), Prentice Hall, London.
- Schils, E., (1983) *The Academic Ethic*, University of Chicago Press, Chicago.
- Schils, E., (1992) The Idea of the University: Obstacles and Opportunities in Contemporary Societies, *Minerva* XXX, Vol., 2 (Summer 1992), pp 301-309.
- Schon, D. A., (1995) the new Scholarship Requires a New Epistemology, *Change*, Vol. 27, Iss. 6, pp 26-34.
- Scott, D. K., and Awbrey, S.M., (1993) Transforming Scholarship, *Change*, Vol. 25, Iss. 4, pp 38-43.
- Scott, P., (1990) *Knowledge and Nation*, Edinburgh University Press, Edinburgh.
- Scott, P., (2002) Speech at Kingston University (principals address) (attended as an external examiner on the MSc BIT programme, at Kingston University).
- Scottish Higher Education Funding Council (2003), now the Scottish Funding Council Archive (2003)- Joint Corporate Plan - http://www.sfc.ac.uk/publications/pubs_news.htm [last accessed 14th June 2005].
- Shore, B., Pinker, S., and Bates, M. (1990) Research as a model for university teaching, *Higher Education*, Vol. 19, pp. 21-35.
- Silverman, D., (2000) *Doing Qualitative Research: A Practical Handbook*, Sage, London.
- Slaughter, S., and Leslie, G., (1997) *Academic Capitalism*, Baltimore, John Hopkins University.
- Smeby, J., (1998). Knowledge Production and Knowledge Transmission. The Interaction between Research and Teaching at Universities, *Teaching In Higher Education*, Vol. 3, Iss. 1, pp 5-20.
- Smith, C. B., (1997) Casting the Net: Surveying an Internet Population, *Journal of Computer-Mediated Communication*, Vol. 3, No. 1 (June), At

[Http://Jcmc.Huji.Ac.II/Vol3/Issue1/Smith.Html](http://Jcmc.Huji.Ac.II/Vol3/Issue1/Smith.Html), [Last Accessed 16th September 2003].

Solomon, D. J., (2001) Conducting Web-Based Surveys, *Practical Assessment, Research and Evaluation*, Volume 7, Number 19, at [Http://Ericae.Net/Pare/Getvn.Asp?V=7&N=19](http://Ericae.Net/Pare/Getvn.Asp?V=7&N=19), [last accessed 6th November 2002].

Stacey, R. D., (2001) *Complex Responsive Processes in Organisations: Learning and Knowledge Creation*, Routledge, London.

Stacey, R., D., (1996) *Complexity and Creativity in Organisations*, Brerrett-Koehler, San Francisco.

Stacey, R, D., (2005) *Experiencing Emergence in Organisations: Local Interaction and the Emergence of Global Pattern*, Routledge, London.

Starbuck, W.H., and Milliken, F. J., (1988) Executives' Perceptual Filters: what they notice and what they make sense of, pp 35-65, in D. C. Hamerick (Ed), *The Executive Effect: Concepts and Methods for Studying Top Executives*, Greenwich, Maine.

Starkey, K., (2001) In Defence of Modes One, Two and Three: A Response, *British Journal of Management*, Vol.12,4 SI,1, pp.77-S80.

Starkey, K., and Madan, P., (2001) Bridging the Relevance Gap: Aligning Stakeholders in the Future of Management Research, *British Journal of Management*, Vol. 12, Special Issue, December, pp S3-S26.

Strauss, A. L., (1987) *Qualitative Analysis for Social Scientists*, Cambridge University Press, New York.

Strauss, A., and Corbin, J., (1990) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*, Sage, Newbury Park.

Strauss, A., and Corbin, J., (1994) Grounded Theory Methodology: an Overview, in Denzin, N.K., and Lincoln, Y. S., (Eds.), *Handbook of Qualitative Research*, pp 273-285, Sage Publications, California.

Symons, V., and Walsham, G., (1991) the Evaluation of Information Systems: a Critique, in Veryard, R., (Ed) *The Economics of Information Systems and Software*, Butterworth and Heinemann, Oxford.

Terenzini, P. T., and Pascarella, E. T., (1994) Living with Myths: Undergraduate Education in America, *Change*, Vol. 26, Iss. 1, pp 28-32.
[Http://Www.Brevard.Edu/Firstyearhallmarks/Aascu/Resources/Terenzini7.Pdf](http://Www.Brevard.Edu/Firstyearhallmarks/Aascu/Resources/Terenzini7.Pdf) [Last Accessed 7th July 2003].

THES (2004a) - Times Higher Education Supplement, 11th June 2004, page 6, "Research-only staff on the rise" by David Jobbins.

THES (2004b) - Times Higher Education Supplement, 25th June 2004, page 8, "Women crack glass ceiling" by, Paul Hill.

THES (2005) Times Higher Education Supplement, 4th of November 2005, page 9, "Ability to link teaching and research should decide jobs, academy says academy", by Anthea Lipsett.

THES (2006) Times Higher Education Supplement, 6th January 2006, Page 1 and Page 8, "Staff Cash in on Consultancy", by Jessica Shepherd.

Ticehurst, G. W., and Veal A. J., (1999) *Business Research Methods: A Managerial Approach*; Longman; Frenchs Forest, NSW.

Trow, M., (1973) The Distributed of Academic Tenure in American Higher Education Martin Trow, in *The Tenure Debate*, Bardwell L. Smith & Assoc., (eds). San Francisco, Jossey-Bass, pp 223-250, cited by Hounsell (2006), (was unable to secure access direct).

Trigwell, K., and Prosser, M., (1996) Changing Approaches to Teaching: a Relational Perspective, *Studies in Higher Education*, Vol. 21, pp 275-284.

Trigwell, K., Martin, E., Benjamin J., and Prosser, M., (2000) Scholarship of Teaching: A Model, *Higher Education Research and Development*, Vol. 19, Iss. 2, pp 155-168.

UKAIS (2005), United Kingdom Academy of Information Systems, <http://www.ukais.org/> [last accessed 4th May 2007].

Universities Scotland, (2006a) Facts and Figures, - What Is Research [last accessed 17th October 2006] <http://www.universities-scotland.ac.uk/>

Universities Scotland, (2006b) Facts and Figures, - What is Knowledge Transfer [last accessed 17th October 2006] <http://www.universities-scotland.ac.uk/>

Walsham, G., (1993) *Interpreting Information Systems in Organisations*, John Wiley, Chichester.

Weick, K, E., (1995) *Sensemaking in Organisation*, Foundations for Organisational Science, Sage, California.

Wenger, L., (1998) *Communities of Practice*, Cambridge University Press, Cambridge.

Whitley, R., (1984) *The Intellectual and Social Organisation of the Science*, Clarendon Press, Oxford.

Woodharper, T., (2004) Surviving the Thesis, paper presented at the United Kingdom Academy of Information Systems (UKAIS) Annual PhD Consortium, hosted by Division of Business Information Management, Glasgow Caledonian University, 4th - 5th May 2004.

Zaman, M. Q. U., (2004) Review of the Academic Evidence on the Relationship between Teaching and Research in Higher Education, Department of Education and Skills, Research Report RR506.

Zanutto, E., (2001) Web and E-Mail Surveys, At [Http://Www-Stat.Wharton.Upenn.Edu/~Zanutto/Annenberg2001/Docs/Websurveys01.Pdf](http://www-stat.wharton.upenn.edu/~zanutto/annenberg2001/docs/websurveys01.pdf), [last accessed 16th September 2003].

Zubrick, A., Reid, I., and Rossiter, P., (2001) Strengthening the Nexus between Teaching and Research, Department of Education, Training and Youth Affairs, Canberra. [Http://Www.Detya.Gov.Au/Highered/Eippubs/Eip01_2/Default.Htm](http://www.detya.gov.au/highered/eipubs/eip01_2/default.htm) [last accessed 16th September 2003].

Appendix One - Graphical View Of Various Authors Position On The Nexus Between Teaching and Research

There is NO Link between teaching and research	There is A LINK between teaching and research	There may be a LINK between teaching and research
<ol style="list-style-type: none"> 1. Barnett, (1992) 2. Centra (1983) 3. DfES (2003) 4. Drennan (2001) 5. Drennan & Beck (2001) 6. Feldman (1987) 7. Gibbs (1997) 8. Hattie & Marsh (1996; 2004) 9. Marsh & Hattie (2002) 10. Ramsden & Moses (1992) 11. Zanman (2004) 	<ol style="list-style-type: none"> 1. Andre & Frost (1997) 2. Boyer (1990) 3. Brew & Boud (1995) 4. Brew (2001; 2003; 2004) 5. Gibbs (2002b) 6. Hattie & Marsh (2002;2004) 7. Jenkins (2000; 2005) 8. HE Academy (2005) 9. HEFC (2000;2002; 2003) 10. Jenkins & Blackman (1998) 11. Kane, et al (2004) 12. Neumann (1992; 1993; 1994) 13. Rowland (2000) 14. Smeby (1998) 15. Jenkins et al (2003; 2004) 	<ol style="list-style-type: none"> 1. Braxton (1996)

Synthesis of Studies on the Nexus between Teaching and Research

It is evident from the above, which fails to demonstrate an agreed consensus as to whether there is a link or a relationship between teaching and research. Indeed, there are several studies supporting a nexus between teaching and research, with a similar amount suggesting the contrary. Indeed, several authors over the years have changed their view or cannot say absolutely. Additional references for grid, not already specified in the full reference list earlier.

Andre, R., and Frost P.J., (Editors) (1997) *Researchers Hooked on Teaching, Noted Scholars Discuss the Synergies of Teaching and Research*, Foundation For Organisational Science, California, Sage Publication.

Braxton, J. M., (Ed) (1996) *Faculty Teaching and Research: is there a conflict?*, New Direction for Institutional Research, San Francisco, Jossey-Bass.

Centra, J. A., (1983) Research Productivity and Teaching Effectiveness, *Research in Higher Education*, Vol 18, Iss 2, pp 379-389.

Kane, R., Sandretto, S., and Heath, C. (2004) An investigation into excellent tertiary teaching: Emphasising reflective practice, *Higher Education*, Vol 47, Number 3, pp 283-310.

Appendix Two - Copy of Web-based Questionnaire

The Relationships Between Teaching, Research, Scholarship & Consultancy

1. Welcome

This web-based questionnaire (which can be read by screen readers) forms part of a wider study to investigate perceptions, experiences, observations, attitudes and values staff have with regards the relationship(s) between teaching, research, scholarship, and consultancy in the teaching of taught postgraduate programmes of study in IS/IM. These relationships are usually associated with the process of enriching teaching by including aspects of an academic's research, or that of colleagues, or consultancy, and other scholarship activities. Typically, this questionnaire takes between **15 and 20 minutes** to complete and I would be grateful if you could spare the time to complete the questionnaire. Any question with an **asterix (*)** preceding it must be answered, before moving on. It is hoped that the results will be used to frame a set of recommendations, which will help to inform the IS/IM academic community of practice.

2. Research Ethics

The information you provide will be treated in strict confidence. The results will be held and accessed by Kevin Grant only. The results will be held in an SPSS worksheet, and anonymity of all respondents will be guaranteed.

Any metadata that has been collected about participants, without their knowledge through cgi scripts, Java applets and user log files, will be encrypted then deleted from the server every day.

The responses entered here are on an encrypted secure line.

3. Thank You

By way of thanking participants for completing the questionnaire, a modest incentive of 4 separate £25 book tokens will be awarded to one lucky participant randomly drawn by Dr David Edgar, Head of Department of Business Information Management, Glasgow Caledonian University on Friday the 3rd of September 2004. The winner will be contacted by e-mail.

If you wish to be considered for the book tokens, then please e-mail kevin.grant@gcal.ac.uk

Please direct any queries you may have to Kevin Grant at kevin.grant@gcal.ac.uk

4. Definitions

In order to contextualise the questionnaire and to attempt to clarify certain key terms, the following four terms have been defined in the text boxes on the following pages.

1. Research
2. Teaching
3. Scholarship
4. Consultancy

However, if you disagree with any of these statements, then please use the space provided to comment upon each of the statements given. Some comments explaining why you consider these definition(s) to be inappropriate would be very helpful.

5. Meaning of Terms

1. Research is a means of generating, testing and validating new knowledge and re-evaluating old knowledge, typically through conceptual work or through data gathering techniques such as observation, surveys, interviews, policy document analysis, etc.

2. Teaching is the process of facilitating students' learning of existing knowledge, via face-to-face teaching, on and off campus, distance teaching, blended teaching, and on-line teaching systems, etc.

6. Views on The Terms Continued

3. Scholarship is the process that seeks to identify, interpret, draw together, and bring new insights to other people's original research with regards current and emerging thinking, with regards personal development of skills, expertise and knowledge.

4. Consultancy involves an academic applying existing knowledge to an agency, where the problem situation is usually client specified, in order to solve or diagnose a problem[s] e.g.: day-to-day problems, longer term strategic issues, etc.

7. Part One – General Information

* 5. What Gender Are You?

Female

Male

* 6. What Is Your Current Level Of Academic Appointment?

PhD Student

Lecturer

Senior Lecturer

Principal Lecturer

Reader / Professor

Teaching Fellow / Research Fellow

University Management (i.e., HOD, Dean, etc)

Other (please specify)

	▲
	▼

7. What Is Your Highest Level Academic Qualification?

HNC /HND

Degree

Masters
Degree

Doctorate

8. General Information Continued

8. Do You Have A Professional Qualification Related To Information Systems/Information Management? (e.g.; MBCS, etc)

Yes

No

9. What Is Your Current Employment Status?

Full Time
Appointment

Part Time
Appointment

Short Term
Appointment
(i.e., less than
three years)

9. General Information Continued

10. Which Category Best Illustrates The 'Home' Of Your Department/School/Division?

Business	Science / Engineering / Computing	Social Sciences	Medicine	Arts / Divinity
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** 11. How Would You Describe Your University/Higher Education Institution?**

An Ancient University	A Modern [Redbrick] University	A New (Post 1992) University	A University College / A Higher Education Institution
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Thinking About Your Professional Practice

*** 12. Looking Back Over The Last 12 Months, Expressed As A Percentage How Much Time Did You Spend On The Following? (Please exclude holidays)**

- Research
- Consultancy
- Teaching
- Scholarship
- Other Duties (administration, management, etc.)

*** 13. What Would You See As Your Main Professional Activities?**

- Primarily In Research
- Primarily In Consultancy
- Primarily In Teaching
- Equally Between Teaching And Research
- Equally Between Teaching And Consultancy
- Equally Between Research And Consultancy
- In All Three, But Leaning Towards Research
- In All Three, But Leaning Towards Teaching
- In All Three, But Leaning Towards Consultancy
- Academic Administration
- Other (please specify)

11. GENERAL INFORMATION - TEACHING SUBSECTION

Just A Little Reminder - Teaching is the process of facilitating students' learning of existing knowledge, via face-to-face teaching, developed student focused learning material, etc.

*** 14. What Are Your Main Teaching Areas? (Please tick as many as appropriate)**

- a) Theoretical underpinnings of information systems
- b) Information in and for organisational decision making
- c) Integration of information systems with organisational strategy and development (SISP)
- d) Information systems analysis & design
- e) Development, implementation and maintenance of information systems
- f) Information and communication technologies (ICTs)
- g) Management of information systems and services
- h) Organisational and social effects of ICT-based information systems
- i) Economic effects of ICT-based information systems
- j) Electronic Business / Electronic Commerce
- k) Knowledge Management
- l) Research Methods
- m) Practical Software Applications (Word, Excel, Multimedia, etc)
- n) Electronic Learning
- Other (please specify)

12. General Information - Teaching Subsection Continued

*** 15. How Many Years Have You Been Teaching in Higher Education?**

<5	5 - 10	11 - 20	21+
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** 16. Over The Last Three Years, What Levels Have You Mainly Taught At (Please tick as many as appropriate)?**

Sub Degree	Undergraduate	Professional Courses	Post Graduate (Taught)	Post Graduate (Research Supervision)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*** 17. Over The Last Three Years, Have You Undertaken Any Teaching On Taught Post Graduate IS/IM Programmes Of Study?**

Yes	No
<input type="radio"/>	<input type="radio"/>

18. Have You Undergone Any Formal Teaching Programmes (i.e., Programme for University Teaching, PGCertTLTM, etc.)

Yes	No
<input type="radio"/>	<input type="radio"/>

*** 19. Are You An Accredited Member Of The Institute For Learning And Teaching (ILTHE) and / or the Higher Education Academy**

Yes	No
<input type="radio"/>	<input type="radio"/>

13. GENERAL INFORMATION – RESEARCH SUBSECTION

Just A Little Reminder - Research is a means of generating, testing and validating new knowledge, typically through data gathering techniques such as observation, surveys, interviews, policy document analysis, etc.

*** 20. What Are Your Main Research Areas (Please tick as many as appropriate)?**

- a) Not Applicable
- b) Theoretical underpinnings of information systems

- c) Information in and for organisational decision making
- d) Integration of information systems with organisational strategy and development (SISP)
- e) Information systems analysis & design
- f) Development, implementation and maintenance of information systems
- g) Information and communication technologies (ICTs)
- h) Management of information systems and services
- i) Organisational and social effects of ICT-based information systems
- j) Economic effects of ICT-based information systems
- k) Electronic Business / Electronic Commerce
- l) Knowledge Management
- m) Research Methods
- n) Electronic Learning
- o) Practical Software Applications (Word, Excel, Multimedia, etc)
- Other (please specify)

**14. GENERAL INFORMATION – RESEARCH SUBSECTION
CONTINUED**

*** 21. How Would You Describe Yourself?**

As An Active As A Non

Researcher In
IS/IM

Active
Researcher
IS/IM

15. Active Researchers Only Page

22. How Many Years Have You Been An Active Researcher In IS/IM?

<5

5 - 10

11 -20

21+

23. Did Your Institution Submit Your Work As Part Of The Last Research Assessment Exercise In 2001?

Yes

No

16. Active Only Researcher Page Continued

24. Under Which Unit of Assessment in the Last RAE (Research Assessment Exercise) Was Your Research Work Submitted?

Business & Management

Computer Science

Librarianship and Information Management

Other (please specify)

25. What Rating Did The Overall Unit Of Assessment Achieve?
(Please tick rating grade)

1

2

3b

3a

4

5

17. GENERAL INFORMATION - SCHOLARSHIP SUBSECTION

Just A Little Reminder - Scholarship seeks to identify, interpret, draw together, and bring new insights to other peoples' original research with regards current and emerging thinking.

*** 26. Would You Describe Yourself As Some Who Actively Engages In The Scholarship Of IS/IM?**

Yes

No

18. Actively Engages In Scholarship

*** 27. Would You Describe Yourself As Someone Who Actively Engages In The Learning And Teaching Scholarship For Teaching Of IS/IM?**

Yes

No

19. Actively Engages In Scholarship Continued

28. How Many Years Have You Been Actively Engaging in Scholarship?

<5

5 - 10

11 -20

21+

20. General Information Scholarship Continued

*** 29. What Are Your Scholarly Areas of Activity In (Please tick as many as appropriate)**

- a) Theoretical underpinnings of information systems
- b) Information in and for organisational decision making
- c) Integration of information systems with organisational strategy and development (SISP)
- d) Information systems analysis & design
- e) Development, implementation and maintenance of information systems
- f) Information and communication technologies (ICTs)
- g) Management of information systems and services
- h) Organisational and social effects of ICT-based information systems
- i) Economic effects of ICT-based information systems
- j) Electronic Business / Electronic Commerce
- k) Knowledge Management
- l) Research Methods
- m) Practical Software Applications (Word, Excel, Multimedia, etc)
- n) Teaching of IS/IM
- o) Assessing IS/IM

p) Electronic Learning

Other (please specify)

21. GENERAL INFORMATION – CONSULTANCY SUBSECTION

Just A Little Reminder - Consultancy involves an academic applying existing knowledge to an agency, which usually commissions the work, to solve problem[s] e.g.: day-to-day problems, longer term strategic issues, etc.

*** 30. By Looking Back At The Last Three Years, Have You Actively Engaged In Consultancy Activities In IS/IM?**

Yes

No

22. Engaged In Consultancy Activities

*** 31. What Was The Overall Income Of The Consultancy Activities (In Pounds (£) Stirling)**

1 – 15,000

15,001 – 45,000

100,001 - 200,000

Other (please specify)

*** 32. In What Areas Do You Consult In? (Please enter your responses)**



23. PART TWO: LOOKING AT THE RELATIONSHIPS

Now We Are Going To Look At Your Thoughts To Do With Teaching, Research, Scholarship, And Consultancy Activities With Regards Your Professional Practice.

*** 33. Taking Your Professional Academic Outputs With Regards Teaching, Research, And Consultancy, over the last three years, which of the following have you had responsibility for? (Please indicate Yes or No).**

	Yes	No
a) Journal Papers / Book Chapters on Learning & Teaching	<input type="radio"/>	<input type="radio"/>
b) Conference Papers on Learning & Teaching	<input type="radio"/>	<input type="radio"/>
c) Academic Books on Learning & Teaching	<input type="radio"/>	<input type="radio"/>
d) Developed Teaching and Learning Case Studies	<input type="radio"/>	<input type="radio"/>

e) Published Learning and Teaching Material (i.e., open learning packs, E Learning Sites, etc)	<input type="radio"/>	<input type="radio"/>
f) Journal Papers / Book Chapters on IS/IM topics	<input type="radio"/>	<input type="radio"/>
g) Conference Papers on IS/IM topics	<input type="radio"/>	<input type="radio"/>
h) Academic Books on IS/IM	<input type="radio"/>	<input type="radio"/>
i) Text Books on IS/IM	<input type="radio"/>	<input type="radio"/>
j) Reviewed Research Proposals for funding agencies	<input type="radio"/>	<input type="radio"/>
k) Current Doctorate Level Research Supervisions	<input type="radio"/>	<input type="radio"/>
l) Doctorate Level Research Supervisions Completed	<input type="radio"/>	<input type="radio"/>
m) Supervising Teaching Company Scheme	<input type="radio"/>	<input type="radio"/>
n) Contributions to professional newsletters/trade newspapers, etc (like Computer Weekly)	<input type="radio"/>	<input type="radio"/>
o) Executive/Senior Management Briefing Sessions	<input type="radio"/>	<input type="radio"/>
p) Patents	<input type="radio"/>	<input type="radio"/>
q) Software/Hardware	<input type="radio"/>	<input type="radio"/>

Applications/Developments Created

r) Reports To/For Professional Bodies

24. PART THREE: VIEWS ABOUT THE RELATIONSHIPS

NOW WE ARE GOING TO LOOK AT YOUR PERCEPTIONS, EXPERIENCES, OBSERVATIONS, AND ATTITUDES WITH REGARDS THE RELATIONSHIP BETWEEN TEACHING, RESEARCH, SCHOLARSHIP, AND CONSULTANCY **Just a little reminder from earlier;**

Research

Is a means of generating, testing and validating new knowledge, typically through data gathering techniques such as observation, surveys, interviews, policy document analysis, etc.

Teaching

Is the process of facilitating students' learning of existing knowledge, via face-to-face teaching, developed student focused learning material, etc.

Scholarship

Seeks to identify, interpret, draw together, and bring new insights to other peoples' original research with regards current and emerging thinking.

Consultancy

Involves an academic applying existing knowledge to an agency, which usually commissions the work, to solve problem[s] e.g.: day-to-day problems, longer term strategic issues, etc.

25. Valued / Should Be Valued

The Following Questions Concern Your Own Perceptions Rather Than The Official Policy Of Your University, Which May Or May Not Be The Same. Please Indicate The Extent To Which You Think Each Item In The Following Pages Is Valued And Should Be Valued: Please Tick One Criterion For Valued And One Criterion For Should Be Valued.

*** 34. Please Indicate The Extent To Which You Think The Following Is Valued?**

	Too Much	About Right	Too Little	Don't Know
(a) Teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1. In your department or School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. By the IS/IM profession as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. By the HE Sector as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1. In your department or School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. By the IS/IM profession as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. By the HE Sector as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Scholarship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1. In your department or School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. By the IS/IM profession as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. By the HE Sector as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Consultancy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1. In your department or School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. By the IS/IM profession as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. By the HE Sector as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. Should Be Valued

*** 35. Please Indicate The Extent To Which You Think The Following *Should Be Valued*?**

	A Lot	A Little	Not A Lot
(a) Teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1. In your department or School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. By the IS/IM profession as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. By the HE Sector as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1. In your department or School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. By the IS/IM profession as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. By the HE Sector as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Scholarship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1. In your department or School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. By the IS/IM profession as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. By the HE Sector as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Consultancy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1. In your department or	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

School			
2. By the IS/IM profession as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. By the HE Sector as a whole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. Part Three Continued

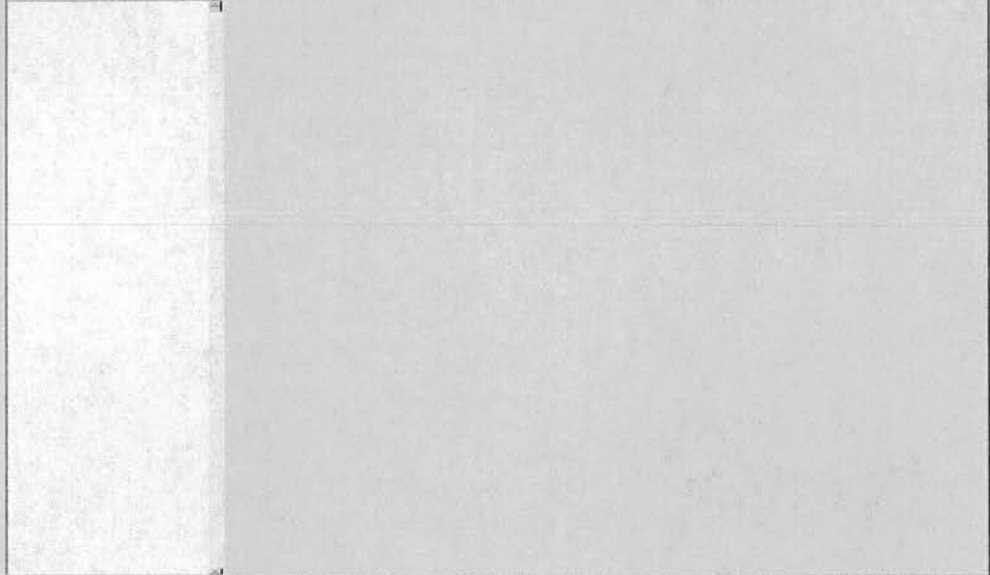
*** 36. Now We Are Going To Focus On Your Attitudes, Observations And Experiences With Regards How You Inform Your Teaching Of A Taught IS/IM Postgraduate Module.**

	A Lot	A Little	Not Much
I use my own research work to teach the module (i.e., journal, conference papers, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use case studies developed from my research activities to teach the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I invite research colleagues to teach parts or all of the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use my own commercial consultancy experiences to give examples in class to teach the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use other peoples' commercial consultancy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

experiences to give examples in class to teach the module			
I use case studies developed from my own consultancy experiences to teach the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I invite consultants to deliver guest lectures on the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use case studies developed from other peoples' consultancy activities to teach the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I invite professional practitioners to deliver guest lectures on the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use my knowledge and understanding of others' work to teach the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use my own teaching experiences to inform what I teach on the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use the experiences of others to inform what to teach on the module	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use other teaching resources to support the module, that I am aware of, i.e., web sites, company reports, etc	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My Own General Experiences of Life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. Extra Information

37. If You Wish To Add Any Other Activities/Methods You Use To Inform Your Teaching, Then Please Use The Space Provided.



29. The Final Question

If You Wish To Add Anything Further Regarding This Questionnaire, Then Please Use The Space Provided

30. Questionnaire Administration

If You Would Like To See A Summary Of The Results/Responses?
Then Please Use The Following “Hot Link”

<http://www.surveymonkey.com/Report.asp?U=49309071744>

If you would like to be entered into the prize drawn for the book tokens, then please email Kevin Grant on kevin.grant@gcal.ac.uk

31. Thank You

I would like to thank you for taking the time to complete this questionnaire. Your responses are valuable to me and I hope will inform our community of practice, future thinking and professional activities with regards the nexus between teaching, research, scholarship and consultancy.

Appendix Three - Designing Web Questionnaires – ‘Best Practice’ Guidelines

Material taken from teaching material for dynamic and static web site design and construction at GCU, module leader.

Accessibility & Availability

The web-based questionnaire, complies with the Disability Discrimination Act 1996 and more importantly, part three of the Act, which came into enforce January 2004, as all standard screen readers can access the web pages, as they have not been designed in tables. In addition, respondents can visit the web site at their leisure, and return to the web-based questions when they want, if they do not finish completing in the first sitting.

Interface Design

Proximity (nearness) is about grouping items together physically, so that their semantic or functional closeness is reflected in the visual layout. In this way the user will perceive their connectedness at a glance. When several items are reorganised this way, they become one visual unit. The display appears more organised, including the 'space'.

Alignment

Items should not be placed arbitrarily on a page, or screen. The eye is very sensitive to vertical or horizontal misalignment. Alignment tools are available in every drawing package or GUI (Graphical User Interface) development environment. Alignment contributes to cohesion, organisation, and aesthetics. Although items may have been separated following the proximity principle, still alignment between the groups can give a sense of oneness to the display.

Repetition

The principle of repetition is about creating coherence (consistent look and feel) through the repetition of design elements. The repetitive element may be a particular font, colour, bullet style, and graphical motif: anything that the reader will instantly recognise.

Contrast

The eye likes contrast. To be effective, contrast must be strong. It's no use varying parameters like line width, font size or colour just a little bit: this may be missed, or worse be interpreted as a mistake. The principle of contrast is all about being bold in your design and getting your work noticed. Review the screens above and notice how effective strong contrast can be.

Contrast is another way to aid organisation and hence usability. It can be created in many ways. Contrasting font style *and* font size, contrasting textures (smooth with

rough), colours (warm with cool), horizontal and vertical elements, small with large graphics, all these are ways of doing it.

Norming & Conventions

This is design to 'normalise' the aesthetics of the web pages to the UK. For example, the forward and backward navigation confirm to the standard convention for the UK, i.e., >> or <<. Convenience is achieved in three ways (i) that the respondent can leave the web site and re-enter when they wish and they will automatically be taken to the place they were, until the respondent has completed the questionnaire; (ii) that exit appears on the top right of the screen, which is cultural and social universal design consideration; (iii) appropriate reminders were integrated into the documentation of the web site.

Testing & Functionality

The initial web-based questionnaire was tested by the researcher and the family of the researcher prior to sending the url to the pilot sample. In addition to this, conditional logic loops were incorporated thus, (depending on the respondents answers) certain questions were automatically skipped, thus reducing frustration levels of the respondent.

Construction

The questionnaire included a mix of closed and open-ended questions. Open-ended questions were particularly useful because they allow expression of personal views and it allowed the respondent to explain the reasons underlying a particular choice.

Appendix Four - Pilot Sample Justification of Web Based Questionnaire

BIM staff were selected as being a good population to perform the pilot test for the following reasons.

- Historically GCU was predominantly a teaching focused polytechnic and latterly a University, therefore one of the core competencies of GCU and BIM was teaching;
- However, over the last 7 years, a major investment with regards staff and infrastructure has occurred with research and scholarly activity. Currently, GCU and especially the Caledonian Business School, are seeking to build on their 3A RAE rating in 2001 for business and management (were 1 members of BIM staff submitted under) to obtain a 5 in the next RAE2008 round, with around 50% of BIM staff submitting). Thus capturing the growth and awareness of research with an IS division;
- Finally, GCU now has a new corporate vision to become an Entrepreneurial University by the year 2015, which has at its core knowledge transfer from the academy to industry and commerce. Over the last 15 years BIM has a proven record of accomplishment of applied commercial work, in the form of consultancy to the value of £3,000,000, thus capturing some of the staff views and experiences with regards consultancy activities.

Pilot sample – key snapshots to adequacy of representation to the wider UKAIS membership population

Gender Female 40% Male 60%	Post Lecturer 50% Senior Lecturer 30% PhD Student 10% HOD 10%	Highest Qualification Degree 20% Masters 40% Doctorate 40%	Length (Years) In IS/IM Teaching <5 - 11.1% 5-10 - 22.2% 11- 0 - 44.4% % 21+ - 22.2%	Level of Teaching Experience U/G - 77.8% P/G - 88.9% Prof - 33.3% Supervision (PG) 100%
Current Level of PG Teaching Experience P/G - 55.6%	Undertaken Formal Teaching Programmes Yes - 44.4% No - 55.6%	Description of Research Active Research Active - 44.4% Non Research Active - 55.6%	Member of the ILTHE Yes - 33.3% No - 66.7%	Description of Scholarship Active (Discipline) Scholarly Active - 66.7% Not Scholarly Active - 33.3%

Description of Scholarship Active (Learning & Teaching)	Focus Of Professional Activities Primarily In Research - 11.1% Primarily In Consultancy - 0% Primarily In Teaching - 22.2% Equally Between Teaching And Research - 33.3%
Scholarly Active – 50%	Equally Between Teaching And Consultancy - 0% Equally Between Research And Consultancy - 0%
Not Scholarly Active – 50%	In All Three, But Leaning Towards Research - 0% In All Three, But Leaning Towards Teaching - 22.2% In All Three, But Leaning Towards Consultancy - 0%
Average % Time Spent on Professional Duties	
Research - 21.89%	
Consultancy - 0.83%	
Teaching - 40.20%	
Scholarship - 15.89%	
Other Duties (administration, management, etc) - 25.30%	
Miscellaneous	
All Full Time	
All Within A New University	
Only One Person Submitted in the last RAE	
Only One Person (within the last three years) has been active in consultancy to the maximum sum of £15,000	
Only One Person Has a Professional IS/IM Qualification	

All responses to questions appeared fit for purpose to achieve the aim of the thesis.

List of modifications and actions arising from pilot study

Issues Identified	Actions
<i>Question 12</i> Unclear – did the time allocation spent of professional duties include or exclude holiday periods	Reworded and parameter now evident
<i>Question 14</i> Missing Teaching Areas Identified	Added in Extra Stems (Practical IS Applications, etc)
<i>Question 20</i> Missing Research Areas Identified	Added in Extra Stems (Practical IS Applications, E Learning, etc)
<i>Question 29</i> Missing Scholarship Areas Identified	Added in Extra Stems (Practical IS Applications, E Learning, etc)
<i>Question 34</i> Some Issues Respondents Did Not Know The Answer	Extra stem option added in entitled ‘Don’t Know’
<i>Question 36</i> Missing Category regarding what informs teaching practice	Added in Extra Stem entitled – general life experiences
<i>Question 6</i> Missing Categories of post	Added in Extra Stems (PhD Student, Academic Management, i.e., HOD, Dean,

	etc)
<i>Question 9</i> Unclear – what a short term contact meant	Reworded and parameter now evident
<i>Section 2 & 3</i> General Typos and Grammatical Errors Picked up, e.g.; Encyrtd, Award;	Typos Fixed Grammar Modified Were Appropriate Layout Was Made Consistent
<i>Section 3</i> Unclear what 4 X £25 meant	Reworded and made more explicit
<i>Section 5</i> Teaching Definition	Modified to include on and off campus forms of teaching
<i>Section 5</i> Consultancy Definition	Modified to include problem diagnostic and client specified area of engagement
<i>Section 5</i> Scholarship Definition	Modified to make it more process of engagement with an element of personal development
<i>Section 5</i> Research Definition	Modified to include (re)evaluating existing knowledge and the idea that research can be conceptual
<i>General Issue One</i> Issue of ‘bona fides’	GCU logo will appear in the header and the covering e-mail
<i>General Issue Two</i> Issue of Accessibility	Checked, web questionnaire appropriate under the disabilities Act and information given about screen reader’s accessibility. Questionnaire Disabled Friendly

Appendix Five - Interview Question Construction – Guidelines

When designing the interviewee questions, the following was used to guide the effective question construction to illicit views, experiences and attitudes interviewees had regarding the nexes between teaching, research, scholarship and consultancy.

Ask clear questions

Cicourel (1964) reflects that many of the meanings, which are clear to one, will be relatively opaque to the other, even when the intention is genuine communication. Accordingly, it is important to use words that make sense to the interviewees, words that are sensitive to the respondent's context and worldview. To enhance their comprehensibility to the interviewees, questions should be easy to understand, short, and devoid of jargon (Kvale 1996).

Ask single questions

Patton (1987) points out that interviewers often put several questions together and ask them all as one. Patton, suggests that researchers should ask one thing at a time.

Ask truly open-ended questions (Patton 1987)

Truly open-ended questions do not pre-determine the answers and allow room for the informants to respond in their own terms.

Ask experience/behaviour questions before opinion/feeling questions (Patton 1987)

It is useful to ask questions about experience or behaviour before asking questions about opinions or feelings as this helps establish a context for the informants to express the latter.

Sequence the questions (Patton, 1994)

This refers to using a special kind of questioning technique called 'Funnelling', which means asking from general to specific, from broad to narrow. Since the nexes between teaching, research, scholarship and consultancy carries a degree of emotion surrounding it, questions were asked in the following way; factual questions were interwoven with opinion questions and questions to do with the interviewee's experiences surrounding the area.

Probe and follow-up questions (Patton 1987)

The purpose of probing is to deepen the response to a question, to increase the richness of the data being obtained, and to give cues to the interviewee about the level of response that is desired. The follow questioning strategy was used for each theme being explored. An open question was asked, then probing question, then an additional probing question, then finally a closed question ensuring that the researcher has interpreted, understood the essence of each interviewees answer correctly, i.e., 'Is

it correct that you feel that.....?" or "I am correct in saying that you think there is a nexus between teaching and research".

Establish rapport

This can be achieved by, for example, respecting the informants' opinions, supporting their feelings, or recognising their responses. In addition, Kvale (1996) suggests that a good contact is established by attentive listening, with the interviewer showing interest, understanding, and respect for what the subjects say. Finally, the idea of linking ideas and issues together was used by the researcher to illustrate what the interviewee had said with regards the answers to the interview questions, by way of exploring answers in a more holistic way.

References

Cicourel, A. U., (1964) *Method and Measurement in Sociology*, Free Press, New York.

Kvale, S., (1996) *Interviews: An Introduction to Qualitative Research Interviewing*, Sage Publications, London.

Patton, M. Q., (1987) *How to Use Qualitative Methods in Evaluation*, Sage Publications, California.