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Curriculum revision: Challenges in responding to change

D. Scholtz

Teaching and Learning Co-ordinator
Cape Peninsula University of Technology
Bellville, South Africa
e-mail: scholtzd@cput.ac.za

Abstract

The higher education landscape in South Africa is undergoing a process of change since the Higher Education Qualifications Framework was promulgated in 2007. The changes are more profound for the University of Technology sector where the majority of existing qualifications need to be revised, in addition to a new suite of qualifications that needs to be developed. This article foregrounds the opportunities and challenges that prevailed in revising the diploma programmes in a faculty at a university of technology. Given the myriad factors to be considered and incorporated into curriculum revision, this article draws on chaos theory and complexity theory as metaphors to understand the relationship of these factors and the complexities of curriculum revision as a non-linear process. While faculty lecturers were responsible for ensuring that the revised diploma was developed within a given time frame, it is argued that the ability to revise a curriculum is not necessarily a causal consequence of experience in teaching and academia and that there should be adequate capacity building and staff development as a pre-requisite for engagement. Curriculum revision, therefore, requires a concerted attempt at inclusivity of staff, knowledge and skills development as well as establishing collaborative structures within departments.

Keywords: curriculum revision, complexity theory, chaos theory, Tshwane university of technology, professional development, higher education

There is no right curriculum, only the best curriculum that the appropriate people with good information create to address the concerns of their learning community. (Goff 1998, 42)

INTRODUCTION

Higher education in South Africa has seen curriculum review, revision, change and development happen on an unprecedented scale as a result of the promulgation of the Higher Education Qualifications Framework (HEQF) in 2007 and the subsequent Higher Education Qualifications Sub-Framework (HEQSF) in 2013. The HEQF of 2007 advised a new framework with an amended suite of qualifications compared to the previous qualifications offered by higher

education providers in South Africa. As such, higher education institutions were required to review the suite of their current qualifications which resulted in the review and revision of existing qualifications and the development of new qualifications. As a precursor to the HEQF and the HEQSF, the higher education landscape changed significantly in the last decade, with the restructuring of 36 institutions into 23 universities consisting of 11 traditional universities (offering degree programmes), six universities of technology (UoTs) (offering diplomas and degrees in technology) and six comprehensive universities (consisting of a merged university and a UoT). The key objective of the HEQF 'was to enable the articulation of programmes and the transfer of students between programmes and higher education institutions ... and operates within the context of a single but diverse and differentiated higher education system' (HEQF 2007, 4). The HEQF and the HEQSF have had a far greater impact on UoTs since most qualifications currently being offered by UoTs do not feature on the HEQSF of 2013. By implication, certain UoT qualifications like the National Diplomas have to be revised to align with HEQSF requirements, while other qualifications will be phased out in favour of new qualification types (for example, the Bachelor of Technology will be phased out in favour of the Advanced Diploma). To this end, all higher education qualifications were classified as Category A, B or C. The categories signified whether:

- existing qualifications would be changed minimally (Category A);
- amendments could be made by up to 50 per cent within existing qualifications (Category B);
- a new qualification would be developed (Category C).

The diploma qualifications at this institution were classified as Category B, which meant that although a comprehensive process was followed to determine the kinds of changes to be made, the 50 per cent change option proved to be a limitation in certain cases in bringing about the kinds of changes envisaged. Curriculum revision for the diplomas, therefore, was based on the legacy qualification as registered with the South African Qualifications Authority (SAQA).

Given that the majority of academic staff at UoTs were not required to engage in formal curriculum revision and development processes as a result of the previous convenor technikon system, this curriculum revision process presented various challenges with which faculties and departments had to contend. The most prominent challenges included (1) creating a culture of openness to change; (2) capacity building for staff on curriculum related matters; (3) facilitating the process from an institutional, faculty and departmental perspective; and (4) creating time and opportunities for engagement in departments amongst all

the other priorities of teaching, administration and research. The curriculum revision and development structure and processes are, however, institution specific with each institution presenting a different approach depending on the purpose, nature, vision and mission of the university and the type of qualification being developed or revised.

This article explores the curriculum revision process of the diploma offerings of ten departments within a particular faculty at a UoT, with specific reference to the opportunities for professional development for faculty staff as well as constraints which were prevalent during this phase. Given the myriad factors to be considered and incorporated into curriculum revision, this article draws on Chaos Theory and Complexity Theory to explore the relationship of these factors and the complexities of curriculum revision as a non-linear process. The five-year duration of finalising the HEQF (from the HEQF of November 2007 to the HEQSF of August 2013) in itself was challenging for curriculum developers who were largely faculty members. The challenges emanated from not knowing what the final framework would consist of, the uncertainty of how to proceed with curriculum development in terms of compliance with statutory requirements as well as how to approach and proceed with the actual revision process.

SETTING THE CONTEXT

The South African Higher Education Qualifications Sub-Framework in context

The development of the HEQF (2007) to the HEQSF (2013) should be viewed against the backdrop of the changed higher education landscape of traditional research-based universities, comprehensive universities and universities of technology. The situation that previously prevailed was that articulation between programmes and universities did not always allow for the portability of qualifications. This scuppered the possibility of further studies or extended the period of study relating to the vertical progression of qualifications from one institution to another, especially for students who graduated with a Higher Certificate or a National Diploma. The purpose of developing the HEQF (2007) was, therefore, to provide for a single qualifications framework for higher education to improve coherence, facilitate the articulation of qualifications and the transfer of students between programmes and higher education institutions, thereby enhancing the flexibility of the system (HEQF 2007, 5). A *programme* in this context refers to ‘a purposeful and structured set of learning experiences that leads to a qualification ... with recognised entry and exit points’ (HEQF 2007,

6). A programme constitutes the core, fundamental and elective subjects across all levels of learning with all their concomitant components such as outcomes, content, assessment and credit allocation that will align with the purpose and rationale of the qualification. A *qualification*, in turn, refers to ‘the formal recognition and certification of learning achievement awarded by an accredited institution, such as a Diploma in Retail Management or Bachelor’s Degree in Education’ (HEQF 2007, 6).

The HEQF (2007) and HEQSF (2013) not only outline the vertical and horizontal progression of qualifications and articulation routes, but specify the parameters and criteria for programme design which have implications for all existing qualifications in higher education. It is important to note that for UoTs the alignment of current qualifications to the HEQSF involves more than surface changes but entails intensive re-curriculation processes to ensure that all qualifications meet the requirements of the HEQSF such as subscribing to the correct notional hours, levels and admissions criteria.

Although the HEQF was promulgated in 2007 with nine qualification types, several discussion documents emerged over a period of five years that required input from both private and public higher education institutions and stakeholder organisations. This consultative process was brought about as a result of ‘unresolved concerns about the number, nature and purposes of the qualification types’ as well as ‘a number of inconsistencies and gaps in the HEQF which had an adverse impact on meeting national policy goals and objectives’ (HEQSF 2013, 4). The final framework document, the Higher Education Qualifications Sub-Framework, includes 11 qualification types and ‘recognizes three broad qualification progression routes with permeable boundaries, namely, vocational, professional and general routes’ (HEQSF 2013, 5).

It should be noted that the HEQSF forms part of the 10 levels of the South African National Qualifications Framework (NQF) to which all qualifications offered across the South African education sectors, from Basic and General Education (Levels 1–4) to Higher Education (Levels 5–10) should subscribe. The focus of this article is, however, only the HEQSF, i.e. from Level 5 to Level 10 on the NQF (refer to Figure 1).

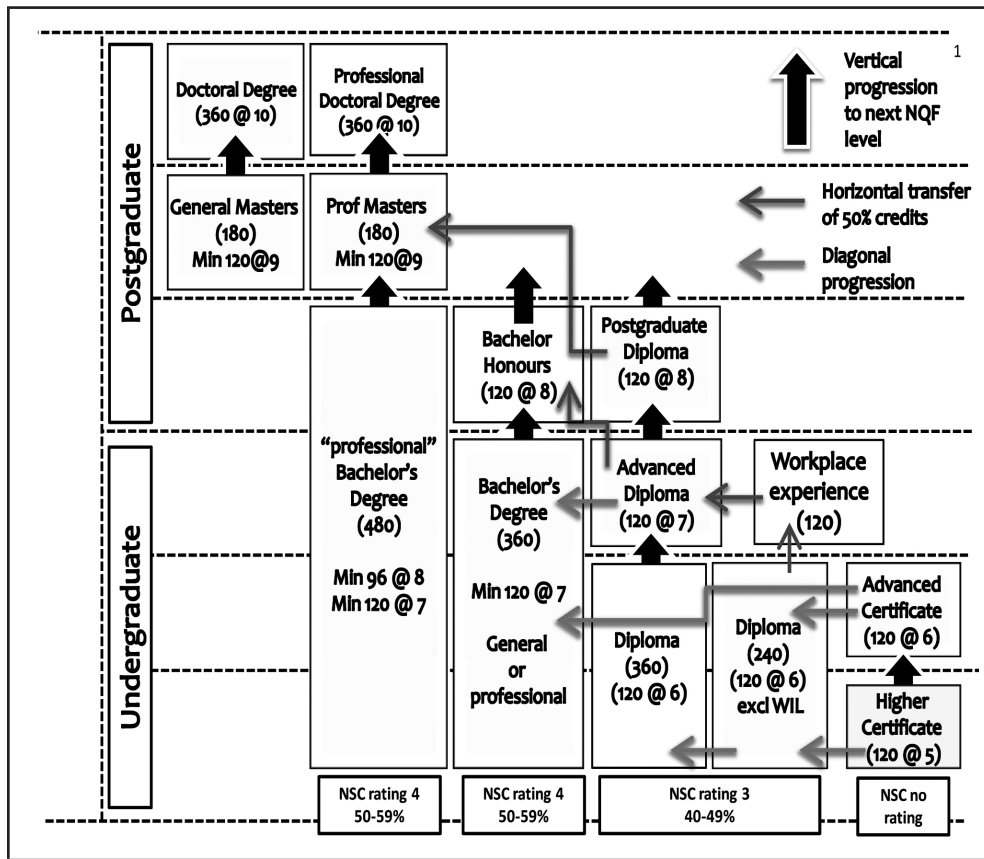


Figure 1: Illustration of the Higher Education Qualifications Sub-Framework (2013)

The several iterations of the HEQF to the HEQSF signify the various discussion and revision processes that ensued since it was first promulgated in 2007. The protracted period of calls for discussion and comments from higher education institutions signalled the need to present a national qualifications framework that responds satisfactorily to the demands of national policy goals and objectives, to the requirements of higher education institutions, industry, professional bodies and to the broader economy. Based on feedback from institutions and various discussion forums such as the South African Technology Network (SATN), professional bodies and the Sector Education and Training Authorities (SETAs), the HEQF of 2007 evolved into the HEQSF of 2013 with its current framework of 11 qualification types across three career pathways. This process of consultation with public and private higher education institutions spanned a five-year period with no fewer than 16 communiqués and related documents from the Council on Higher Education (refer to Table 1). This waiting period elicited a sense of flux, uncertainty and lack of direction amongst academics and curriculum developers

as to the final framework that would emerge and whether it would be accepted favourably across the different institutions in the higher education sector.

Table 1: Timelines of Communiqués regarding the HEQF

Date Of Publication	Communiqués from the Council on Higher Education regarding
October 2007	HEQF Promulgated -- <i>Government Gazette</i> No 30353
August 2008 -- August 2010	Joint Communiqués inform the South African higher education community of the steps being taken to prepare the higher education system for the implementation of the Higher Education Qualifications Framework (HEQF).
August 2008	CHE Joint Communiqué 1 on the implementation of the HEQF
September 2008	CHE Joint Communiqué 2 on the implementation of the HEQF
July 2009	CHE Joint Communiqué 3 on the implementation of the HEQF: Procedures and Guidelines for academic programme qualifications 2009 and 2010
30 August 2010	CHE Joint Communiqué 4 on the implementation of the HEQF
12 October 2010	CHE Communiqué 1 -- Review of HEQF, Implementation plan and Categorisation Process
December 2010	Institutional Submissions the CHE to the proposed amendments to the HEQF
26 July 2011	CHE Discussion document on the HEQF Review based on the feedback from the HE sector and other stakeholders
September 2011	CHE Discussion Document on the HEQF review
September 2011	The Revised HEQF
November 2011	CHE Framework for Qualification Standards in Higher Education: A consultation document
December 2011	Revised HEQF-- DHET <i>Government Gazette</i> No. 34883
May 2012	CHE letter to Institutions: Establishment of a task team to investigate the restructuring of undergraduate qualifications
January 2013	Revised Higher Education Qualifications Sub-Framework Notice 1020 of 2012 <i>Government Gazette</i> No. 36003
January 2013	CHE Framework for Qualification Standards in Higher Education Second Draft

The HEQSF that emerged in 2013 ‘is based on and maintains the structure of the previous framework, establishes common parameters and criteria for qualifications design and facilitates the comparability of qualifications across the system’ (HEQSF 2013, 6). The HEQSF is by no means restrictive and allows for institutions to develop qualifications ‘to realise their visions, missions and plans and to meet the varying needs of the stakeholders and communities they serve’ (HEQSF 2013, 6). The focus at this university of technology was to revise the national diplomas to align with the requirements of the HEQSF while simultaneously using this as a window of opportunity to ensure that the revised qualifications will be fit for, and of purpose.

Universities of Technology in context

January 2004 saw the advent of a new type of higher education institution, i.e. the University of Technology, which was formally known as a Technikon in South Africa. Technikons traditionally offered diplomas (not degree offerings), with related post-graduate diploma qualifications, Master of Technology and a Doctorate in Technology. The shift to UoTs elicited considerable debate around the role and function that this new institution would have and where it would be positioned in relation to the traditional universities and the newly established comprehensive universities. The UoT sector, therefore, had to ‘conceptualise and contextualise its role and function as one of the three institutional types in the restructured HE landscape of SA’ (Van Staden 2010, 168). It is important to note that while there are different institution types they all have equal importance in contributing to the higher education landscape albeit from different perspectives and programme offerings. This ‘different but equal’ notion aligns with De Beer’s (2010, 89) claim that although UoTs developed from technikons, ‘UoTs are not merely old technikons with new names but are facing the challenge of earning their rightful place in the South African higher education sector and within its new mandate’.

As a means of defining the UoT as an institution type, it is helpful to explore the concept of ‘technology’, which finds its origin in the Greek word *technē*, meaning ‘skill’ or ‘proficiency’. According to Van Staden (2010, 168) and Du Pre (2010, 10) ‘technology’ also relates to the words *epistēmē*, meaning ‘understanding and skill’, and *poiesis*, which denotes ‘working’ and ‘creating’. Against this background, UoTs offer vocational related programmes where conceptual knowledge is taught within relevant contextual and vocational frameworks. While skills and competences are important given the vocational and professional slant, the UoT approach is to provide the underpinning conceptual knowledge so that skills and competences may be applied in various

contexts. This relationship between the conceptual and contextual knowledge base culminating in work-integrated learning is a key feature of diplomas. To this end, Du Pre (2010, 18) asserts that ‘in career/vocationally-focused programmes, students must have some mastery of the fundamental concepts and theories of the cognate disciplines upon which their knowledge field draws, while directing theoretical understanding to its application in practical contexts’. The vocational career pathway is characterised by forms of knowledge ‘drawn from non-empirical (conceptual) and empirical (situated in everyday life) domains, for the curriculum to enable both knowledge progression and occupational progression’ (Gamble 2009, 3). This structured and sequenced continuum of conceptual and contextual knowledge bases considered appropriate for vocational curricula should, according to Barnett (2006, 152) ‘turn its face both ways’ from theory to practice in an authentic work environment. In other words, UoTs ‘are primarily concerned with professional and career-focused education and technological competences’ where the curriculum is developed around the graduate profile with input from industry, professional bodies, advisory committees and other relevant stakeholders (Van Staden 2010, 168–174). The input from practitioners and experts in the various professions ensures that the programmes respond to the needs of industry, business and society. As public tertiary institutions UoTs had to develop an identity as a university and one way of doing so was to evaluate their current qualifications, revise certain qualifications such as diplomas or offer new qualifications such as professional degrees.

Historical overview of curriculum development at UoTs

A system of convenor technikons was established in the 1980s, ‘where selected institutions were given increasing responsibility for leading curriculum development initiatives for specific programmes’ (Van Staden 2010, 151). Convenor technikons were tasked with developing curricula for specific qualifications that would be taught at all technikons in SA. Although the convenor technikon had the responsibility of developing the programme structure and subject content for a particular qualification, all technikons had representation and input as to what the end product should be. What this meant was that the majority of academics at the non-convenor technikons were given a curriculum to follow without having contributed to, or having engaged with, the curriculum development process. As noted by Van Staden (2010, 151) ‘while this centrally managed process was well intentioned with regard to the greater good of the UoTs, when coupled with the evolving national milieu, it may ultimately have contributed to the disempowerment of academic staff at institutional level with regard to input into, and changes to, the curriculum’. This ‘disempowerment of

academic staff’ as a result of the convenor technikon system was foregrounded during the curriculum revision process for diplomas within this faculty.

Within the convenor technikon system institutions had the leeway of introducing minimal changes to the subject content, but the programme structure for each diploma generally remained the same across all technikons. This was reflected in the same diploma offering being registered with SAQA across the UoT sector in all respective disciplines. In spite of the change from technikons to universities of technology, similar programmes for the majority of diplomas as presented by the convenor technikons were followed by most UoTs. This situation prevailed until the HEQSF required of institutions to effect the necessary changes to their curricula. As such the ‘disempowerment’ became a drawback when academics were called on to revise or develop programmes as required by the HEQSF. Academics in their respective departments at this particular institution were now required to engage with curriculum development and revision processes which they had not been privy to before.

Facilitating curriculum revision: The Curriculum Officer Model

In 2002 a system of Curriculum Officers (COs) was established in each faculty at the institution that is the focus of this article. COs are academic staff members appointed as lecturers or senior lecturers who are interested in and willing to accept the responsibility of improving teaching and learning, curriculum matters and research on educational imperatives in their respective departments. A memorandum of understanding which sets out the key performance areas for COs emanates from departmental requirements in consultation with staff members and the HoD. All COs form part of an institutional CO forum that meets on a monthly basis, with additional meetings being held more frequently to discuss the key performance areas as they pertain to specific departments and faculties. Given the national imperative for curriculum revision, this key area was adopted as a priority activity at this institution. As such, curriculum revision from a macro perspective, i.e. approaches to curriculum revision, curriculum theories, specificities of learning outcomes, knowledge areas, level descriptors, assessment and graduate attributes, amongst others, remained on the CO agenda for the past three years. The historical legacy of the convenor technikon system sustained a culture of acquiescence and compliance in accepting the national diploma structures, which created a chasm in capacity building around curriculum revision and development for academics. Hence the need for the intensive focus on all aspects pertaining to curriculum matters. Given the context of the HEQSF and its impact on UoTs where curriculum change and revision are most profound, the COs assumed the role of facilitating the rearticulation of diplomas. The

approach adopted was ‘not merely a change in “doing things” or curriculum reform’ (Nkomo 2000, 10), but an in-depth evaluation of what was being taught, how the programme was structured, how best to engage industry role players and how to factor in the myriad pedagogical imperatives of programme delivery at diploma level.

THEORETICAL OVERVIEW

Defining ‘curriculum’ as an educational construct

Various interpretations have been offered for the term ‘curriculum’ as a construct depending on whether it alludes to the ‘rather narrow interpretations to broad, all-encompassing interpretations which include virtually every aspect of the full education system’ (Nkomo 2000, 5). The ‘broad, all-encompassing interpretation’ would incorporate components such as the rationale for the programme, conceptual and contextual knowledge structures, learning outcomes, teaching and learning activities, assessments, level descriptors and graduate attributes to mention a few, that would address the knowing, doing and being imperatives of a graduate. Given the dynamic environment of changing forces that impact on education, a curriculum is not a static entity but should be viewed ‘as a process of identifying the concepts and skills that students need to learn, as a subject of study at the university level and by comparing it to what it is not – not instruction, not content and not open for interpretation’ by lecturers in the same field (Goff 1998, 29). Reid (as cited in Goff 1998, 29) on the other hand, perceives curriculum to be a ‘significant social practice that is associated with learning, teaching, schools and education’. Knight (2001, 369) draws on ‘curriculum scholars’ view that curriculum is more than just content ... but can be defined as a set of purposeful, intended experiences ... which may be divided into four parts: content, organisation, learning and teaching methods and assessment’. While the definition of ‘curriculum’ is clearly open to interpretation, research shows that there is no exact process to follow in revising or developing a curriculum. Goff (1998, 31) cautions that ‘we reveal a reductionist bias when we speak of curriculum in terms of blueprints and clearly defined plans’. The term ‘curriculum’ might be perceived differently by different theorists, but a significant corpus of research conducted on curriculum revision and development draws on the ‘broad, all-encompassing interpretation’ as noted above. In keeping with the many definitions of the term ‘curriculum’, there are as many different interpretations, approaches and practices of curriculum *development*.

Within the context of this article curriculum development is viewed as synonymous with curriculum revision given the in-depth situational analysis,

benchmarking, reflexive processes and interrogation that ensued in critically evaluating the current diploma. Burgess (2004, 164) notes that curriculum development in higher education has moved from content-driven (a focus on what is taught) to objectives-driven (a focus on learning outcomes) to process-driven (a focus on how learning takes place), i.e. the student's learning experience. Burgess (2004, 168) provides an outline of Toohey's typology of philosophical approaches to curriculum in higher education as follows:

- The traditional or discipline-based approach focuses on the structure of knowledge in the discipline;
- The performance or systems-based approach refers to the technical activities that relate to the achievement of defined goals;
- The cognitive approach relates to the development of the intellectual critical faculties, i.e. how students learn;
- The experiential/personal relevance approach has students as its central focus in order to meet individual needs and interests.

Curriculum revision for diploma programmes with a vocational orientation is rooted in all of the above approaches. However, the discipline base, i.e. the knowledge areas and knowledge structures appropriate for diplomas, elicited considerable debate in this faculty: firstly, evaluating the diploma as a qualification within the university context; secondly, to determine the relationship between the knowledge bases for diplomas and degrees for articulation possibilities, and thirdly, to explore the Bernsteinian concepts of horizontal and vertical knowledge structures, classification, framing and recontextualisation of vocational knowledge and pedagogy (Shay 2012; Gamble 2009; Barnett 2006; Muller and Moore 2002). Vocational pedagogy is equally important to vocational knowledge given the cognitive demands based on the nationally set levels descriptors, the levels of student engagement, work-integrated learning as well as the recent importance afforded to graduate attributes within the South African higher education context. Curriculum development is much more than an amalgamation of the components that constitute teaching and learning. Since curriculum development and revision reflect a social practice, 'an understanding of the dynamics of social systems becomes a requirement for anyone interested in planning improvements in curriculum' (Goff 1998, 30). The reference to 'the dynamics of social systems as a requirement' for curriculum revision in this context is attributed to the notion that curriculum development requires the efforts of many practitioners where 'everyone in the problem needs to be involved in the solution' (Goff 1998, 37). Given that curriculum is 'a complex, social system' curriculum development is

more than ‘plans or a blueprint for activities’, often unpredictable with ‘diverse representations’ where ‘even a small group of curriculum developers will exhibit diverse perspectives on the development process’ (Goff 1998, 30). By implication, curriculum development and revision is an iterative process that does not necessarily produce predictable results.

To this end, chaos theory and complexity theory provide an understanding that systems have unpredictable characteristics as a result of macro and micro imperatives which are prone to change. In some cases ‘order reveals itself in retrospect: it cannot be planned’ (Goff 1998, 33). The underpinning premise of chaos and complexity theories is that curriculum development and revision are iterative, evolutionary processes as opposed to sequential linearity that signifies a sense of order where processes and events are scaffolded in neat progression. However, while there might be ‘occasions when events are regular, linear, calm and predictable ... there are also times when almost anything can happen’ (Richards 2001, 252).

Chaos theory and complexity theory as metaphors for curriculum development

While the term ‘chaos’ is usually associated with pandemonium and mayhem (Smitherman 2005, 153) it developed a different meaning when firstly, Lorenz came to recognise nonlinearity in his 1963 weather research, specifically the idea that a small change can make a big difference. Lorenz discovered that something as small as only three decimal places could result in amazingly different results. Secondly, Li and Yorke published a paper in 1975 that demonstrated how deterministic equations could produce unpredictable values. They named this idea of unpredictability ‘chaos’ and that word has remained the defining term ever since (Moseley and Dustin 2008, 141). Within the ‘context of university classrooms, the chaos and complexity metaphors are a way of understanding the volumes of information we are faced with ... [and] expecting straightforward linear relationships’ of all the variables may not be realistic (Moseley and Dustin 2008, 141). Similarly, within the context of curriculum revision at UoTs complexity prevails as a result of the many changing variables to be considered. While chaos theory foregrounds non-linearity and unpredictability and reveals that insignificant elements might indeed have profound influences, complexity theory is concerned ‘with larger systems and the relationships among their constituent elements or agents that interact with each other in different ways’ (Mason 2008, 5). Drawing on metaphors associated with chaos and complexity theories, new visions for curriculum change can emerge. Since knowledge is socially constructed, time bound and relevant to current political, economic and

social contexts, it would appear to be a limitation if re-circulation was viewed as sequential or static. ‘Constituent elements’ (Mason 2008, 5) that impact on education are in a constant state of flux, which renders change ubiquitous in the South African higher education environment.

Against the background of the national and institutional imperatives, the several iterations of the HEQF, the challenges faced as novice curriculum developers, the perceived control of stakeholders and professional bodies on diploma programmes, as well as the ‘supercomplexity of the nature of curriculum change’ (Barnett 2000) amongst other factors, chaos and complexity theories provide a purview of the curriculum as an ‘open, dynamic system’ that responds to forces of change within and outside the institution (Reid in Goff 1998, 34–35). While the term ‘chaos’ portrays a pervasive lack of order, it provides a useful metaphor for making sense of the higher education re-circulation scenario in South Africa where UoTs are dealing with internal changes and establishing their identities while simultaneously responding to national curriculum imperatives. Given the degree of complexity as a result of internal and external change forces in this ‘dynamical system’ (Mason 2008, 7) it proved difficult to predict an emergent revised curriculum. However, the curriculum revision process evolved to align with Richards’ (2001, 250) view that chaos should be viewed as a time of creativity where we are ‘poised for innovation ... constantly evolving and seeking an emergent new order’ and should not be associated with negativity or an obstacle to progress.

This ‘constantly evolving’ nature of curriculum revision is captured in Doll’s theory of the Four Rs: i.e. Richness, Recursion, Relations, and Rigour (as cited in Smitherman 2005, 171). Richness refers to curriculum depth, to its layers of meaning, its multiple possibilities or interpretations. When due consideration is given to the importance that external forces exercise on vocational qualifications (e.g. the HEQSF, the various industry stakeholders, employers and professional bodies), that do not necessarily enter the arena simultaneously or sequentially, the process that emerges is disordered. However, consultation with all constituents is necessary as they all ‘influence and interpret the curriculum in varying degrees’ (Goff 1998, 34) and in so doing contribute to providing richness to vocational knowledge areas, content and pedagogy. According to Doll ‘the *problematic, perturbations, possibilities* inherent in a curriculum are what give a curriculum its richness’ (in Smitherman 2005, 171).

Doll (in Smitherman 2005, 171) explains Recursion as a transformative process that relates to iteration where ‘there is both stability and change; the formula stays the same, the variables change (in an orderly but often non-predictable manner)’. A case in point is the five-year development of the HEQF to the HEQSF. While the framework did not change, there were ‘main concerns’ and at least seven

pertinent issues that emerged from continued interaction between the CHE and higher education institutions (CHE 2011). These concerns and issues would impact significantly on curriculum revision for diplomas and included various permutations of learning and progression pathways within the diploma route, workplace learning, the introduction of 240 credit diplomas, and the introduction of Professional Master's and doctorate degrees. A pattern of working within specific CHE and HEQC communique guidelines emerged, until the next communiqué was published that either changed, developed from or required input from higher education institutions. A 'recursive dialogue' was established between the CHE and higher education in the quest for a 'transformative curriculum that allows for transcendence, creativity and reflexivity to occur [as] these dialogues simultaneously generate new experiences and knowledge on which participants can continue to reflect' (Doll as cited in Smitherman 2005, 171). While reflection, debate and 'recursive dialogue' were encouraged at national level, the results of the broad consultative process were often unpredictable which resulted in a veil of uncertainty for curriculum developers and higher education *per se*.

The curriculum revision process for diploma qualifications thus far has been dominated by the maxim that the only constant is change. Complexity prevailed as the rules of engagement, concerns, and participants were always changing, resulting in shifting relations and relationships between constituents nationally, institutionally, departmentally, internally and externally to institutions. It is this notion of fluidity in the Relational elements to which Doll refers, given that within the recurriculation scenario 'we are all contextually bound – ever-changing, ever-shifting, and dynamic'. Yet these shifting elements proved to be positive as the shifts and changes were instrumental in affecting how the curriculum was 'shaped and developed [which] created moments for learning to become a rich and recursively related experience' (in Smitherman 2005, 172). For example, since staff engagement in curriculum activities was peripheral to their core functions, the timeous process from HEQF to HEQSF allowed for professional development initiatives, additional meetings with industry and a negotiated revised curriculum that would be responsive to regional and national economic and educational needs.

Curriculum revision requires a robust process taking into consideration all the political, socio-economic and financial implications in redesigning the appropriate qualification with its concomitant programme structure. The core of any qualification is made up of knowledge and competencies which need to be critically analysed with Rigour in terms of relevance and being fit for purpose. Doll's perspective of Rigour provides a different lens from which to interrogate knowledge which is fit for purpose. Doll claims that 'deconstructing the underpinnings of knowledge and the assumptions that accompany information

allows for interpretive frames to expose the limitations of such knowledge as well as to stimulate new perspectives and new approaches to learning' (in Smitherman 2005, 173).

Within the context of this recurriculation exercise it became evident that conceptual frameworks for curricula do not feature in the realm of absolutes but are reworked by incorporating the input from all stakeholders as well as critical reviews and reflexivity of the current curriculum. This deconstruction of knowledge together with critique and reflexivity of current practices allowed for a content-rich curriculum that foregrounded the relationships of knowledge bases for vocational qualifications.

OPPORTUNITIES AND CONSTRAINTS OF CURRICULUM REVISION

The iterations of the HEQF to the HEQSF

As noted earlier in this article, since the promulgation of the HEQF in 2007, several iterations later resulted in the HEQSF (2013). While the HEQF of 2007 was in and of itself a contentious document given the profound changes it suggested for UoTs, the interim periods of waiting for the proposed changes in subsequent communiqués created a sense of uncertainty as to how to proceed with curriculum revision. The impact of 'just a small change that [could] drastically change the long term [implications] of a complex system' (Barnett, Parry and Coate 2001, 443) was evident in the introduction of the 240 credit diploma as well as the professional degrees. These qualifications have major ramifications for institutions in terms of providing resources for additional new qualifications. In addition to the confusion within the higher education sector, it seems that industry has not been enlightened as to the changed qualification structure of the HEQSF. Curriculum Officers reported that they were 'not too sure how much their Advisory Committee members understand with regard to the process' and that 'industry members are not familiar with the HEQSF or the reasons for it'. Furthermore, industry partners indicated that the revised diploma and phasing out of the Bachelor of Technology qualification made 'recruitment and selection complicated and jeopardized students' employment possibilities'.

Facilitating professional development

The historical convenor technikon system, while ensuring the standardisation of programmes, created a vacuum of curriculum development practices within departments. A scaffolding process of professional development for academic staff was established with the COs being pivotal to the process. The monthly

institutional CO forum sessions focused on aspects of curriculum such as the development of the HEQSF and its implications for UoTs, curriculum-related theories, curriculum mapping, constructive alignment, work-integrated learning, graduate attributes and conducting curriculum activities such as situation analyses and benchmarking. Given the disordered nature of curriculum revision, the CO sessions provided an overview of curriculum revision but could not provide a sequential structure of how the content of the focus sessions could be used. Although guidelines for rearticulation were foregrounded, no format could be followed with precision given the different dynamics that played themselves out in departments.

The findings of CO reports showed that staff in departments:

- might not have had the requisite background theoretical knowledge to guide the rearticulation process;
- required assistance with curriculum elements and concepts such as ‘the correct writing of outcomes and understanding the level descriptors’;
- were not all willing participants in the rearticulation process as a result of time constraints, lack of interest in the process and apathy to interrogate and change the current curriculum;
- became disillusioned at the slow pace of rearticulation (workshops and discussion sessions were held once per term in most departments).

The CO reports indicated the positive factors as:

- closer collaboration with other UoTs resulting in national articulation workshops and consultations with peers at other institutions;
- closer collaboration within departments where staff approached the rearticulation process as a collective;
- greater interaction amongst lecturers in critiquing their subjects, reflecting on change, identifying overlaps and gaps in subject content and identifying appropriate levels of content delivery;
- developing ‘good relations’ between staff members as well as between the department and external stakeholders, with ‘valuable feedback from specialists’ in the field.

Although the majority of academic staff members had in excess of ten years’ experience as lecturers, this did not imply that they were au fait with curriculum

revision approaches and practices. There is therefore, no causal consequence that experience in teaching and academia results in a seamless transition to curriculum revision. It should be noted that (un)willingness of staff did not necessarily stem from a lack of knowledge and experience around recurriculation issues, but also as a result of the time constraints where curriculum revision had to vie for priority status with teaching, marking, consultations, administration and research responsibilities. One of the main problems identified was ‘getting groups of people together at the same date and time’. While industry indicated a willingness to be part of the process, the difficulty of arranging discussion sessions prolonged the initial stages of progress, as ‘the main challenge was to get all the employers together’. The role of professional bodies, where applicable to specific programmes, seemed problematic since they were dogmatic in their approach by ‘dictating content’ such that there was a ‘disconnect between the expectations of employers and departmental management’. In one department the professional body dictated content to the extent of prescribing the textbook to be used, while the expectations of employers had to be met, both of which had to align with faculty imperatives. These problematic perturbations and possibilities (Doll in Smitherman 2005, 171) required a cautious compromise in order to meet the expectations of industry, the institution and national quality assurance structures.

Although there were negatives, recurriculation became synonymous with ownership of the process where academics collaborated and were keen to use this opportunity to contribute to a curriculum that they considered worthy of delivering. While the initial phase of presenting the spectre of recurriculation and the responsibilities thereof were daunting for COs as a result of staff apathy and negativity, attitudes and support changed to collaboration and assistance as part of a team effort. Collaboration for recurriculation was unfamiliar terrain for many academics. Goff’s (1998, 40) assertion that ‘those for whom a collaborative process is unfamiliar will need to learn how to participate [such that] this type of curriculum development project becomes a learning experience for all who are involved in it as a process’ became a reality in most departments. Collaboration amongst staff members evolved from the necessity to revise a curriculum that ‘best represents what the participants want and need at that time’ despite the appearance of chaos (Goff 1998, 41).

Recurriculation: Responding to relevance and responsiveness

Although the revised qualifications will be submitted to the HEQC for approval in 2014, the expectation is that implementation will only take place as from January 2016. Since the change forces in South African higher education are

‘ever-shifting, and dynamic’ (Doll in Smitherman 2005, 172), the challenge that presents itself is how to recurriculate for the future yet remain relevant and responsive to all role-players and stakeholders. Barnett (2000, 258) cautions that ‘higher education is called upon to be responsive to the “needs” of society [and has] to detect and to decipher the messages coming to it. The messages are mixed, uneven, often weak, changing and even conflicting.’ The ‘conflicting’ messages of professional bodies, industry and higher education present a case in point. The difficulty in remaining current is that higher education is faced with preparing students for ‘a supercomplex world ... where nothing can be taken for granted, [since] it is a world in which we are conceptually challenged’ (Barnett 2000, 256). The frameworks within which academics operate are themselves contested. For example, the interpretation of the HEQSF, the construct of ‘curriculum’, the approaches and models employed in recurriculation and the core knowledge areas that constitute the curriculum are by no means absolute and are open to interpretation and contestation. These elements need to be debated with rigour in order to arrive at an analytical framework that would be helpful to understanding curricula and curriculum change to ensure relevance and responsiveness in a supercomplex world. Barnett (2000) conceives of supercomplexity as a shifting, fragile world based on evolving technological, social, political and economic environments that impact on how we understand and respond to these changes. One example of the challenges of supercomplexity is that ‘higher education is increasingly pressured to produce graduates ready for the labour market, with employability being another performance indicator’ (Goff 1998, 443). This commodification of education is evident in the significant influence that the world of work has on curriculum and whether industry perceives graduates to be employable or not. It is within this uncertain context that ‘those in higher education responsible for offering programmes of study are faced with nigh-on impossible challenges’ (Barnett 2000, 258) of how to recurriculate for an uncertain future yet remain relevant and responsive. While industry partners provide input, in the final analysis it is the academics who determine the curriculum.

CONCLUSION

Change is complex and ‘all too often our world of change is characterised by conflicting demands and competing priorities such as research, teaching and administration’ (Jackson 2002, 2). Academics are often faced with internal and external pressures for change and ‘are often required to interpret the implication of these forces and implement changes, sometimes with little support or guidance’ on how to proceed (Jackson 2002, 5). This scenario sketched by Jackson (2002) was

prevalent since the HEQF was promulgated in 2007. Academic staff members, in particular Curriculum Officers, at this institution were required to facilitate an in-depth process which would have profound long-term consequences for students, industry and the institution as a whole. This responsibility became the domain of academics amidst the uncertainty of several factors, such as curriculum revision processes, the final outcome of the HEQSF, (un)preparedness of staff to deal with curriculum revision, professional capacity building initiatives, being cognisant of the needs of all role players and the shifting continuum that all of these factors displayed at one time or another. This ‘multiplicity of simultaneously interacting variables [and their] non-linear interactions’ (Radford 2008, 510) proved challenging in plotting a strategic trajectory for requalification. Amidst this capricious environment, it was incumbent on academics to support requalification in order to develop appropriate content-driven, objective-driven and process-driven curricula (Burgess 2004, 164) to ensure that graduates develop and thrive in the workplace. Education forms an integral part of a social system. Yet, as illustrated in this article, ‘social systems do not follow an orderly logic, but a complex one that is often paradoxical and contradictory’ (Goff 1998, 30). The main challenge for academics as curriculum developers in this faculty, was to exact order from the permeable boundaries of variables amidst the chaotic and complex systems that prevailed in higher education since 2007. The majority of academics within this faculty may have bemoaned the extra workload but as the process unfolded, a culture of collaboration to engage as a team, the drive to revise from an in-depth perspective and ownership of the processes became evident. Requalification ultimately became an opportunity for reflection, development, change and innovation. Boundaries in all respects, shifted from being perimeters to interfaces which were open to ‘constant renegotiation’ (Radford 2008, 511). However, creating this enabling environment in which the requalification process was eventually embraced by departments proved to be a long and arduous journey. This article foregrounds the need for UoTs in particular, to take cognisance of the challenges presented in addressing the ‘complex and unpredictable interactions’ (Goff 1998, 30) that are prevalent in curriculum revision and development and so doing provide the requisite support and professional development in the quest to develop qualifications that serve as benchmarks within the higher education landscape.

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