

# INTERDISCIPLINARITY AND (DIS)INTEGRATION IN POSTGRADUATE, APPLIED DISCIPLINARY CURRICULA

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## ABSTRACT

Interdisciplinarity is widely claimed as a core feature of, and rationale for, the development of postgraduate programmes in applied disciplinary fields. While there is considerable debate about the nature of interdisciplinarity, less consideration is given to the concept of curriculum and what 'being interdisciplinary' implies for the selection and organisation of knowledge in a curriculum aspiring to some level of interdisciplinarity. Drawing on sociological analyses of curriculum this article explores Bernstein's concepts of integrated-type curricula and recontextualisation and uses these concepts to explore the complexities of attempting to use interdisciplinarity as an integrating logic in a Public Management curriculum. Findings from the analysis of documentary and interview data highlight how interdisciplinarity was difficult to develop and sustain as a curriculum integrating logic over time. Without a strong consensus about the integrating interdisciplinary idea and the knowledge that underpinned it, relationships between the relational idea and curriculum content became increasingly implicit, individually interpreted and disabling for a shared sense of purpose and progression across the degree. Development of programmes that call themselves interdisciplinary requires an understanding of curriculum as selection and organisation of knowledge from within disciplines and, in the case of applied disciplinary fields, from workplace practice.

**Key words:** curriculum, interdisciplinarity, public management, recontextualisation, postgraduate, public administration

## INTRODUCTION

Interdisciplinarity is claimed as a rationale for, and core feature of, growing numbers of programmes in postgraduate degrees in many countries that are aimed at students who work in a range of professions and applied disciplinary fields. Interdisciplinarity offers academic programme developers ways of signalling the relevance of their programmes to the academy, employers and students. However, the move from championing interdisciplinarity (as a legitimating *discourse*) and realising it in *practice* in a curriculum involves extensive engagement with curriculum and knowledge.

In this article the focus of analysis is the curriculum development of a Master's degree in Public Management in which the curriculum developers attempted to use an interdisciplinary logic and encountered difficulties in doing so. One of the findings of the study discussed in this article is that lack of attention to interdisciplinarity as practiced in curriculum makes it difficult to design and implement programmes that aspire to be interdisciplinary. I explore what happens when curriculum developers try to draw on interdisciplinarity as an integrating curriculum logic within a particular curriculum. What do they do and does what they do work to achieve some level of integration and common sense of purpose for staff and students? What can we learn from their attempts that may inform other aspirant interdisciplinary programmes? I refer to 'interdisciplinary' in the way it was used by the programme developers for whom it signalled interrelationships between disciplines (Jacobs and Frickel 2009) rather than according to various other nomenclatures that have been proposed. Interdisciplinarity and its variants (for example, transdisciplinarity, multidisciplinary) are distinguished by variation in relation to the extent to which disciplines are interconnected and transformed into new intellectual configurations (Klein 2010, 17–20). While definitions differ multidisciplinary is generally understood as using or juxtaposing disciplines in ways where they may inform each other but they remain separate and their identity and knowledge structures are not 'unsettled'. Interdisciplinarity involves proactive interaction and integration of disciplines (Klein 2010) in various ways and with different outcomes. This nomenclature influences the organisation of programmes and the knowledge they draw on although these differences and the assumptions they make about knowledge and integration are not always explicitly made by the programme developers themselves.

## **DISCOURSES OF INTERDISCIPLINARITY AND INTERDISCIPLINARITY IN CURRICULUM**

Interdisciplinarity is invoked by a range of stakeholders within and outside universities in support of changes that are seen as innovative. At the end of the 1960s and in the 1970s 'interdisciplinarity' was seen as a panacea for educational reform at a time where planning and technology development were economic priorities (Weingart and Stehr 2000) and was most visibly reflected in the Organisation for Economic Co-operation and Development's (OECD) attempts to create a common terminology (Apostel, Berger and Michaud 1972; Levin and Lind 1985). Radical political and social groupings of the time used the space to develop new areas of study (for example, women's studies and environmental studies). More recently interdisciplinary or transdisciplinary projects have drawn on arguments that global

trends in the production and dissemination of knowledge are moving universities away from 'Mode 1' science (associated with knowledge production in the disciplines) towards 'Mode 2' problem-centred, transdisciplinary science which is changing the nature of knowledge production (Gibbons et al. 1994) and is oriented to economic productivity.

There are two dominant discourses of interdisciplinarity that reflect different approaches to disciplines. One views interdisciplinarity as 'old news' (Abbott 2001, 131) or 'routine-interdisciplinarity' (Moore 2011, 89) taking place as a normal part of sub-divisions and developments within and between disciplines (Abbott 2001) and resulting in principled and 'disciplined' redrawing of disciplinary boundaries. The other, referred to as 'hyperdisciplinarity' (Moore 2011), views disciplines as obstacles to flows of knowledge, as defending social interests and as able to be reconstructed under new historical conditions (Moore 2011, 88) or marshalled to either achieve a particular pedagogic end or a particular notion of relevance to markets (Muller 2011). Educational initiatives framed within a discourse of hyperdisciplinarity may end up producing knowledge with limited general application to meet short-term objectives of practical relevance (Barrett 2012).

Much of the discussion on what 'doing interdisciplinarity' means in literature focuses on academic interdisciplinary research and what happens in terms of synthesis, production of knowledge, collaboration and communication in interdisciplinary research teams, units or projects (see for example Mansilla 2006). The approaches researchers take and their interdisciplinary practices in the production of interdisciplinary knowledge or products are then often extrapolated to university education. International research on teaching and learning in interdisciplinary higher education has focused on identifying potential frameworks, best practices and essential conditions for success (Spelt et al. 2009). In the South African context much of the focus on interdisciplinarity and curriculum has occurred in relation to policy discussions (for example Ensor 2004; Moore 2003) and there has been limited empirical examination of teaching and curriculum in relation to programmes calling themselves interdisciplinary (Winberg et al. 2011 being an exception).

How curriculum developers and lecturers perceive disciplinary knowledge influences how they select and apply knowledge in their teaching. Interdisciplinary programme initiatives framed within hyperdisciplinary discourses may not engage with the studies on interdisciplinary education. In particular, they may not address how these studies reflect the importance of disciplinary knowledge for interdisciplinary education (Mansilla and Duraising 2007).

## **CURRICULUM DEVELOPMENT IN A CONTEXT OF CHALLENGES TO BOUNDARIES**

The curriculum that I examine in this article was designed as part of a challenge to the disciplinary field of public administration<sup>1</sup> in South Africa and was also a reflection of challenges to, and ambivalence towards, various social, political and epistemic *boundaries* related to education, curriculum, social organisation and knowledge in a post-apartheid context. The curriculum reflected challenges to the organisational form of the South African public sector (from *bureaucracy* to *post-bureaucracy*), different approaches to pedagogy (from *traditionalism* to *progressivism*), different selections of appropriate knowledge and knowledge forms for social progress (from *disciplinarity* to *multi/interdisciplinarity*) and for movement from a dominance of theoretical knowledge to practical knowledge (McLennan 1992).

The global rise of new public management, the ‘reinventing government’ (Osbourne and Gaebler 1992) movement in public administration and the resulting challenges to the global disciplinary field of public administration happened at a time where there were challenges to the South African disciplinary field and its connections to the apartheid past. Curriculum developers used the development of a new teaching programme as a platform for orienting the field in South Africa towards public management (Cameron and Milne 2009) raising the status of ‘management’ within the local disciplinary field of public administration.

Some argue that public administration is best conceived of as an ‘interdisciplinary field’ (Raadschelders 2011; Gasper 2000) working at the intersection of disciplines and demands from the field of practice to address practical problems. Academics who teach and research within it are from a range of undergraduate disciplines (economics, statistics, social sciences), from other disciplinary fields (public administration, development studies) and from various professions (law, teaching, nursing and engineering). Public administration is not a traditional profession with structures controlling licensure, codes of ethics and entry conditions, nor is it a profession in Abbot’s preferred sense of ‘exclusive occupational group[s] applying somewhat abstract knowledge to particular cases’ (Abbott 1988, 8). However, a key purpose of the teaching programme was to contribute to the formation of professional identity. The curriculum was designed as a post-experience, ‘conversion-type’ (Davies 2009) or non-cognate master’s degree (or a pathway to a new career or job specialisation different from previous studies) with both coursework and minor research components. Entrance requirements were a generic undergraduate degree with no specific disciplinary pre-requisites. Conversion-type postgraduate qualifications present particular challenges for curriculum

development due to students being admitted to postgraduate level studies without requiring common disciplinary bases, a foundation in the new area of study or work experience in the new area of study.

## **INTERDISCIPLINARITY IN CURRICULUM IN APPLIED DISCIPLINARY FIELDS**

Curriculum as a concept distinct from programme competencies or outcomes is not one that is widely engaged with in developing programmes in higher education in general and in public administration in particular. Perspectives on curriculum from sociology of education are instructive for understanding the implications of interdisciplinarity for a curriculum. The concept of curriculum adopted in this study is one in which the structuring influences of the broader social, political and economic context are embedded in the principles by which contents (selections of knowledge for transmission) are selected to fill particular periods of instructional time (Bernstein 1975, 80). Curriculum is about the selection of knowledge for transmission and developing a curriculum requires an understanding of Bernstein's *pedagogic device*. The pedagogic device consists of three fields: *production* (of knowledge); *recontextualisation* (conversion into educational knowledge); and *reproduction* (pedagogy and evaluation) (Bernstein 1990). Developing a curriculum involves recontextualising knowledge, or selecting knowledge from its original context of production (disciplines), and organising it in a form to be transmitted through teaching (Bernstein 2000).

Bernstein mainly used the concept of recontextualisation to understand the relationships between disciplines and curricula in schools but the concept has also been used in vocational (Barnett 2006) and professional fields (Guile 2014) where knowledge from work also has to enter the mix. What is key for the argument in this article is understanding the transformations that take place in recontextualising knowledge in applied disciplinary fields. In vocational curricula knowledge is selected from various disciplines and is 'restructured' with reference to technological and organisational problems related to vocational work. This is then further recontextualised or converted into educational knowledge (Barnett 2006) and reflected in the form of approved curriculum outlines or syllabus descriptions. Employing a different, but related, notion of recontextualisation as social practice, Guile describes the development of professional curricula where selected concepts from forms of knowledge (e.g. disciplines, the field of practice, technologies associated with the field and legislative and regulatory context 'commingle' with professional knowledge which is generated in a normative context where both conceptual and empirical claims are judged for their relevance to practice. These are combined in a curriculum for supporting the formation of professionals (Guile 2014, 89)

under the influence of professional and regulatory bodies.

Bernstein's work also involved theorising different curriculum types and the educational 'codes' that underpin them. In this work an integrated-type curriculum is explicitly contrasted with a collection-type curriculum, the latter being associated with a formative, undergraduate degree structure where a curriculum is comprised of subjects or disciplines that are distinct and strongly insulated from each other (e.g. politics, sociology, economics or physics). The ideal type construct of an integrated curriculum is a curriculum that employs some relational idea or concept, that is not based on the logics of the separate disciplines that inform the curriculum, to hold its contents together (Bernstein 1975, 83). An integrated-type curriculum has to develop and define a shared integrating idea or discourse hold together the recontextualised components from a number of disciplines in order for shared aims and objectives in teaching to be maintained over time. In Bernstein's terms, for an integrated curriculum to 'work' (i.e. for staff and students to have a common 'sense of place, time or purpose' (Bernstein 1975, 84)) and for it to provide shared clarity about selection, sequencing, pacing and assessment of curriculum contents, several conditions may have to be met.

According to Bernstein for 'integration' to occur an integrated curriculum needs an integrating logic that is explicit and shared by curriculum developers and by those teaching the curriculum. This integrating logic needs to be translated into principles that guide the integration of its various contents in a principled way to provide clarity around assessment practices and criteria – particularly as evaluation criteria are likely to be multiple and less explicit than those associated with a collection-type curriculum. Either an explicit, closed, shared ideology or a strong staff social network (or both) may be needed to maintain organisational cohesion and coherence. Studies in South Africa and elsewhere have examined how academics across disciplines (and disciplinary sub-fields) have been brought together in relation to specific programme development projects, and the difficulties they have faced in establishing and maintaining this shared loyalty (see for example Moore 2000; Vorster 2011; Ryan and Neumann 2013). Bernstein's concept of interdisciplinarity is relevant to an integrated curriculum because it involves an opening up of relationships between two or more disciplines using particular concepts to explore a relational idea rather than a multidisciplinary or cross-disciplinarity logic involving contributions from two or more fields focused on a problem but not integrated (Bernstein 1975, 101–102). Crucially, Bernstein argues that the relational logics also have to be developed into a set of curriculum principles that can guide the development of each course or module so that there are explicit relationships between courses or subjects and the overarching logic. This is a complex endeavour when a

programme of study also has to engage with relationships to a field of practice, in the case of this study, that of government.

## METHODOLOGY

In this research, I applied a case study design within the qualitative tradition to study the development of a master's degree curriculum in the field of public management for public servants.<sup>2</sup> This case study can be seen as an *instrumental* case (Stake 2005) in that the case was chosen to provide insight into both a particular conceptual framework and a more general phenomenon (the attempt at developing an *integrated curriculum*).

The main sources of data used in this case study were documentary. These were supplemented by primary data in the form of a series of in depth, semi-structured interviews conducted with lecturers who taught on the degree during the period examined in the study (1993–2005). Documents were initially evaluated according to their credibility, authenticity and representativeness (Scott 1991) and as to whether they were comprehensible and clear to the researcher. The documentary data corpus consisted of all the available documents related to curriculum and teaching for the period reviewed. This data included a range of published (publically available) and unpublished (organisational) documents related to curriculum and course development, teaching, academic staffing, publicity, financing of courses, commissioned external reports, internal reviews and published sources. From this a data set was extracted that was used for analysis. My selection of this data set was guided by the conceptual categories and theoretical framework of this study. Specific data extracts or 'chunks of data' (Braun and Clarke 2006, 79) were mined for analysis. Archival documents, secondary published sources and personal field notes<sup>3</sup> enable a rich, historical and complex description of the development and implementation of the curriculum and the difficulties experienced in the process. A non-probability, purposeful (Patton 1990) interview sample was selected after the initial documentary analysis, and the primary purposes of the interviews were to seek clarification about issues raised in documentary sources and to seek feedback on emerging interpretations. The transcribed interviews assisted with explanations of patterns identified in the data, especially where these explanations were less well recorded or elaborated on in documentary data.

Data were analysed using thematic content analysis. Themes were identified both deductively and inductively, reflecting the use of both theory-driven and data-driven coding (Boyatzis 1998). Data were examined for how curriculum developers had attempted to construct an integrated type curriculum and on what basis they saw this curriculum as holding

together according to their own understandings and in their own terms. This drew my attention to several recurrent themes, only one of which is explored in this article namely, ‘interdisciplinarity or multidisciplinarity’. However, at another level of analysis, the selection of both topic and data was driven by a conceptual framework derived from the particular theoretical position, outlined in the previous section.

## USING AN INTERDISCIPLINARY LOGIC IN THE PUBLIC MANAGEMENT CURRICULUM

Analysis of the curriculum revealed that the designers attempted to find a multi- or interdisciplinary ‘glue’ to integrate content through the use of one or more of four possible approaches to achieving integration, each of which is captured in Table 1 and then examined.

**Table 1:** Examples of interdisciplinary integration approaches used in the Public Management master’s programme

Sub-fields of Public Management/ Administration	ID concepts methodologies, models or theories	Recontextualisation of disciplinary subjects	Products or tasks
Policy Development Management	Systems theory  Policy analytical frameworks (qualitative and quantitative)	Intracourse: Statistics recontextualised as <i>Information-gathering for the policy process</i> (drawing on Politics, Statistics)  Intercourse: In relation to a theme e.g. HIV/AIDS	Integration of theoretical and practical knowledge through an applied, problem-focused, research dissertation

Source: Generated by author

Firstly, the designers drew on two key focal areas of public administration, namely *management/administration* and *policy* and contextualised and focused them on government through, or informed by, the concept of *development*. It was intended that these focal areas (or disciplinary substitutes) and dialogues between them would be drawn on not only as the primary content of individual potentially integrative courses (for example *Policy Studies* and *Issues in Development*) but would also be drawn on across courses in debates about the meaning of the concepts and various theories, particularly as they related to ‘publicness’ and ‘development’ and the implications of these for a field with a public vocation. This approach echoed developments in the South African disciplinary field of public management more generally where it was argued that an explicit stance in relation to *public*, *development* and *management* was needed to prevent monopolisation of ‘management’ by private sector and economic thought, *public* being reduced to state and monied and *development* becoming a ‘neutral’ term for economic development (Gasper 2000). Syllabus descriptions reflected a

range of emphases without an explicit common curriculum stance in relation to these terms or an explicit mapping of their disciplinary understandings and multi- or inter-disciplinary points of connection and influence. Beyond the early stages of curriculum implementation, the relative importance and interpretations of *development*, *management* and the *public* (in public policy courses) were more influenced by the intellectual traditions and ideologies of individuals teaching in different courses.

Secondly, the designers drew selectively on propositional, conceptual and procedural knowledge from the various disciplines and disciplinary fields that inform public administration and recontextualised this knowledge in and across such courses specialisations as human resources management, leadership, organisational theory in relation to its relevance to the public sector of the time. Disciplines were drawn on eclectically for propositional knowledge to provide what were referred to as ‘paradigms’ or ‘frameworks’ for the business of government or critiques of approaches to governance and bureaucracy. The focus here was largely on integration *within* a particular recontextualised subject with integration across courses dependent on students either ‘integrating’ on their own (i.e. making (or not making) connections of increasing complexity) or on *ad hoc* collaboration between individual lecturers teaching different courses. An example is courses drawing on economics, development economics, statistics and politics working around the theme of HIV/AIDS for a period of time. In these cases lecturers selected elements of disciplinary insights from their own disciplinary histories which were brought together in relation to a single focus without interacting. Syllabus descriptions indicate that procedural knowledge was largely drawn from the legislative and regulatory requirements of the public sector workplace, from case studies used as exercises for simulating decision-making and from models and techniques developed for work. Work (or knowledge from professional practice) was mostly brought into the curriculum through pedagogic practices e.g. reflective learning practices and drawing on student’s personal and working experiences.

The third approach to integration was through the use of interdisciplinary concepts, frameworks or ‘theories’ that could potentially ‘bridge’ diverse disciplines and practical know-how. The two most visible contenders as cross-curricular interdisciplinary frameworks in this degree were *systems thinking* and *policy analysis*. Both have as their goal an attempt to overcome increasing specialisation in scientific thinking and to present ways of looking at issues and problems in generalist and holistic terms (Strijbos 2010; Miller 2010; Fleishman 1990). Systems thinking was taught as a methodology for managing and understanding complexity as a separate course and taken up in various ways in other courses for a period of

time. However, it was not strongly developed as a sustainable means of guiding the selection and sequencing of cross-course content, relied on individual championing and waned when the champions left. Likewise, policy analysis was drawn on as a framework for integrating knowledge about problems for action and was intended to provide students with analytic tools (predominantly quantitative drawing on economics, statistics and combining these with qualitative and normative focus on public value (drawing on social sciences)). However, over time the prevalence and visibility of policy as a relational idea and policy analysis as a methodology seemed to weaken. Firstly, the quantitative and analytic emphasis necessary for policy analysis of this type diminished in the curriculum, and its contents and complexity were gradually reduced as the curriculum shifted to accommodate the weak analytic and mathematical foundational base of many South African postgraduate students which limited what could be achieved in terms of policy analysis. This also limited possibilities for implementing policy analysis as an interdisciplinary methodology in the curriculum.

A fourth approach to integration was focused on the product of student research (the capstone requirement of the degree) and the identification of a researchable management or policy problem in which it was envisaged that theory and practice would be brought together in an applied, short dissertation. There was an assumption of a seamless transition from a critical, discursive orientation in coursework to a problem identification and focused research phase. It was further assumed that the (interdisciplinary or multidisciplinary) knowledge base students would draw on in relation to their own selected research topics could and would be sufficiently developed independently through literature reviews, and that sufficient methodological insight could be developed through a generic research methodology course. In practice this proved difficult to achieve both in terms of student throughput and in terms of the quality of the research product. Similar concerns have been expressed in relation to 'integration' between coursework and research in professional postgraduate programmes elsewhere (Pilcher 2011; German Millberg et al. 2011), particularly in relation to professional doctorates (Lovitts 2005; Manathunga, Smith and Bath 2004). It seems that 'scholarly' requirements gained ascendance in the research stage of these types of curricula where, as in this case, the goalposts shift, and the segmented knowledge base of the early part of the curriculum did not seem to assist an interdisciplinary epistemic logic of inquiry for conceptualising and conducting research focussed through either disciplinary or multidisciplinary lenses.

## **PRACTICAL AND CONCEPTUAL CHALLENGES OF CURRICULUM INTEGRATION**

In summary curriculum designers attempted to develop a curriculum through: eclectic combinations of content from disciplines linked by a set of sub-fields operating as disciplinary substitutes; aspirant integrating methodologies; and curriculum products (student research dissertations). However, the overarching relational idea (bridging concept or methodology) was not clear and sustained and the relationships between this idea and the concepts that were being co-ordinated was not clearly developed. Consequently, there was not a basis for explicitness about selection, sequencing, pacing of knowledge and clarity about assessment criteria on which evaluations of progress in learning rest.

I found little evidence at the level of curriculum of mapping or descriptions of the mutual interconnectedness of concepts across courses (although this may have occurred at some level in individual courses). Designers of an integrated curriculum assume that different interpretations of these concepts (ideological and perhaps disciplinary) will be explicitly mapped for comparison, contrast and exploration of integrative links so that lecturers and students can locate their understanding within a common frame of reference across courses. In practice, beyond the first few student cohorts this seems to have been left to students to do themselves without necessarily having a basis of foundational disciplinary induction into some, or any, of the disciplines informing the curriculum.

Although theories, frameworks or methods have the potential to play a linking role in interdisciplinary curricula (Pohl et al. 2008; Szostak 2003) in this case study the selection of these tended to be associated with the interests of individuals or small groups and the influence of this approach waned within individual courses and across the curriculum as key individuals left. Each new means of integration requires extensive work in relation to identifying sharing and pacing the knowledge to be co-ordinated if it is to be interdisciplinary. A requirement for a curriculum to 'work' at some interdisciplinary level is the identification and adoption of some form of bridging concept or theories (for example Sen's capabilities and entitlements analysis is suggested for this disciplinary field (Gasper 2010)). Models or frameworks that are potentially useful as methods of integration usually require identification of pre-requisite or concurrent underpinning knowledge and its co-ordinated acquisition across courses if there is to be some degree of rigour in the integration process. Some of the reasons that policy analysis as a potentially integrating methodology waned were lack of clarity about the required underpinning knowledge and how it was to be co-ordinated across the various

courses.

In common with formal curriculum approval processes in much of South African higher education there was a focus in officially approved programme documents on outcomes specifications with minimal specification of knowledge. Without attention to recontextualisation of knowledge from various disciplines in curriculum development processes, selections of disciplinary knowledge and attention to sequencing and pacing may only take place in individual courses unless a robust whole curriculum development process focused on the knowledge to be co-ordinated is structured and sustained. In practice in this programme there was greater attention to *pedagogy* in terms of teaching methodologies and learning approaches than to *curriculum* (as knowledge) with the result being overlap between courses (e.g. similar foci and concepts reoccurring in ways that were not structured as being reinforcing and expansive). In practice where cross-course communication happened it was between individuals around the production of shared tasks (usually assessment tasks) and revolved around co-ordinating disciplinary inputs in relation to themes.

Integration around interdisciplinary products such as student research dissertations present particular difficulties for these types of curricula. There was little clarity about relationships between the coursework and research components in terms of how they might begin to contribute to desired interdisciplinary imperatives. Although students often selected research topics requiring the insights of more than one discipline for both execution and analysis, it was difficult to do this in any minimally rigorous interdisciplinary way within the confines of one of the growing numbers of conversion-type, taught postgraduate degrees where the research component of the degree is not substantial and where students (and perhaps their supervisors) may now be working in disciplinary areas where they have little or no prior foundation. There seemed to be an assumption that the disciplinary knowledge necessary for problem formulation and analysis could be individually acquired as part of reviews of literature and/or that prior disciplinary foundations were not necessary because a broad, superficial, 'undisciplined' product was adequate. In practice there was a drift to selecting examiners who would either assess in terms of criteria relating to sometimes implicit generic 'graduate' or 'scholarly' competencies or, on equally implicit criteria of acceptable 'relevance to workplace practice', with considerable differences in assessment practices across examiners, particularly when examiners had specialist knowledge relating to the topic.

## CONCLUSION

The findings reported in this article raise wider issues about programmes in postgraduate

education that make claims to being interdisciplinary and that aim to achieve some level of interdisciplinarity in their teaching. In practical, epistemological and sociological terms, attempting to achieve interdisciplinarity in curriculum is not a simple endeavour, especially if such a curriculum aspires to represent more than a version of non-interacting, non-integrative, individual selections from disciplines.

Academic programme development initiatives in South Africa and elsewhere have increasingly focused on specification of generic programme outcomes where knowledge in curriculum is deemphasised. If there is not explicit attention to the recontextualisation of knowledge through curriculum and the explicit co-ordination of perspectives relevant to the scholarly endeavour prior to, and alongside, individual pedagogic recontextualisation in different courses, it seems unlikely that there can be informed scholarly insights into the complexities the disciplinary field has to engage with in programmes aspiring to be or claiming to be interdisciplinary.

Several issues need to be addressed if a curriculum is to aspire to, and achieve some level of, disciplinary integration. Interdisciplinarity that has as its focus the enhancement of knowledge, relies on disciplinarity (Mansilla and Duraising 2007) and the active co-ordination and organisation of disciplinary insights through curriculum. In assessment, a strong disciplinary grounding for good interdisciplinary work is valued by researchers working in interdisciplinary ways and by faculty assessing student work (Mallard, Lamont and Guetzkow 2009). Interdisciplinarity builds on, and either assumes (or has to put in place), disciplinarity. This implies that non-cognate, master's degrees that do not build on some common foundational disciplinary knowledge will struggle to achieve some level of integration. Teaching in ways that claim to be interdisciplinary, by implication, requires explicit development and articulation of integrative conceptual or methodological frameworks in order to develop courses that are more than eclectic offerings from a range of disciplines.

Where academics come from a range of disciplines they may not have a strong enough common academic culture for this interdisciplinary integration to occur or, for it to be maintained over time, particularly under managerialist pressures (Ryan and Neumann 2013) that place restrictions on the time, resources and organisational configurations necessary for doing so. 'Doing interdisciplinarity' in curriculum involves an epistemic relation to the various disciplines that inform the project (a *knowledge relation*) and a strong social relation (or *knower relation*) to the process of synthesis or integration of knowledge (Maton 2007). It thus requires engaging in boundary crossing dialogues about the phenomena, theories and philosophical perspectives that are brought to the integrated topics or questions by different

knowers.

Bernstein's theorising of integrated curricula focused on the movement of *disciplinary knowledge into subjects* in the curriculum. Much of the literature on interdisciplinary curricula in higher education does likewise with *work* (or expert practice) being seen in terms of production of knowledge through interdisciplinary research and extrapolations from this to identify interdisciplinary approaches and competences that such interdisciplinary education should foster. Consequently, neither give adequate guidance to lecturers on how to develop a curriculum claiming to be interdisciplinary that 'integrates' knowledge from both theory and practice in ways appropriate to the purposes of both the academic and workplace domains. In addition, relationships between interdisciplinarity in coursework and in student research may not be well considered with the complexity of interdisciplinary research being underestimated by both students and supervisors.

Integration in applied disciplinary fields and professions involves more than recontextualisation and integration of knowledge from disciplines. It also involves the recontextualisation of knowledge from work to support professional formation. Developing such a curriculum requires greater explicitness about the 'commingling' (Guile 2014) of theoretical knowledge and professional experience at the level of curriculum prior to its further recontextualisation through pedagogy. Without this, the curriculum may remain a (dis)integrated offering relying on individual students to make points of connection without providing the epistemic resources to so.

## NOTES

1. In this study I alternate between the use of public administration and public management naming them as cited by authors and interviewees. The terms 'public administration', 'public management' and 'public governance' became part of academic discourse in that order and are sometimes used interchangeably in literature.
2. Interviewees participated voluntarily, were assured of confidentiality and accepted that anonymity was difficult to assure given the small disciplinary field in South Africa.
3. The author was a member of staff and 'observing participant' (Alvesson 2003) towards the end of the period reviewed.

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