2012

LMIP WORKING PAPER 16

Differentiation in the Post-School Sector

Andre Kraak

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LABOUR MARKET
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Author: Dr Andre Kraak

Institution: Education Research Consultant

Email: andrekraak@vodamail.co.za

Date: June 2012

Preface

One of the gravest economic challenges facing South Africa is high unemployment, but at the same time, a skills mismatch. The market demand for skilled labour is greater than the number of individuals completing post-school education and training. Prospective employers often complain that the education system does not give individuals the necessary skills to be productive in the workplace, or to start their own enterprises.

Government acknowledges that the unemployment crisis is a systematic problem and cannot be addressed by ad hoc interventions scattered across line departments. With this 'big picture' thinking in mind, DHET aims to create broad and equitable access to a full spectrum of post-school opportunities and lifelong learning encompassing adult education and training, workplace training, the FET college system, artisan and technical training, higher education and innovation.

DHET's ability to create these learning opportunities requires a network of partners to gather and maintain a labour market intelligence system. Such a system can provide analytical insights to support policies and intervention programmes.

In February 2012, therefore, DHET commissioned a HSRC led research consortium to support its capacity to create and maintain a labour market information and intelligence system, guided by the national Delivery Agreement 5. The primary focus is the development of a 'strategic intelligence capability' towards the establishment of 'a credible institutional mechanism for skills planning'. The HSRC coordinated research project is organised in terms of six interlocking research themes, two which focus on labour market information and four which focus on labour market intelligence:

- Theme 1. Establishing a foundation for labour market information systems in South Africa
- Theme 2. Skills forecasting: the supply and demand model *(a WITS EPU project)*
- Theme 3. Studies of selected priority sectors
- Theme 4. Reconfiguring the post-schooling sector
- Theme 5. Pathways through education and training and into the workplace
- Theme 6. Understanding changing artisanal occupational milieus and identities

The consortium made a strategic decision that their research must not duplicate or repeat existing research about the challenges facing South Africa's education and training system and labour markets. Their research must address gaps, promote synergies and explore complementarities.

Hence, as a first step, working papers were commissioned to inform the research agenda for each theme. Although the working papers cover different issues, each has four common dimensions: policy challenges to institutionalise and build a post-school education and training system in South Africa, lessons from seminal national and international research, conceptual frameworks, methodological issues and data challenges raised by this research, and potential research gaps.

One of the HSRC led consortium's goals is to create a living community of practice that researches and debates education, skills and labour market issues. These working papers were presented at a conference in May 2012 to start building such a research network.

The dissemination of these working papers is intended to encourage more individuals to join the research community. We look forward to individuals' comments. They can be emailed to agoldstuck@hsrc.za.za. Welcome to the research community!

Theme 1:	Theme 3:	Theme 4:	Theme 5:	Theme 6:
Establishing a foundation for labour market information system in South Africa	**Studies of selected priority sectors**	**Reconfiguring the post-schooling sector**	**Pathways through education and training into the workplace**	**Understanding changing artisanal occupational milieus and identities**
Simon McGrath Some international reflections on developing VET indicators	**Haroon Bhorat and Morne Oosthuizen** Studies of Selected Priority Sectors in the South African Labour Market: A Proposed Research Programme	**Andre Kraak** Private post-school education in South Africa	**Michael Cosser** Pathways through education and training and into the labour market	**Angelique Wildschut** Conceptualising the study of artisans
Phil Toner Establishing a foundation for labour market information systems in South Africa	**Peter Jacobs and Tim Hart** A critical review of the research on skills development in rural areas	**Andre Kraak** Differentiation in the post-school sector	**Pundy Pillay** Pathways through education and training and into the workplace: a concept paper	**Jeanne Gamble** Models and pathways to institutionalise apprenticeships
Anthony Gewer Developing a framework for institutional planning and monitoring in FET Colleges	**Shirin Motala** A critical review of research on skills development and labour market demand in the early childhood development sector	**Joy Papier et al** Contemporary issues in public FET colleges	**Sharlene Swartz** Navigational capacities for youth employment: A review of research, policies, frameworks and methodologies	
Carmel Marock Developing a framework for understanding SETA performance: Monitoring and evaluating their role in skills planning, steering and enabling a supply within their sector	**Thembinkosi Twalo** A comparative review of skills development in cooperatives	**Veronica McKay** A critical review on Adult Basic Education (ABET) in South Africa	**Fiona Lewis** Traffic jams or trees – how are South African youth progressing through the higher education sector? And what lessons can we learn from current studies?	
Bongiwe Mncwango Towards a demand side firm level survey of labour information in South Africa	**Margaret Chitiga and Stewart** Development of a national skills forecasting model	**Thenjiwe Meyiwa and Nolutho Diko** The state of graduate teacher transitions to the labour market	**Stephanie Alais** Jobs? What jobs? Skills? What skills? An overview of studies examining relationships between education and training and labour markets	

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SECTION ONE:

EXECUTIVE SUMMARY

This Briefing Paper begins from the bold assumption that it is intermediate skills that are critical to the future growth of the South African economy. The intermediate band of qualifications are post-Grade 12, pre-degree qualifications (NQF Levels 5-6). These are the para-professionals and the mid-level technicians who hold career-oriented and vocational qualifications that are required in large numbers in an increasingly sophisticated 'knowledge' economy. 'Ramping-up' provision in this band remains one of our greatest education and training challenges.

To understand differentiation holistically requires a consideration of two axes of differentiation within the wider post-school system: firstly, the soft trinary divide within higher education (HE); and secondly, the hard binary divide between further education (FE) and HE. Almost no policy attention has been given to the latter, and as a consequence, few opportunities for articulation and progression exist between these two education sub-systems.

Discussion in the Briefing Paper is arranged in the following way. Differentiation in higher education will be considered in the first section. The discussion here will focus on the three central differentiation tensions currently characterising higher education: the need to satisfy both the 'research' and 'teaching' functions; and thirdly, differentiating effectively between an 'academic' and 'career-oriented' focus (the 'polytechnic' function).

A sub-sector usually neglected in analyses of differentiation in higher education is then discussed in a second section. This sector comprises the publicly funded 'Tertiary Colleges' (for example, nursing, agriculture and police colleges). And finally, issues of differentiation in the post-school, pre-degree sector (including the FET college sector) are discussed in a third section. The report concludes by considering a number of research proposals on institutional differentiation in South Africa.

A research agenda in this field will be difficult to construct. This is largely due to the policy indecision that has characterised the sector since the early 1980s. This places a difficult burden on researchers in the FE-HE sector who will need to clarify and perhaps even argue for certain policy positions around differentiation prior to identifying the critical areas requiring empirical, evidence-based research. Policy certainty needs to prefigure any subsequent empirical investigation – and this is a difficult obstacle to overcome. This writer makes the assumption that a post-school system starts after Grade 12 and not before. This is not enshrined in policy and in fact, others argue that a post-school system should begin at Grade 10. The HSRC Research Consortium will also need to assert some of their own policy propositions to guide and steer the empirical research agenda.

SECTION TWO:

DEFINITIONS

BUILDING INTERMEDIATE SKILLS AT NQF LEVELS 5 AND 6

This paper operates from the bold assumption (which others may disagree with) that the central issue confronting the construction of a coherent post-school system of education and training is a substantial expansion or 'ramping up' of educational provision at National Qualifications Framework (NQF) levels 5 and 6. That is post-school, pre-degree education and training occurring at the FE-HE interface. This position is adopted for two reasons.

The continued economic significance of intermediate skills

Firstly, the transition to a high skills or knowledge economy is premised on the exponential growth in the availability of skills at the intermediate (and not only the high-end) levels. Kraak (2003) argues that the diffusion of the new high-skills production techniques is more uneven than is acknowledged in the international literature on globalisation and the knowledge economy. These techniques do not totally displace old forms of social and economic organisation, but rather co-exist alongside them to become the new commanding heights of most advanced and developing national economies.

The reality of high-skills production is that it actually occurs in relatively few sectors in the advanced and leading East Asian developing economies: information technology; biotechnology; new materials beneficiation; pharmaceuticals; aircraft manufacture; machine tools; the high-skills end of financial and business services; and the high-skills professions in the civil service, law and medicine.

However, this description of the high skills society does not constitute the total society. In between is middle society (see Kraak, 2003: 664-665), which is not accounted for in many of the explanations of globalisation, although it probably constitutes the majority. For countries such as South Africa, the stability and expansion of middle society is a key political goal. The bulk of personnel in the formal economy are from middle society, and their skills and well-being are the means necessary for a stable and well-functioning society (See Kraak, 2003).

The problem of ignoring middle society is also related to an exaggeration of the changes impacting on manufacturing. Analyses of economic change tend to overstate the shift within manufacturing towards higher value-added production, and to over-emphasise the shift from manufacturing to services, particularly the high-skills 'information age' services. The reality is far less dramatic.

The neglect of middle society and manufacturing has a further ripple effect – the undervaluing of intermediate skills. Crouch, Finegold and Sako (1999) argue that certain economic sectors are

dependent on particular configurations of skills – low, intermediate or high. They identify three key sectoral bands, categorised according to dominant skills requirements in manufacturing, which are:

1. **High-skills sectors:** petrol, gas, chemicals, dyes, paints, pharmaceuticals, and office equipment;
2. **Intermediate-skills sectors**: engines, machine tools, metal machine tools, and non-electric machines; and
3. **Low-skills sectors**: meat, rubber, leather goods, rubber goods, textiles (Crouch et al 1999).

The analysis of Crouch *et al* above clearly suggests that manufacturing and intermediate skilling continue to be important to advanced and developing economies across the globe (including South Africa). Kraak (2009) reaches a similar conclusion about the South African labour market. In a comprehensive collection of industrial and skills policy papers, Kraak deploys a segmented labour market perspective in explaining the high degree of unevenness in the demand for enterprise skills across diverse sectors of the South African economy. A six-part segmented labour market model is developed which seeks to overcome the homogenizing tendencies in the international and local literature which exaggerate an all-pervasive shift of sectors towards the knowledge economy. Kraak argues that these approaches fail to explain how multiple labour markets and highly variegated sectoral production regimes co-exist within a single national economy. Kraak's ideal-type six-part segmentation model attempts to do this. He describes 6 different modes of educational provision arising on the demand-side:

3 very different high-skill sectoral modes of ET provision:

- **Segment 1 - State-guided, high skills:** produced exogenously (externally), highly regulated by the state (eg, Aerospace, Nuclear Energy)
- **Segment 2 - High value-adding manufacturing:** produced endogenously (internal to firms) – eg, Auto
- **Segment 3 - Top-end 'flexible' labour market jobs**: produced by the actions of individuals and their human capital choices, producing a highly-skilled, highly mobile, entrepreneurial labour force (eg, Financial services, ICT, Tourism, Film).

3 very different low-skill sectoral modes of ET provision:

- **Segment 4 - low value–adding manufacturing**: low beneficiation, low exports, producing for internal markets (eg, clothing)
- **Segment 5 - bottom-end 'flexible' labour market jobs:** low-end jobs produced by casualisation and outsourcing, which are impermanent, low-skill and lowly paid (eg bottom-end of Tourism)
- **Segment 6 - state-supported entry level training**: aimed at low-skill work in the informal economy (eg, bushmills, paper-recycling, scrap metals) [Kraak, 2009: 320-352]

Understanding these demand-side dynamics changes the debate about supply-side institutional differentiation quite significantly. Past approaches based on a 'one-size-fits-all' model is

inappropriate given South Africa's highly differentiated economy and labour market structure. Kraak's six part model suggests that there are only two segments (out of 6 segments) that are truly high skills in terms of university education (segments 1 and 3). More significantly, three segments are dependent on post-school, pre-degree intermediate skills (particularly segment 2 but to a lesser extent segments 4 and 5). Entry-level skills are produced by segment 6. It would be erroneous, therefore, to suggest that the skill needs of the national economy are in transition to a 'high skills' society. Intermediate skills are equally important and are numerically in greater demand, yet the supply-side institutions that support them have been neglected in past education and training policy.

Eliminating the inverted pyramid

The second reason for emphasising intermediate skills is the fact that only massive growth at the post-school, pre-degree levels (NQF Levels 5 and 6) will act to reverse the 'inverted pyramid' problem characterising South Africa's education system. as a developing economy. The inverted pyramid is based on the fact that nearly three times more students gain access to higher education (HE) than they do the Further Education and Training (FET) Colleges. In other contexts globally, learners in post-school, pre-degree programmes constitute the vast majority of enrolments in the post-school system.

The centrality of intermediate skills is illustrated in Figure 1.1 below. The first observation to be made from Figure 1.1 is that the FET phase ends at NQF Level 4, the achievement of which represents the culmination of the schooling phase at Grade 12. More interestingly, NQF Levels 5 and 6 are post-school qualifications located within the higher education band, but which are pre-Bachelors Degree. The core focus of university provision begins at NQF Level 7 – the Bachelors Degree through to the PhD (NQF Level 10).

It is this intermediate band of qualifications - which are post-school, pre-degree (NQF Levels 5-6) - that are considered as critical to human resources development and the growth of modern economies. These are the para-professionals and the mid-level technicians who hold career-oriented and vocational qualifications that are required in large numbers in an increasingly sophisticated 'knowledge' economy. 'Ramping-up' provision in this band remains one of our greatest education and training challenges.

This should be the primary purpose of building up a post-school pre-degree education and training sector – to ramp-up enrolments and graduations at NQF Levels 5 and 6. Building such an 'identity' for the post-school sector means it is primarily post-school and not a parallel vocational schooling track running alongside academic schooling. The fact that close to 80 percent of learners who enrol for programmes in FET Colleges, Learnerships and Apprenticeships already have Grade 12 suggests that the current post-school system is highly regressive in terms of learner progression. In future it is proposed that the post-school system should focus primarily on massively expanding enrolments at NQF Levels 5 and 6.

Figure 1.1: Diagrammatic representation of South Africa's revised NQF

School grade	NQF Level	Education Band	Qualifications awarded at this level
Grades 1-9	NQF Level 1	General Education Band (Schooling)	School reports
Grade 10	NQF Level 2	Further Education and Training (FET) Band	FET Certificates
Grade 11	NQF Level 3		FET Certificates
Grade 12	NQF Level 4		**Intermediate Skills:** FET Certificates
	NQF Level 5	Higher Education (HE) Band	Post-school, pre-degree HE: Advanced Certificates and Diplomas
	NQF Level 6		
	NQF Level 7		Bachelors Degree
	NQF Level 8		Honours and Postgraduate Diplomas
	NQF Level 9		Masters
	NQF Level 10		Doctorate

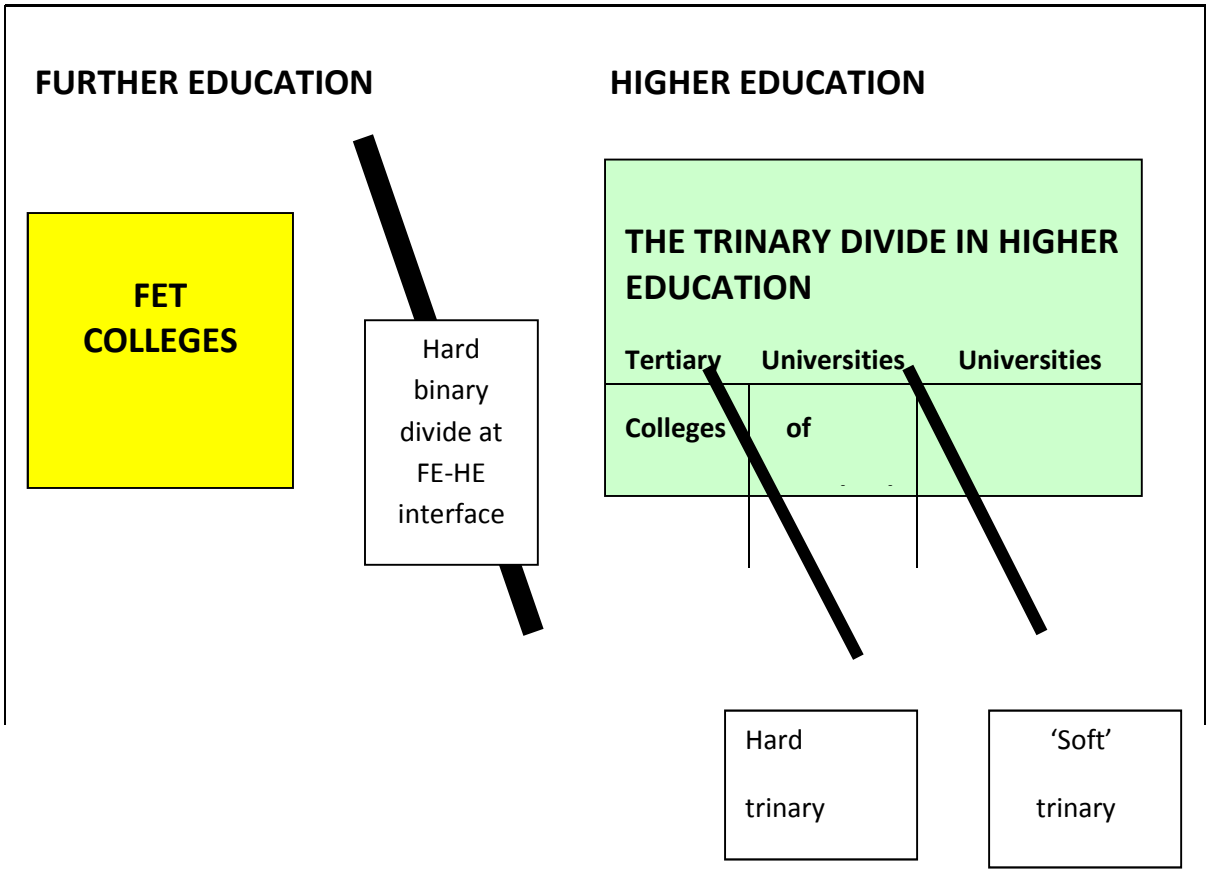
The key Intermediate phase

Source: Author's own diagramme

TWO AXES OF DIFFERENTIATION

Debates about institutional differentiation in South Africa have been largely confined to the trinary divisions within HE. Very little discussion has taken place with regard to differentiation within the FE band, or across the FE-HE interface. It is only recently that differentiation is being considered across the entire post-school system, including the FE-HE interface. To understand differentiation holistically requires a consideration of two axes of differentiation within the wider post-school system as opposed to considering only the single trinary divide of past debates. Figure 1.2 illustrates these two axes:

Figure 1.2: Diagrammatic representation of the two axes of differentiation



Source: Author's own diagramme

As is suggested in Figure 1.2, institutional differentiation across the entire post-school system is complex and multi-layered. Although policy has sought to soften the trinary divide within HE, its historical footprint of division still carries significant power. In contrast, almost no policy attention has been given to the hard binary divide between FE and HE, and as a consequence, few opportunities for articulation and progression exist between these two education sub-systems.

STRUCTURE OF DISCUSSION

To accommodate the complexities inherent in this multi-faceted differentiation process, this report has been structured into three separate sections. Differentiation in higher education will be considered in the first section. A brief history of the evolution of differentiation policy in higher education will be outlined, including the dilution of the divide between the university and technikon sectors – which is now represented as a 'soft' divide in the diagramme above. The discussion here will focus on the three central differentiation tensions currently characterising higher education: Firstly and secondly, the need to satisfy both the 'research' and 'teaching' functions; and thirdly, differentiating effectively between an 'academic' and 'career-oriented' focus (the 'polytechnic' function).

Two sub-sectors usually neglected in analyses of differentiation in higher education are then discussed in a second section. These are the publicly funded 'Tertiary Colleges' (for example, nursing, agriculture and police colleges) as well as private higher education institutions. And finally, issues of differentiation in the post-school, pre-degree sector (including the FET college sector) are discussed in a third section. The report concludes by considering a number of research proposals on institutional differentiation in South Africa.

SECTION THREE:

A BRIEF HISTORY OF DIFFERENTIATION IN SOUTH AFRICAN HIGHER EDUCATION

The origins of post-school institutional differentiation in South Africa stems from the Van Wyk de Vries Commission of Inquiry in 1974. There were two dimensions to this institutional stratification: a rigid trinary divide within tertiary education (tertiary colleges, technikons and universities), and a binary divide which still characterises distinctions between FET colleges and HE institutions (RSA, 1974).

These rigidities came under intense scrutiny after the dramatic political changes of 1994. The policy debates which ensued in this period were driven by a concern for the rigidity of institutional differentiation and the way in which it restricted articulation between the differing sectors of the educational system.

FUNCTIONAL AND FLEXIBLE DIFFERENTIATION

The higher education policy formulation process which took place between 1996-2003 vacillated between two opposing positions: support for a single or unified system of higher education versus support for the continuation of the binary divide between universities and technikons in South Africa. The official position adopted in the White and Green Papers of 1996 and 1997, and enshrined in the higher Education Act of 1997, was that of a single system regulated as a coherent whole, applying uniform norms and procedures with sufficient flexibility to allow for diversity in addressing the multiple needs of highly differentiated learner constituencies.

The second position evolved as a result of the considerable opposition to the idea of a unified system during the deliberations of the National Commission on Higher Education (NCHE) which sat in 1996. This opposition arose from two sources: from the technikons themselves, and from the leadership of the historically disadvantaged institutions (HDIs) who believed the new approach would put them yet again at a disadvantage because of their lack of capacity to respond creatively to new programme offerings. The interim Discussion Document of the NCHE reported that elements within the technikon sector had made submissions that argued strongly for the retention and reinforcement of the technikons as a distinct sector with a unique mission within higher education. The case of the technikons' support for 'functional differentiation' rested heavily on:

> … the need to ensure an appropriate mix of graduates and diplomates to meet South Africa's broad human resource needs. The view that the current mix is skewed in favour of university graduates, and the proposition that "career education" is best ensured and protected within a higher education sector dedicated to this purpose. (NCHE, 1996a: 55).

The evolution of the idea of a single system, termed 'flexible differentiation' in the NCHE documents, would occur in terms of institutional missions and programme mixes. Institutional differentiation in

this context would evolve in terms of a planned process based on emerging national and regional needs and not the inherited sectoral location of the institution (NCHE, 1996a: 56-57).

Faced with these opposing positions, the final report of the NCHE fudged these differences by adopting a middle-ground position. The NCHE resolution reads:

> The Commission's task is not to propose a unified, binary or stratified institutional structure for the single co-ordinated system, but to recommend a set of transitional arrangements that will hold while national and regional needs are clarified, planning capacities are developed and institutional development proceeds. The Commission believes that the system should recognise, in name and in broad function and mission, the existence of universities, technikons and colleges as types of institutions offering higher education programmes. But these institutional types should not be regarded as discrete sectors with mutually exclusive missions and programme offerings. The new system will evolve through a planned process that recognises current institutional missions and capacities, addresses the distortions created by apartheid, and responds to emerging regional and national needs. At a later stage in this evolution, it may be decided whether the new system should retain the distinction between universities, technikons and colleges, change the nature of the distinction, and increase or decrease the number of institutional types (NCHE, 1996b:15-16).

Government's two-fold position on institutional differentiation - retaining functional differentiation in the short- to medium-term whilst moving to flexible differentiation (a single system) in the longer term – was sustained throughout several iterative policy rounds in the period 2000-2006 period. Government's primary concern throughout this period was that in moving towards a single system regulated by uniform norms and standards, the programme distinctions between technikons and universities should not be eroded (Kraak, 2006).

Running alongside this policy discourse on differentiation was a related yet distinct policy imperative: the rationalisation and merger of South Africa's 36 institutions of higher education. The National Working Group (NWG), the final policy initiative appointed by the Minister of Education to reform higher education in 2001, proposed an entirely new institutional landscape comprising four differing types: universities, technikons, comprehensives and provincially-based National Institutes of Higher Education (DoE, 2001a).

Government accepted most of the recommendations of the NWG. Government committed itself to maintain, 'in a flexible manner, the existing mission and programme differentiation between technikons and universities for at least the next five years' (DoE, 2002a: paragraph 4.2).

A further piece of policy reform came in October 2003 when the Minister of Education relented to pressure from the five remaining technikons through a name change to that of "university of technology". These institutions would be dedicated to the development of technology, science, engineering and related management fields.

Most of the institutional mergers took place during the 2004-2005 period. The new landscape created by this process of merger and incorporation, created a new basis for institutional differentiation comprised of 24 institutions across four diverse types: eleven universities, five universities of technology, six comprehensive universities, and two National Institutes of Higher Education. Significantly, these four institutional typologies emerged not because of a comprehensive policy or research process focussed on developing a new basis for differentiation, but rather, as a by-product of the merger and incorporation process, and in particular, the politics of negotiation which accompanied the decisions about which institutions would be merged or not, and which would become comprehensives or universities of technology. Very little research or policy work was done by the state on what the roles of the new institutions would be.

A more recent development has upset the HE typology settled on by government in 2003, and in so doing, it has unintentionally opened up new possibilities for post-school institutional differentiation. This has to do with the rather messy history of Medunsa over the past decade. Medunsa started in 1976 as a Apartheid created stand-alone single-purpose health institution focused on the training of African health practitioners. The institution grew to produce the largest number of African doctors annually. In January 2005 it was merged with the University of Limpopo. This merger was bedeviled by a wide array of problems, ranging from massive debt to logistical difficulties (the two campuses are 300 kms apart). Fierce resistance was also expressed by Medunsa staff who viewed the merger as a device to incorporate them within the University of Limpopo (RSA, 2011: 12). The Task Team appointed to advice the Minister of Higher Education and Training on the future of the merger recommended that the merger be undone – a proposal accepted by the Minister of Higher Education and Training in June 2011. Medunsa is now in the process of reverting back to being a single–purpose (health) institution. One last attempt at merger will be considered – this time with Pretoria University – but if not viable (as is likely to be the case), Medunsa will remain as a stand-alone entity (RSA, 2011).

Medunsa as a single purpose medical university changes the institutional landscape of higher education in South Africa quite dramatically. Instead of the existing four-part typology of having 'universities', 'universities of technology', 'comprehensives' and two 'National Institutes' (which in the long term are to become universities), the changes in Medunsa's status means there is a fifth type – allowing in future for other stand-alone single purpose institutions with a specialized focus such as 'medicine/health' or 'engineering' or 'information technology' – all areas experiencing acute shortages of highly-skilled professionals. With the benefit of hindsight, it can be said now that the option of single-focus stand-alone institutions was too quickly dismissed in the higher education policy debates of the mid 1990s. It has now (unintentionally) been put back on the drawing board for further consideration.

Notwithstanding this messy genesis, these five types have now come into existence, and they do provide a highly divergent spectrum of provision, ranging from institutions delivering formative general education, professional degrees and high-level research (universities), to institutions with a dedicated technology and applied research and development focus (universities of technology), to institutions offering post-school, pre-degree career-oriented education at the intermediate skill levels in regions without any higher education provider (the supposed role of the National Institutes of Higher Education) to stand-alones as described above. Comprehensives are a hybrid entity relying largely on two characteristics: they will become institutions that offer a wider regional distribution of programmes than was currently the case, and secondly, they would provide students with a wider

(more comprehensive) choice of programmes, ranging from the purely academic through to the career and vocational (DoE, 2001a: 27).

The final policy moment on differentiation in the post-school sector came in April 2010 with the hosting of a Higher Education Summit – a conference comprised of all HE stakeholders nationally and convened by the DHET. Delegates to the Summit passed the following resolutions regarding further institutional differentiation:

> The general consensus was a commitment to pursue differentiation by purpose and that planned differentiation should primarily be based on the following principles:
>
> 1. The funding formula must be revised so as to balance the functions of research and teaching as well as the specific purposes of institutions. There is a need to therefore move away from the hierarchical status accorded to research in the funding formula. It is important to note that the aim in this regard is not to stunt the competitive strengths of research intensive institutions but, to recognise other important functions of higher education institutions, such as teaching, learning and community engagement;
> 2. A differentiated HE system needs to ensure the portability of students, academics and knowledge within the system as a whole;
> 3. A differentiated HE system should not be static and should accommodate evolving institutions and their associated purposes. In addition, differentiation should not be focused on institutional ranking but on institutional purpose;
> 4. A differentiated HE system must be located within the national and regional development trajectory. Rural-based universities occupy a crucial space for access, research and strategic development and must be adequately funded and supported;
> 5. Differentiation should ultimately support the optimal growth paths of all institutions and should take into account their particular contexts, historical legacies, current capacities and realistic prospects (CEPD, 2010: 19).

These resolutions do not provide specific institutions pathways which will make differentiation a more realistic feature of our post-school education landscape. They merely open up a few new possibilities, for example differentiating on the basis of 'purpose' rather than rank and allowing new institutional forms to evolve such as the concept of a 'rural university', However, they suffer from the same indecision that has characterised the sector since the early 1980s. This places a difficult burden on researchers in the FE-HE sector who will need to clarify and perhaps even argue for certain policy positions around differentiation prior to identifying the critical areas requiring empirical, evidence-based research. Policy certainty needs to prefigure any subsequent empirical investigation – and this is a difficult obstacle to overcome.

Convergence or divergence? A global phenomenon

South Africa's slow and messy transition to a 'single' system of higher education with softer boundaries between different institutional types is mirrored in the international literature with similar developments occurring in other post-school systems globally. The international literature indicates that the central challenge facing systems which have moved from mass to universal

provision is a dilution of the strong binary divisions which characterized the elite systems of higher education – a division mostly between universities and polytechnic institutions. A far more fuzzy boundary structure has taken the place of the traditional binary divide, with processes of institutional convergence leading many institutions to imitate the characteristics and role of elite university institutions. This process has been termed 'academic drift' in the international literature (Teichler, 2002). South African higher education planners and senior institutional managers have experienced these forces of convergence first hand, with state steering mechanisms failing to ensure sufficient differentiation within the system and between institutions (Cloete et al, 2010; Fisher and Scott, 2011: 40-41; Badsha and Cloete, 2011: 16).

It is clear from the South African experience and from the international literature that the outcome of these transitions away from a rigid trinary and binary system is never final nor stable, but a product of the on-going conflict between social forces supportive and opposed to institutional differentiation. Reichert emphasizes this interplay of conflicting forces that influence institutional diversity or convergence which may exist between the different levels of a higher education system (Reichert, 2009: 13). She argues that diversity or homogeneity in higher education is the product of an interplay of forces which cannot be isolated from one another. System-level actors, institutional policies and instruments combine with individuals' values and behaviours to form a complex set of potentially conflicting forces where individual effects may either reinforce or cancel each other out (Reichert, 2009: 20). In short, the tendency towards convergence or divergence is never given or set, but is an outcome over time of these contending forces (Reichert, 2009: 13-14). Riechert argues that there are pressures for both homogeneity and diversity within the system. Relatedly, there are on-going pressures for vertical as well as horizontal differentiation:

> Horizontal differentiation would seek to create parity of esteem between different types or profiles, vertical differentiation would prioritise some types more highly than others, or define them through differences of quality standards. While vertical differentiation implies a hierarchy of values attributed to different higher education functions, supporting a redefined form of elite in the context of a massified higher education system, horizontal differentiation would call for a more equal investment in the different functions. Horizontal differentiation approaches require a varying set of incentives to be effective, which implies an increase in funding to support the expanded functions (as well as the traditional functions which are still needed as they were before). (Reichert, 2009: 154)

Significantly, given the South African experience, Reichert argues that vertical differentiation is more often chosen when limited funds force policy makers to concentrate expenditure on those functions and institutions from which they expect the highest value added. Vertical differentiation forces have grown in recent years and have been most strongly determined by research performance and international visibility. Under-funding has been another powerful determinant of vertical differentiation – institutional leaders will 'scrounge for funds no matter where they find them, and will ignore their historical institutional identity and proclaimed mission' (Reichert, 2009: 155).

> As long as restricted resources for higher education result in the prioritisation of some policy aims and institutional dimensions over others, policy declarations in favour of institutional diversity will never be more than love's labours lost. (Reichert, 2009: 155).

Such indecision on committing forcefully to horizontal differentiation is precisely what has happened in South Africa. The remainder of Section Two will outline key aspects of this indecision by looking at the way institutional differentiation has been handled with regard to three important post-school functions:

- The 'research' function
- The 'teaching' function
- The 'polytechnic' function

Managing these three roles has never been an easy task for governments worldwide. In South Africa, government policy has never been able to resolve the tension implicit in attempting to meet all of these needs. For example, the 2001 'Size and Shape' report of the CHE proposed a three-tiered higher education institutional landscape. The three institutional types were defined primarily in terms of different purposes in relation to research and teaching:

- **A bedrock HET** institution was defined as a dedicated under-graduate teaching institution with limitations imposed on the extent and spread of its post-graduate and research programmes. Its key function was to provide high quality under-graduate teaching to a wide constituency of learners;
- **A comprehensive institution** has significant post-graduate and research capabilities with its primary function being the production of new scientific knowledge and the training of the country's future cadre of high-skill graduates.
- **An extensive Masters and limited Doctoral institution** was defined as an in-between institutional structure with greater resources available than the 'bedrock' campuses to offer extensive Masters programmes, but with similar limitations to those applicable to the 'bedrocks' in relation to PhD programmes and knowledge production functions (research).

The political climate of the time refused to consider differentiation on this basis – along the research-teaching axis – and the ideas of the CHE were rejected. Yet quite a few of these suggestions have resurfaced in more recent debates, for example, in the institutional differentiation options posed by Cloete *et al* (2009) and discussed in the next section of this report. Clearly a number of critical issues in higher education policy have not been adequately resolved.

PRIORITISING THE RESEARCH FUNCTION

The first theme of note in the international literature on differentiation is recognition of the on-going dominance of the research universities in all higher education systems, and their increasing centrality to the development trajectories of successful societies operating in the new 'knowledge economy'. The strongest measure of success is still reputational and research–driven (Teichler, 2002). The push for prestige is a strong driver, and all universities aim to excel in research and view this as the main measure of academic success. Reichert argues that it is the normative value systems of faculty and institutional leadership who are anxious to create structures and programmes which 'correspond to their image of the ideal university environment. Of course, this model is not necessarily related to their university's mission and resources' (Reichert, 2009: 19). The value system of academic staff and institutional leadership play a primary role towards conformity to prevailing models of success rather than attempts to distinguish themselves from competitors.

Many higher education systems are caught in a difficult policy bind – including South Africa - of needing, on the one hand, to expand higher education to larger parts of society, and on the other, needing to continue to develop elite forms of provision.

> The need to maintain elites in some form or another seems to persist and is usually met, obliquely rather than explicitly, with differentiated, often separate higher education provision (institutions or programmes). Since the notion of elite is associated with undeserved or merely hereditary privilege, rather than being openly studied in its practices and acquired social capital, opportunities are missed not just to redefine the elite in more socially just and acceptable ways, but to develop effective compensatory measures that take account of the competences needed to access and succeed as part of such an elite. Genuine meritocracy in higher education would need considerable investment in support measures for the less privileged, not only within higher education but more particularly in secondary education. (Reichert, 2009: 155)

Government has faced and continues to face a difficult policy tension in relation to the issue of building research excellence. Much of the evidence on research outputs in South Africa since 1994 suggests that the 'Big Five' universities dominate the field by a wide margin (the universities of Cape Town, Stellenbosch, Pretoria, Wits and Kwa-Zulu Natal). Additionally, evidence from the international context suggests this research institutional capacity needs to be strengthened and significantly expanded if South Africa wishes to participate more successfully in the rapidly emerging 'knowledge economy'. Yet policy does not prioritise the research functions of these five institutions, and in contrast, provides both a relatively homogenous set of research incentives for all universities to accomplish as well as compensatory support for the weak institutions to catch-up.

South Africa has failed to resolve this tension, and carries an additional complication – that of not wanting to allow vertical differentiation (which openly prioritises elite research universities) to be seen to replicate the racial hierarchies imposed on South African society by Apartheid.

Research work done in South Africa on the elite universities

There have been two substantive bodies of research work in South Africa which have examined the question of building the institution capacity of research universities. The first was the 2005 contribution by Kruss on 'Industry-HE partnerships' and the second body of work was done by Cloete *et al* in 2009 on 'research clusters'. Both will be briefly summarised here.

The work by Kruss on industry-HE partnerships

Kruss (2005) undertook the seminal work on South Africa's research capacity with regard to participation in the 'network' or 'knowledge economy'. Her research work confirms the dominance of the Big Five although her findings also highlight a more diverse set of institutional responses to the dynamics of the knowledge economy.

Kruss's work on 'industry-higher education partnerships' entailed a detailed mapping of research expertise in three technology fields prioritized by the Department of Science and Technology – those being ICT, biotechnology and new materials. In particular, her investigation aimed to identify the extent of network forms of partnerships in these three fields at all of South Africa's pre-merger higher education institutions.

Kruss's mapping exercise at all 36 higher education institutions in 2003 aimed to identify the extent of network and other forms of partnership between industry and higher education in South Africa. Kruss defined network forms of partnership as knowledge-intensive, primarily shaped by the intellectual imperatives of both industry and higher education partners. In such strategic partnerships, the research concerns of higher education and industry partners more strongly coincide, there is more likely to be intellectual collaboration around the research, and there is a stronger focus on innovation of product or process. On the basis of this work, Kruss was able to categorise all 36 pre-merger institutions into four broad groupings of S&T research capacity in South Africa:

1. **Leading institutions** (with significant S&T research capacity, including some network partnerships): Stellenbosch, UCT, Pretoria, Witwatersrand, Natal

2. M**iddle range institutions** (with less capacity than the frontrunners): Orange Free State, Rhodes, Western Cape, Potchefstroom, RAU and Port Elizabeth

3. **Emergent capacity institutions** (who have only recently begun building up S&T capacity): DIT, Port Elizabeth Technikon, Pretoria Technikon, Technikon Witwatersrand, Cape Technikon and Free State Technikon; and lastly

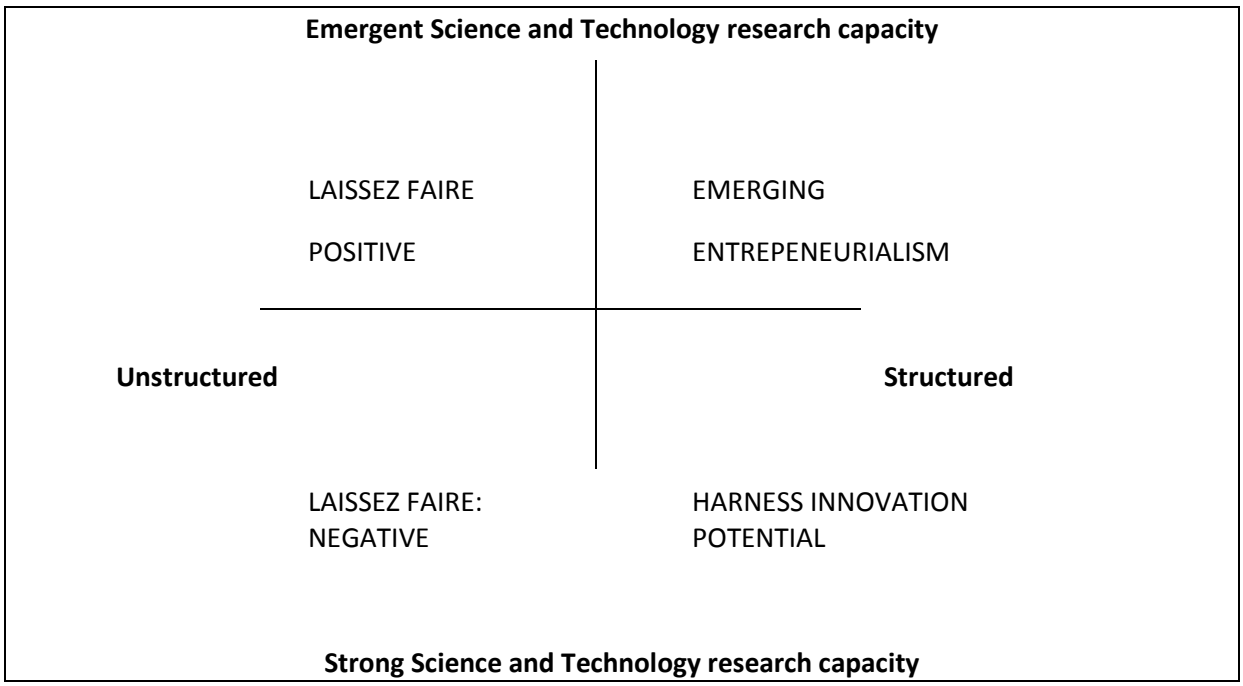
4. Institutions with **no discernible S&T research capacity** at this stage: Unisa, Medunsa, University of Venda, University of North, University North West, University of Transkei, University of Zululand, Fort Hare University, Durban Westville, Vista University, Technikon SA, Vaal Triangle Technikon, Border Technikon, Eastern Cape Technikon, Technikon North West, Mangosuthu Technikon, Peninsula Technikon and Northern Gauteng Technikon.

In trying to explain the highly divergent results shown above, and going beyond obvious explanations such as the binary divide and Apartheid's negative impact on HE institutions, Kruss added another dimension. She focuses on the types of organisational leadership and institutional culture that underpin each institution's historically evolved performance in S&T.

Kruss emphasises the key distinction between institutions which, on the one hand, have a highly structured organisational response to promote partnership with industry, or on the other hand, have a largely unstructured, laissez faire response. A second key distinction is the extent to which institutions have a strong or emergent research capacity, particularly in Science and Technology in general, and in relation to the three high technology fields specifically. If these two dimensions are

assigned to two axes, four broad patterns of institutional response to partnership are evident, as set out in Figure 2.1 below.

Figure 2.1: Higher education institutional responses to partnership



Source: Kruss, 2005

Kruss's first organisational category is that of 'Harnessing innovation potential' which relates to those institutions which view partnerships as significant. They are driven by intellectual imperatives, based on and contributing to the research excellence of the institution. Closely related, 'Emergent entrepreneurialism' evinces an emergent capacity for research in the three science and technology fields. Of necessity, they are more explicitly driven by the financial imperatives facing higher education to seek 'third stream income', at the same time as trying to consolidate and develop their scientific research capacity. 'Laissez Faire: Positive' refers to those that display a positive attitude towards partnerships, and possess a small but relatively solid emergent research base in niche areas in Science and Technology. Institutional policy generally tends to enshrine a view of partnership as an 'essential necessity' that can contribute to the funding base of the institution's research. However, these institutions do not have clearly formulated and well structured explicit institutional policies and structures to support partnerships. They tend to have a laissez faire approach to partnership, leaving much of the initiative to be driven by individual academic 'champions' on an ad hoc basis.

In the fourth group of institutions, there is a 'Laissez Faire: Negative' approach to partnership in terms of institutional strategy. This is because there is an ambivalent to negative attitude to partnerships, where, while individuals may engage in industry partnerships, the institutional policy and leadership in general tends to tolerate them as a 'necessary evil' or even more strongly, there is a concerted institutional lobby opposed to partnership as inimical to traditional academic practice.

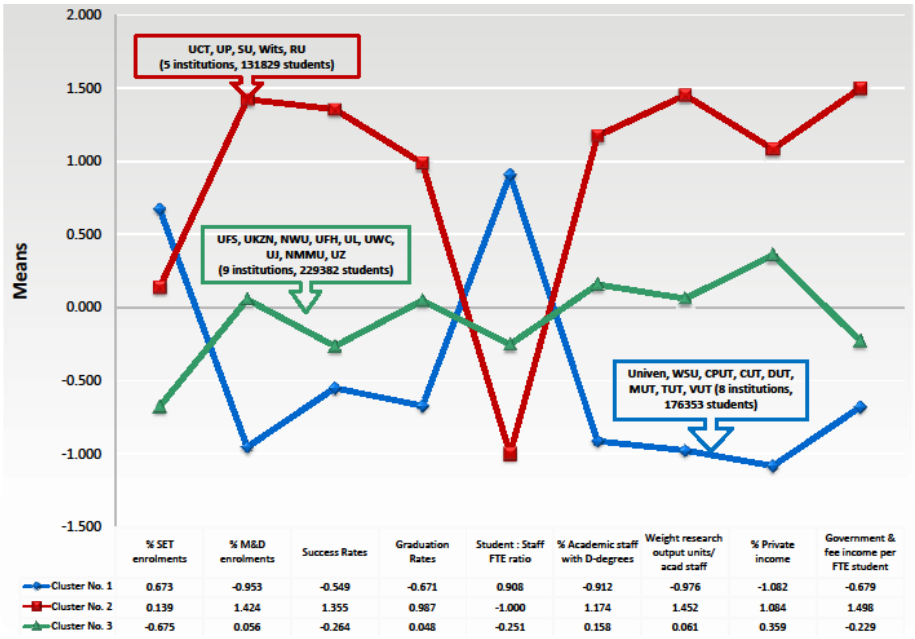
Kruss's last category is that of 'Emergent alternatives', which is a conceptual device to try to understand those institutions that have no significant S&T research capacity to speak of. The institutions which fall into this category are largely all the former historically disadvantaged institutions.

In her summation, Kruss concludes that in South African higher education, innovative capacity exists in only five or six universities, with pockets of innovative capacity in a small group of universities and technikons with emergent science and technology capacity, and in some cases, there are pockets of emergent research capacity in high technology fields that are emerging despite institutional and funding constraints. Only a few institutions are developing processes and capacity to strategically engage with industry in a way that can close the innovation chasm and address the long term interests of knowledge generation. Her conclusion supports the argument that an institutional typology such as a 'research-intensive university' is necessary so as to build upon their research strengths – as opposed to the current position which supports all institutions in the hope that they will all 'excel' in certain research niche areas.

Cloete et al on Research Clusters

Whilst Kruss's conclusion points to the on-going dominance of the 'Big five' elite research universities, but also to a significant degree of horizontal differentiation based on different modes of institutional governance and niche specialisation, Cloete's conclusions on research clusters reinforce the reality of a hierarchy of institutions based on research excellence – vertical differentiation. His starting point is highly critical of government's 'steering' mechanisms implemented since the enactment of the new Higher Education Act of 1998. Formal policy asserts that diversity will be maintained on the basis of diversified institutional missions and programme mixes based on emerging national and regional needs and priorities (NCHE, 1996b: 167). Differentiation is based on programmes, not institutional-types. Differentiation within a single nationally co-ordinated system is, therefore, based on institutions developing programme 'niche' areas - centres of excellence - that provide them with a distinct character different from that of neighbouring institutions. However, according to Cloete (2010) and Badsha and Cloete (2011), this form of 'soft steering' towards differentiation has not been that successful. Cloete argues that institutions have 'self-differentiated'. He identifies three clusters of higher education institutions from a set of institutions demarcators and performance variables. These groupings represent the outcome of shifts by all 23 post-merger institutions towards three main locales:

Figure 2.2: A plot of means for a combined set of input and output factors across all 23 higher education institutions



Source: Cloete, 2010: 15

In Cloete's Figure 2.2, the 'red' cluster represents the high achievers, the 'big five', who are the unofficial 'research universities' who produce 65 percent of the country's PhDs and Masters graduates in high-science and scarce fields. Another cluster, the blue group with 8 members, are largely at the bottom of the 'league table', and play an important role in absorbing the educationally weaker and socio-economically poorer students into higher education programmes at the Diploma level, some of which are in technical/occupational fields critical to the economy at intermediate level. The blue group comprises all the Universities of Technology as well as two comprehensive institutions, both of whom are characterised by low post-graduate and research outputs, and both historically disadvantaged institutions. Cloete is unclear about the middle band of institutions (6 universities and 3 comprehensives) – the 'green' cluster – who do not have an obvious distinctive 'purpose' or 'niche' carved out as yet.

The lessons learnt from this clustering, Cloete argues, is that the key factor behind calls for differentiation should be 'purposes' of institutions not 'ranking'. Factors such as 'efficiency' and 'quality' should be judged relative to the prior 'purposes' decided for an institution. Whilst other commentators might not agree with Cloete's hierarchical schema, they would agree with his argument that a significant degree of self-differentiation has taken place over the past two decades. Reichert's assertion earlier that institutional differentiation is an outcome of contending forces seem highly appropriate here given the high degree to which institutions have self-differentiated over the past decade.

Recent Calls to Prioritise Research

There have been a number of recent calls that the five top universities (in terms of research output) should be given greater recognition and support as 'research universities'. There are interesting differences between the Departments of Higher Education and Training (DHET) and Science and Technology (DST) in dealing with the small minority of research universities. The DST's website unashamedly lists only 7 universities out of the current 23 higher education institutions that are part of the national system of innovation, and many of its research levers, such as the Innovation Fund and THRIP, are designed to promote innovation-aligned research at these institutions. In contrast, the former Department of Education shied away from the issue of assigning a distinctive 'research university' label to any South African higher education institution. It rejected such distinctions made by the Council on Higher Education (CHE) in 2000 (CHE, 2000). However, the reality is that only a minority of today's higher education institutions can be defined as research institutions – a feature of all HE systems globally.

Secondly, the influential Academy of Science study of PHD enrolments and graduation trends published in 2010 argued strongly that government needs to classify certain universities as 'research universities' to give them the resources needed for 'ramping-up'. If these universities were to operate within a defined research community where research specialization was strongly encouraged, each institution would acquire a strong set of national research 'niche' areas highly beneficial to the economy and society (Assaf, 2010: 100).

Thirdly, both the *National Development Plan* (NPC, 2011: 278) and the *Green Paper for Post-School Education and Training* (DHET, 2012: 13, 42) argue that South Africa needs to increase PhD output five-fold in the next period if we are to build an effective science and technology foundation to participate competitively in the knowledge economy. Yet neither document explicitly calls for instituting measures that would recognize the Big 5 as distinctive 'research universities'.

STRENGTHENING THE TEACHING FUNCTION

The second key differentiation issue in higher education globally and in South Africa is the whole question of strengthening the 'teaching' function. In their influential research study for the CHE, Scott, Yeld and Hendry (2007) argued that even though the student population has changed dramatically since democracy in 1994 and is highly diverse both culturally and in terms of educational preparedness, teaching in South African higher education has not changed significantly. Traditional pedagogic methods still dominate (Scott *et al*, 2007: 40).

A large 'Academic Development' initiative has grown in higher education since the late 1980s to attempt to deal with this disjuncture between under-preparedness and traditional teaching methodology. In the more recent period, the primary instruments of intervention have been 'foundation courses' which are add-ons to the first year of study, and 'extended degrees' – which are larger packages of reforms enabling more pedagogic space for students to acquire the necessary skills and successfully complete the higher education qualification.

Where the majority of students in a full degree programme are severely underprepared, a full year of foundational modules is established which prepares students for the regular curriculum. In many instances, these foundational interventions have proved highly effective. There have even been reports of 'foundation' students outperforming students in the regular class. These foundational programmes focus on conceptual development and key academic skills rather than on making up content deficits. In more ambitious programmes these foundational courses are blended with the content of regular first-year and higher-level courses, creating 'extended degree programmes' which cover the syllabus of regular courses but take additional contact and learning time (Scott *et al*, 2007: 45).

Even with some success evident, Academic Development programmes in higher education institutions are not been given the recognition and resources they need to expand their programmes to the majority of students who require support. They are not been mainstreamed and continue to be treated as 'add-ons' to the traditional degree structure. This is one of the ironies of the current period – success rates remain dismally low, yet Academic Development interventions are often resisted within institutions as being too costly, entailing a bunch of non-experts interfering in specific disciplines about which they know little, and as a threat to 'standards' in seeking to pass students who are seen as weak. Even government has bought into this 'add-on' perspective of Academic Development. It has not sought to change traditionalist curriculum and degree stuctures nor fund extended degree programmes fully.

Fisher and Scott (2011: 9) argue that there are two particular features of current traditionalist arrangements which make alternative curriculum programmes difficult. These are the requirements of government qualifications and funding frameworks. The three-year period allocated to most generalist Bachelors degrees represents a major constraint on effective curriculum design:

> This is evident in unrealistic entry-level assumptions, 'jammed' curricula, and step-changes in levels of difficulty and work load, all of which stand in the way of students' intellectual progression (Fisher and Scott, 2011: 9).

The 'teaching input subsidy system' rigidly prescribes the number of funded credits, inhibits institutional capacity and willingness to implement extended curricula that will realistically address both the preparedness of the student intake and the need to achieve the benchmark exit level (Fisher and Scott, 2011: 46). Both of these elements of the current system – length of degree programme, and teaching credit points and their funding arrangements - will need to be changed to allow for a more flexible framework that would create additional curriculum space needed by virtually the whole intake, to realistically address the students' lack of educational preparedness and dramatically improve outcomes (Fisher and Scott, 2011: 47). Without support from government to massively expand foundational learning support interventions, higher education remains trapped in an indefinite poor throughput stalemate.

REVIVAL OF THE POLYTECHNIC TRADITION

A third axis of differentiation within the higher education system revolves around the 'polytechnic' or 'university of technology' function – a term loosely used here to describe the traditional career-oriented, applied track that existed/exists in most higher education systems (See Figure 1.2 in Section 1 to see its place in the trinary structure of higher education). Even though international scholars have commented on the process of convergence and the dilution of the binary divide as a consequence of processes such as academic drift, few have evaluated the countervailing trend of new polytechnic sectors starting as late as the 1990s and 2000s. The leading example here is Finland. A defining feature of Finland's economic renewal in the 1990s and 2000s has been the continuous linkage of education and science to the needs of industry (Benner, 2003: 136). In particular, it was the very quick response of post-school education and training to expand and produce workers needed by the increasingly knowledge-intensive economy that has been pivotal to the success of the past two decades (Dahlman *et al*, 2006: 106).

Finland has always had a solid vocational education track in schools which runs parallel to the general education track for the last three years of secondary schooling. Significantly, 40.1 percent of learners exiting the junior secondary phase choose vocational schools. This is a high participation rate in the senior secondary vocational phase, largely due to the fact that it is of equivalent quality to the general schooling track and also enables access to university education (FMoE, 2008: 24).

Higher education is free in Finland, and as a consequence, participation rates are high – at 85 percent of the 18-24 age cohort, this is one of the highest in the world (Dahlman *et al*, 2006: 102). There are currently 20 universities and 29 polytechnics in Finland. Ten of the universities are multidisciplinary institutions, and the other 10 consist of 3 technical universities, 3 schools of economics, and 4 schools of arts. They are all publicly funded. Ten of the polytechnics are privately run. The size of the system is as follows: there were 114 730 polytechnic students and 152 198 university students in 2007 – a total of 266 928 students (MoE, 2008: 37-39).

The polytechnics are a recent institutional additional to the education system. They were introduced in the early 1990s – initially in a piloting phase (to ensure quality and standards) from 1991 onwards, and then more permanently, since 1996. They were formed out of the amalgamation of former post-secondary vocational institutes. Polytechnics emphasize connections with work and practice. The research conducted in polytechnics involves cooperation with private and public enterprises. They are multi-disciplinary in focus and regional in organisation so as to contribute to regional development and regional innovation systems. They offer bachelors and masters degrees which articulate well with the university system. Polytechnic masters programmes require three years of prior work experience before enrolment.

The case of Ireland is similar. A key underpinning factor in Ireland's turnaround has been its education and training system. Universal and free secondary education has been provided for the past thirty years, and participation in post-secondary education has risen impressively in the past decade (INDP, 2007: 192).

The Institutes of Technology produced 14 600 graduates in 2006 at the non-degree NQF levels 6 and 7, with 43 percent of graduates in science and technology fields. Ireland is placed third within the OECD in terms of participation rates in this type of non-degree higher education. The Institutes also produced a further 8000 graduates at Level 8 on the NQF – the degree level. (FAS, 2007: 49; 58). The Universities produced a further 16 700 level 8 graduates in 2006, creating a total cohort of 24 700 degree-level graduates in 2006. The institutes therefore produced 32 percent of Ireland's degree-level graduates – all in applied, career-oriented fields – something which cannot be said about the South Africa's universities of technology (FAS, 2007: 57). In terms of research degrees, a total of 24 500 people were enrolled for Masters and Doctorates at the Universities and Institutes of Technology in 2006, and 13 000 students graduated that year. This included 5070 postgraduate diplomas and certificates, 7150 masters and 780 doctorates (FAS, 2007: 63-64). The combined total of students in higher education in 2006 was 136 000 (INDP, 2007: 200). The participation rate for 18-24 year olds in higher education rose from 25 percent in 1986 to 55 percent in 2006 – an enrolment rate which more than doubled over two decades (FAS, 2007:16).

In South Africa the polytechnic tradition has been diluted by processes of academic drift and mimicry. The sole emphasis of the universities of technology today appear to be that of providing career-oriented diplomas and degrees – with some post-graduate teaching thrown in. Little thinking has been put into the role of universities of technology in the modern economy. Although references are made to having an applied role, it would appear that no distinctive philosophy has emerged that separates the universities of technology from academic universities in terms of intermediate skilling and applied research work.

A recent study of the South African national system of innovation done by the OECD in 2007 has provided some illumination on this question. This report (OECD, 2007) focuses on the design, engineering and related management and technical functions (DEEM) of private firms, which are best addressed through high levels of institutional interaction between firms and external agencies such as polytechnics at localised and/or region levels. The OECD argues that it is these internal DEEM capabilities that define a firm's dynamism – its ability to overcome uncertainty by changing and doing things better and operating more effectively. Polytechnic entities such as the former technikons and the specialist industrial sub-divisions of the CSIR are crucial in providing DEEM support activities. They provide technology transfer services that have more direct industrial application, typically helping companies move a little beyond what their internal capabilities would otherwise permit, reducing the risks and increasing the rate of innovation (OECD, 2007: 112). The university system is not a good tool for providing this kind of support:

> Universities generally lack the hands-on understanding of production and of running a business that is needed to tackle the needs of small firms, and can generally deal well only with small, technology-based firms that have high absorptive capacity. Most other small firms struggle to speak the language of the professors and are too distant from them even to make contact. (OECD, 2007: 121)

The services provided by these polytechnic institutes include applications-oriented knowledge and technology transfer, specialized test and certification equipment to meet various quality requirements in production. They are services not easily accessed by small firms in the private sector. Smalls firms benefit from these services because the reduction of risk enables them to go one step further which they would not do on their own (OECD, 2007: 123).

Such a conception of DEEM - as a specific non-R&D capability crucial to industrial renewal and yet distinct from formalised R&D activities – was not present in the higher education policy formulation process of the late 1990s and early 2000s.

The reasons for the neglect of these DEEM activities are complex but a number of causal factors can be identified. Firstly, the phenomenal growth of the services sector in South Africa and globally (Scott, 1995: 59) over the past two decades has shaped perceptions that this structural shift has coincided with a diminution of the contribution of manufacturing. This perception of course is erroneous, but it has contributed to a dramatic change within the technikons away from the hard engineering and applied sciences towards courses in the soft sciences such as commerce and management, humanities and social sciences. Indeed, these developments triggered what has come to be referred to as the 'academic drift' of technikons - a term referring to their mimicking of universities and the abandonment of their traditional DEEM role. In recent years, the universities of technology have concerned themselves largely with the processes of certifying graduates in qualifications across the whole gamut of academic fields. There has not been an equivalent focus on their distinctive applied research role, particularly in DEEM fields.

The political and economic restructuring which accompanied the demise of Apartheid and ushered in the new democratic dispensation brought with it severe costs for the DEEM function, the most punitive being the rightsizing and/or privatising of the state-owned enterprises. In so doing, the strong cooperative relations previously built up between the state-owned enterprises, the technical colleges and technikons to train and skill artisans, technicians and technologists was downscaled and in many instances permanently lost (Kraak, 2008a).

These two changes have coalesced over the past two decades in such a way that the universities of technology are primarily concerned with teaching and instruction and far less so with the applied design, engineering and related management and technical functions of private firms, with little if no institutional interaction between firms and external agencies such as polytechnics at localised and/or region levels. The neglect of the latter function has become so extreme in some cases, that certain universities of technology have struggled to place their final year students in appropriate internships. According to Du Pre, almost 40 percent of final-year students in certain institutions were affected by this problem in 2005 (See JIPSA, 2006).

The higher education policy process was not commissioned specifically to study the manner in which technikons execute their polytechnic functions, nor did it concern itself with making an appropriate distinction between the research functions of universities and polytechnics. Policy and the subsequent legislation distinguish these two institutional entities purely in terms of their differing teaching programmes – the one primarily offering national diplomas (with some BTech degrees), the other offering degree and post-graduate qualifications across the board.

Universities of Technology were formally instituted by the Minister of Education in October 2003 under duress because of pressure from the Committee of Technikon Principals who sought the name change from 'technikon' to 'university of technology'. In so doing, this decision was not informed by a rational process of policy development, but rather, through administrative fiat arising from

political lobbying. No government policy documentation has evolved to explain the new category and its institutional functions (Kraak, 2006).

FURTHER RESEARCH WORK NEEDED

All three of these issues require further research work. Kruss's pioneering study of 'industry-HE partnerships' is now nearly a decade old, and was done in the pre-merger era. It would be very useful if a similar study was done post-merger, taking into account the reduced number of institutions, their changed categorisation, and the key question of whether the merger process has enhanced or restricted the research-industry relationship.

New work in the area of 'foundational degrees' and 'more flexible frameworks for higher education teaching' are top priorities for further research, but the precise topics will require communication with the 'Academic Development ' community to avoid duplication of work.

Most importantly, new policy research is required on the 'polytechnic' function globally, and the extent to which South Africa's universities of technology are appropriately aligned to these functions or merely imitating university practices.

Ignored sectors

The next section will now examine two sub-systems of the larger post-school system which are largely ignored in both higher education policy and research. They are state-funded 'Tertiary Colleges' and private higher education providers.

SECTION FOUR:

NEGLECTED POST-SCHOOL INSTITUTIONS

A highly neglected sector in terms of policy formulation are the tertiary colleges – mostly all post-school single-focus educational institutions – offering programmes in agriculture, nursing, teaching and policing/security. Scott (2011) has written the only recent paper on this sector, and accurate size and shape data is hard to come by. Neglect has not only occurred in research terms, but also in policy terms, and specifically, the more effective integration and coordination of all these institutions within the formal post-school system.

The second part of this Section refers briefly to private providers in both FE and HE. Private providers constitute another player in post-school education neglected by policy.

PUBLIC TERTIARY COLLEGES

Nursing colleges

The nursing colleges are probably the biggest set of additional post-school institutions. The South African Nursing Council (SANC) differentiates in terms of colleges (institutions that are established, governed and managed by the Provincial Health Departments) and schools (institutions which are under the auspices and authority of the hospitals to which they are attached). In reality, the sector is highly chaotic, with a great variation in institutional form, and with enrolments slowly declining. There are currently 124 public Nursing Colleges most of which are small institutions with an average enrolment of 180 learners per annum. Of these, 120 offer training and four operate as administrative centres responsible for management and administration of numerous campuses and satellites attached to them. Student enrolment and graduation data is as follows:

- A total of 21 462 students were enrolled in public nursing colleges and schools across the country in 2009. There were a total of 5 312 graduates in 2008.
- The 'Four-Year Comprehensive Programme' (NQF level 5) recorded a significantly high participation rate of 57% of all students - 12 301 students (with 1386 graduates). The 'Enrolled Nursing Programme' had the second highest participation rate at 2 539 students (1312 graduates). The 'Bridging Course for Enrolled Nurses Leading to Registration as a General Nurse or a Psychiatric Nurse' had the third highest participation rate of 2 764 student nurses registered for the programme (735 graduates). (DoH, 2010: x-xiii)

These are extremely small enrolments and outputs across which is actually a vast nursing institutional infrastructure. In contrast to private sector output in the nursing field, these public nursing colleges are performing poorly. They are making a minimal contribution to the post-school

sector. As Scott indicates, the situation is dire partly because of the lack of cooperation between the health and education departments both nationally and provincially.

Agricultural colleges

Scott indicates that there are twelve single purpose public agricultural colleges in South Africa, all managed by the national and provincial Departments of Agriculture. Scott argues that the protracted period of uncertainty accompanying changes to the FET and HE landscapes has 'impacted negatively on these colleges in terms of reduced institutional capacity, diminishing morale, a drop in standards and a deteriorating infrastructure' (2011:3).

The colleges offer general qualifications on the NQF at levels 5 and 6, and thus belong in the Higher Education band. Significantly, one of the colleges is in a 'franchising'-type collaboration with a higher education institution by offering a degree programme in Agriculture. The institutions are Elsenburg College and the University of North West. Similarly, Madzivandila College is offering post-school Learnerships accredited by AgriSETA.

There is also a small focus on the training needs of emerging farmers at three of the Colleges - Solo, Tompi Seleka and Madzivandila – mostly through short courses at NQF Levels 1-4. Again, these 12 tertiary institutions are not effectively integrated within the wider post school system.

Police and defence colleges

The same can be said about the Policy Colleges – 25 institutions with 11 offering NQF Level 5 programmes. The military and correctional services also have an extensive infrastructure for internal in-house training. None of these are adequately audited in proper 'size and shape' studies.

Policy options

What is certain is that South Africa has an extensive post-school infrastructure that is not been sufficiently exploited by government to ramp-up enrolments, particularly at the critical intermediate NQF Levels 5-6 (Cosser, 2011: 2). The Green Paper on post-school education offers two possible policy options:

> **Option one**: Improve co-ordination between the DHET and other departments responsible for colleges. This would include working to ensure possibilities for these colleges offering general education programmes like the National Senior Certificate for Adults or a specially tailored NCV, and ensuring that quality assurance arrangements meet the needs of the different departments.
>
> **Option two:** Shifting responsibility for some or all of these colleges to the DHET, but retaining a close relationship with their former departments, particularly regarding curriculum. The advantage of this option is that it would allow more coherence in the post-school system as a whole.

The Green Paper maintains that whichever option is adopted, the priority is developing a coherent framework that allows these colleges to fit into the post-school system to ensure greater coherence and articulation possibilities.

RESEARCH ON PRIVATE PROVISION

Kraak (2012b), in a briefing paper to DHET on the private post-school sector, shows that both the private FET and HE sectors have not grown over the past decade – a development out of synch with the rest of world. This is largely due to government's heavy hand in regulating the sector. His argument will not be reproduced here. Rather a few observations will be made about how private can and is shaping the differentiation of the post-school sector now and in the future.

Government has significantly relaxed its opposition to private provision. It does so in general terms without proposing any specific areas for consolidation and expansion. For example, the National Planning Commission report *National Development Plan: Vision for 2030* (NPC, 2011) argues that 'private HE institutions can play a greater and better-defined role in the HE landscape' (2011: 268). Similarly, the *Green Paper for Post-School Education and Training*, speaks of creating a more enabling environment for the private sector, although it also expresses concerns about the complex diversity of the sector and the onerous task of quality assurance and accreditation (DHET, 2012: 5, 33). And lastly, many influential commentators are now calling for a greater role for the private sector in building the post-school sector (Lolwana, 2009; Cloete *et al* 2009, Badsha and Cloete, 2011).

In more recent work, Kraak (2012a) proposes that the private sector can make a significant contribution to the expansion of provision at NQF Levels 5 and 6. In fact, the three largest private trainers of nursing qualifications – Netcare, Mediclinic and Life Healthcare – all have the capacity to train beyond 2000 learners per annum, and would expand dramatically into fully-fledged multi-campus, multi-programme private health 'colleges' if they were allowed to train at the HE qualifications level.

Kraak proposes the growth of the private sector through being granted the right to offer higher education qualifications, and through 'franchising' arrangements with local and international HE institutions. Adopting these two measures will add immeasurably to the differentiation of the post-school landscape.

DUAL SECTOR INSTITUTIONS – FRANCHISING

When institutions in public higher education collaborate with institutions in the FET College sector – usually through various 'franchising' mechanisms – they create what are termed 'hybrid' institutions operating at the FE-HE interface. Gourley (2008) describes the dynamics of this FE-HE interface in the United Kingdom over the past two decades. The 1990s were a period of 'low policy' with regard to state steering of the FET College sector. Control was relinquished to market forces and competition as the main drivers of change and competition. A period of unplanned and ad hoc expansion followed, in particular 'through the use of the franchise mechanism, a phase during which

private sector business models including franchising were introduced' (Gourley, 2008: 18). This period (late 1980s through to the mid-1990s) witnessed the dramatic expansion of British higher education, especially in the non-university sub-sectors. The participation rate for young people in full-time undergraduate education doubled to over 30% and the size of the student population increased by more than half (Gourley, 2008: 18).

This laissez faire growth pattern continued up until the Dearing Report of 1997, which was so impressed with the participation levels achieved that it recommended that renewed growth should be concentrated at the sub-degree levels in further education colleges. Dearing also recommended that these FE colleges should be funded directly for this 'special mission' and, to prevent any erosion or drift in this mission, that no growth should be allowed in the first degree or postgraduate fields. Dearing was suspicious of the franchise model, and the new quality assurance body for higher education was asked to regulate and contain its development (Parry, 2006: 13).

This growth of HE in the FE sector was not uniform across the UK. Indeed, by the mid-2000s there were two discernable models of FE-HE articulation in the English and Scottish systems. In England, about 11% of higher education students are taught in further education settings and most of them are concentrated in a minority of colleges. In Scotland, by contrast, 25% of all higher education students are enrolled in further education establishments and nearly all colleges have significant amounts of work at these higher levels (Parry, 2006: 4). The English model is ambivalent about further growth whilst the Scottish model is poised to increase HE enrolments in FE colleges beyond 25 percent.

The growth in pre-degree enrolments in the United Kingdom was to receive a boost in the early 2000s when the Blair government launched a new two-year 'foundation degree' – which was invented to enhance the standing of vocational sub-degree higher education and, over time, to replace previous qualifications at this level. A target of 50% of the 18 to 30 age group in higher education was identified to lead the drive to widening participation, to close the 'skills gap' at the intermediate levels, and to achieve near-universal access by the year 2010 (Parry, 2006: 14). In what the government described as a 'structured partnership', employers would contribute to the design and operation of the new qualification, colleges would teach much of the programme, and universities would award the short-cycle 'degree' (Parry, 2006: 14).

These new institutional forms are temporary and fragile, based on particular government policy edicts over time. Governance is a major problem as it requires joining two different systems of administration and regulation across the FE-HE divide. As South Africa enters a new phase of expanded growth at the FE-HE interface, many of the dynamic opportunities thrown up by these dual sector arrangements must be researched and adapted to South African conditions. Many of the problems can be avoided.

PROPOSALS FOR FURTHER RESEARCH IN HIGHER EDUCATION

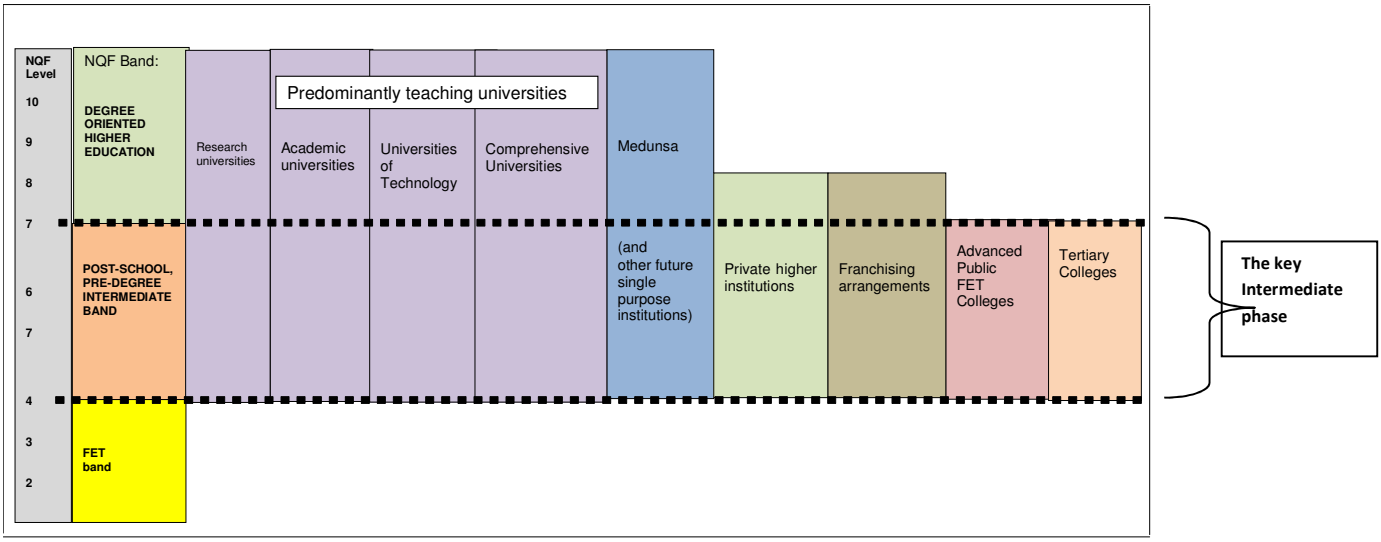
A number of research proposals are implicit in the analysis so far. They emerge because of the paucity of such research work in the country, or because previous work has become dated and new work is required.

To assist the discussion about research proposals and new policy formulation, the concept of a 'continuum' of institutional forms is adopted from the *Green Paper for Post-School Education and Training:*

> A variety of institutions are required in order to ensure that the sector serves national interests. Important for any institution is to have a clearly defined mandate and to carry it out well. Undergraduate and postgraduate programmes as well as academic and professional or vocational programmes are equally important to the country. The knowledge hierarchy that they represent should not be interpreted to represent a hierarchy of importance. The university sector should comprise a continuum of institutions, ranging from specialised, research-intensive universities to largely undergraduate institutions, with various levels of research focus and various postgraduate niches at masters and/or doctoral level (DHET, 2012: 40)

Figure 3.1 illustrates the range of possibilities which have arisen from the proceeding discussion in this report, and which need to be backed-up by comprehensive research.

Figure 3.1: Expanding provision in the higher education sector



Source: Author's own diagramme

A number of research proposals can be made arising from the previous discussion in this report, along a 'continua of institutions' as represented in Figure 3.1:

1. **Undertake detailed research on how 'Research-intensive universities' are governed internationally**. What would be central to this research would be a concern that consolidation of the research strengths of these institutions would not occur at the expense of other teaching-intensive institutions.
2. Formulate through comparative research a **comprehensive definition of the role/purpose of the Universities of Technology** (UoT). Its role should not simply be the 'certification' of non-degree vocational and technical qualifications at the intermediate level**.** Whilst the research universities focus on basic science and formal R&D research, a more technological and applied role must be outlined for the UoTs – based on best practice elsewhere in the world. According to the OECD report on South African innovation cited earlier, UoT should be more applications-oriented, defined by regular interactions with industry in improving design, engineering, managerial and technical (DEEM) capabilities especially in small and medium sized firms who do not have formal R&D capacity. According to the OECD, the DEEM functions necessary for firm-based innovation are best addressed through high levels of institutional interaction between firms and external agencies such as polytechnics (our UoT) at localised and/or region levels (OECD, 2007). UoT must provide technology transfer services that have more direct industrial application, typically helping companies move a little beyond what their internal capabilities would otherwise permit, thereby increasing the rate of innovation (OECD, 2007: 112). Such a conception of applied technological work - as a specific non-R&D capability crucial to industrial renewal and distinct from the formalised R&D activities which occur in universities – was not present in the higher education policy formulation process of the late 1990s and early 2000s. It now requires formal definition and recognition. Further research is necessary.
3. Similarly, **undertake policy research to enable a more detailed and informed definition of the role of comprehensive institutions**. Such a study would entail, firstly, a review of the self-differentiation which has occurred to date in the five comprehensives since their merger and formation in 2005, and secondly, a review of the international developments in this field.
4. Investigate the revival of the **polytechnic tradition** in certain parts of the world and determine its relevance to South Africa and its UoT.
5. **Research around a more 'flexible qualifications structure'.** As the teaching function is being increasingly emphasized, so more information is required four-year degree programmes which aim to achieve high quality teaching and high success rates. Developing a more flexible qualifications structure will allow more curriculum space needed by virtually the whole higher education intake, to realistically address the students lack of educational preparedness and dramatically improve performance outcomes (Fisher and Scott, 2011: 47). This will entail both the introduction of a four-year undergraduate degree structure and the blending of Academic Development courses into the curriculum mainstream for the majority of students in higher education. Currently, only 44 percent of students graduate, and very few finish their degrees in minimum time. 54 percent of enrollees drop out. The current system is therefore highly wasteful and a four-year degree structure will not prolong average student time spent in instruction. A revised foundational degree structure is intended to dramatically reduce student 'pile up' where, as is the case currently, students take far longer than the minimum time to complete their degrees. A four-year degree structure is also intended to dramatically increase student performance outcomes across the entire system. Only once these performance conditions have been achieved in the higher education system as a whole, can a new phase of expansion in enrolments be considered. Building quality

teaching universities as described above is as important a task as promoting the research universities, and will require an equivalent investment in financial and physical resources.

SECTION FIVE:

DIFFERENTIATION IN THE POST-SCHOOL, PRE-DEGREE SECTOR

SOUTH AFRICAN FET COLLEGES

FET Colleges are the most important institutions operating in the post-school, pre-degree sector. However, the issue of differentiation in the FET College sector (and in particular, its articulation with the HE sector) has received less attention than research work done on differentiation processes in the HE system itself. A brief history of policy changes in the FET College sector is needed to understand this neglect.

During the heyday of Apartheid, South Africa had 150 FET Technical colleges. These institutions were highly stratified, distributed across four racially defined educational administrations that existed within Apartheid South Africa (one each for White, African, Coloured and Indian students) but also across the ten so-called 'independent' homelands which were set up for Africans by the Apartheid regime. As a consequence of this racially divided past, these institutions, when joined into one unified administration by the democratic government of 1994, were deeply differentiated in terms of institutional culture and history, resources (financial and physical) and spatial location.

Government – both prior to democracy and post democracy – has shied away from making hard decisions on differentiation at the FE-HE interface for more than three decades. The De Lange Commission of 1981 proposed the `Five Year College', based on the Taiwanese experience. The Five-Year College proposal was geared strategically to addressing the severe skill shortages at the middle and high person-power levels. Students would be enrolled after having completed Grade 9. The benefits of such intensive education and training at an early age, according to De Lange, were that pupils would be enabled `from puberty onwards to acquire the system of values appropriate to their careers at the middle level' (HSRC, 1981: 26).

Graduates of Five-Year Colleges would be able to continue their education at universities and technikons, entering such institutions at senior levels, possibly at the second or third year. Consequently, the Five-Year College would play a major role in facilitating mobility within the post-school system. De Lange's Five-Year College idea was quickly forgotten in the controversy surrounding its failure to decisively break with segregated education and support a single non-racial system of education. However, the idea was not lost entirely. It was resurrected in the *Education Renewal Strategy* [ERS] (DNE, 1991), published in June 1991. The ERS proposed a similar innovation: the Edukon.

The ERS sought to pursue a dual institutional strategy of both downgrading and upgrading the character of universities, technikons and technical colleges. Institutional downgrading would entail shifting many programmes from universities downward to technikons, especially all university-level diplomas and certificates. It would also entail a shift downward of many technikon programmes to technical colleges (DNE, 1991: 36, 58). Institutional upgrading would entail the following changes: raising the status of certain universities into centres of excellence as post-graduate institutions;

technikons offering some degree courses in technology; and technical colleges being upgraded into colleges of further education - to be known as Edukons (DNE, 1991).

Edukons were viewed by the ERS as important institutions capable of facilitating greater flow between the post-secondary and tertiary sectors. Edukons would have a number of functions. They could offer the academic bridging courses that were placing a huge burden on universities and technikons. They could also offer `transfer credits' for study at universities/technikons, as well as various vocational programmes (DNE, 1991). However, the advent of the democratic government in 1994 meant that the 'Edukon' proposal was scrapped and forgotten.

Instead, the democratic dispensation which came into power in 1994 resolved to undo these institutional inequalities through a process of institutional merger and rationalisation as was the case in HE as described above. The Further Education and Training Act of 1998 established a framework for the FET sector based on the idea of a nationally coordinated single system of regulation. In 2001, government published the *New Institutional Landscape* document (DoE, 2001b), which proposed 50 new merged public FET colleges with a mandate to improve quality and responsiveness of provision in the sector. The aim of the mergers was to create 50 large, multi-site institutions with increased autonomy; a mixture of specialisation and multi-purpose institutions; increased focus on open and distance learning; better articulation and collaboration with higher education; and a stress on partnerships with government and the private sector (Akoojee, McGrath and Visser, 2008).

Restricting N4 – N6 provision

These mergers were accompanied by rather restrictive constraints placed on N4-N6 provision – key vocational programmes operating at the NQF Levels 5 and 6. The Department of Education did so to encourage the colleges to focus provision on the FET band - that is, Levels N1-N3 rather than the Post-N3 levels located at Level 5 and 6 on the National Qualifications Framework. The restriction on Post-FET delivery to 10% of provision was very limiting. Although this administrative proposal never became official policy, one of its affects has been the reduction in the provision of Post-FET courses since 2001. Post-FET provision has been reduced from 57% in 1998 to 38% in 2002 to 33% in 2010 (Cosser, Kraak and Reddy, 2012: 68). This development poses problems today for those colleges that have the ability to build stronger articulation pathways between the FET colleges and higher education, particularly the new universities of technology.

More recent policy history

Other policy developments in the FET sector have included a new emphasis on expanding enrolments from the current 300 000 headcount learners to 1 million in the medium term, and a recapitalisation exercise announced by the Minister of Finance in March 2005, which committed R1.5 billion over three years, and which was aimed at supporting learner expansion through improved curriculum delivery and improved physical infrastructure at all of the colleges (Akoojee, McGrath and Visser, 2008).

The *FET Plan* of 2008 spoke more explicitly about the need for greater diversity in the College landscape. The *Plan* proposed that this should be developed through a 'Programmes and Qualification Mix' (PQM) – a planning and steering system similar to that used in higher education - which would allow individual colleges to develop 'niche areas with specialist excellence in specific fields or disciplines' (DoE, 2008: 46). The Department, according to this framework would determine, in consultation with colleges, 'which institutions should be offering which programmes'. In this way, there is a possibility of certain campuses becoming centres of excellence focusing on particular vocational fields such as ICT, Engineering, Hospitality or Tourism (DoE, 2008: 46). The *FET Plan* also spoke strongly about many of these niche institutions utilizing the internet through quality e-learning and distance programmes, and in this way, providing learning to a more diverse set of environments. This would also require some colleges adopting a multi campus structure with e-learning and residential facilities (DoE, 2008: 46). The *Plan* was keen to see the establishment of large campuses, 'big enough to create economies of scale and to ensure that the requisite infrastructure and resources required by the curriculum were in place' (DoE, 2008: 47).

Another voice arguing for greater institutional diversity and for greater articulation with higher education came from delegates at the FET College Round Table held on 9 April 2010. Delegates argued that:

> … colleges must not be restricted to NQF level 4 (they must not be 'glorified high schools') and should offer programmes at least up to NQF level 5. In this view, horizontal and vertical accessibility would mean bridging the gap from school to college to HE/workplace and providing an alternative to high school. It was generally acknowledged, however, that progression to higher education should not be the main focus of the colleges. (DHET, 2010b: 8)

In a report on the post-school youth crisis in South Africa, Cloete *et al* (2009) have also made a strong case for greater institutional diversity and articulation. Cloete *et al* outlined some of the benefits of a differentiated or more diverse post-school system. Such a differentiated system:

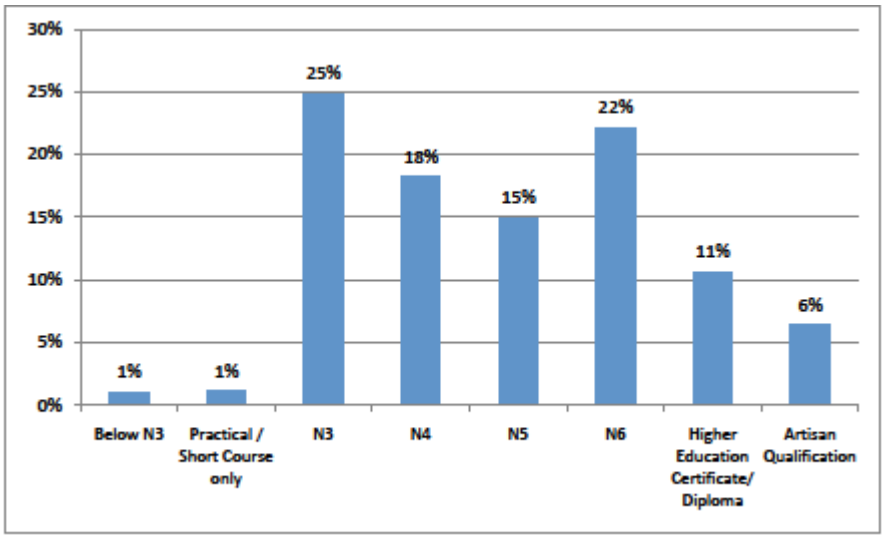
1. Improves access for a diversity of students
2. Enables student mobility through different access and exit points
3. Responds to the ever increasing complex labour market
4. Accommodates different interests, needs and identities
5. Improves effectiveness and efficiency through competition
6. Encourages institutional experimentation
7. High participation with high differentiation contributes to equality and development. Low participation and high differentiation result in high inequality and serves only certain sectors of the population and labour market (Cloete *et al*, 2009: 6)

Lolwana, in a survey of international trends, argues that institutional differentiation is a strong feature of post-school education globally. For example, Korea and Singapore have massified their systems through a 'junior college' system. According to Lolwana, the emergence of other institutions in higher education has not only brought about a diverse system, but it has essentially done away with the exclusivity of elite pathways from school to higher education (2009: 34). She argues further that:

> FET Colleges should not entertain awarding degrees but certificates and diplomas which would have significant recognition in higher education. But the content of the programmes should provide genuine transferability of achievements into degree awarding programmes. This is when differentiation can be seen to be articulating successfully. (Lolwana, 2009: 35)

In South Africa the achievement of higher education credentials in FET colleges has been left to individual learners themselves with little encouragement from the state. Notwithstanding this lack of support, Gewer reports that in one of his cohort studies of FET College graduates, 66% of respondents proceeded to get HE (NQF Level 5) qualifications in FET Colleges – either N5 or N6 certificates, or higher education certificates and diplomas:

Figure 4.1: Highest post-school qualification for tracer respondents



Source: Gewer, 2010: 30

Gewer's findings here are significant because it illustrates that a significant sample of learners in the South African context are determined to study further to improve their skills portfolio, and want to cross the further education – higher education (FE-HE) interface. The irony is that the state, and in particular, its policy stance on the FE-HE interface, is not keeping up in terms of facilitating and encouraging this growth.

Another problem hindering FE-HE articulation is that the new NCV certificate does not allow easy access to higher education, contrary to the principles informing its initial design (DHET, 2010a: 34). Further complicating the picture, South African post-school education and training has almost no tradition of using credit accumulation and transfer schemes (CATS) on a wide scale, especially between colleges and HE institutions. CATS are the primary mechanism underpinning learner mobility in flexible FE-HE systems globally.

Re-inforcing the above problems, the 2006 FET Act in South Africa has capped the provision of NQF Level 5 and 6 courses in FET Colleges, requiring prior Ministerial approval. These programmes must also be managed under the authority of an accredited higher education provider (DoE, 2008: 34). The FET Plan of 2008 restricts non-NCV provision to only 20 percent of total provision, but this could be increased to 50 percent in this model so that the colleges in question acquire a particular vocational niche.

EXISTING RESEARCH WORK ON DIFFERENTIATION IN THE FET COLLEG SECTOR

There are three important research and policy inputs on the FET College sector. The first is the 'Programme and Quality Mix' (PQM) framework of government. The second is a set of five different institutional configurations proposed by Cloete *et al* (2009). And finally, the third contribution is from Badroodien and Kraak (2006), working off the Danida-funded *Support to Education and Skills Development* (SESD) – a monitoring and evaluation project which was managed by the HSRC between 2003-2006.

Government's approach to a new institutional landscape

Current government policy with respect to institutional diversity has been to adopt a 'Programmes and Qualifications Mix' (PQM) approach. This was first developed in the *FET Plan* of 2008 and then elaborated in the Task Team Reports 1 and 2 to the FET Summit in September 2010. Differentiation in these documents is taken to mean that each college will be distinguished by its individual PQM, which may differ from other colleges in terms of the range and level of programmes offered, and the numbers enrolled, in response to various factors including:

- the geographical location of the college;
- the local labour market;
- the communities served by the college;
- linkages with higher education;
- regional, provincial and national growth and development plans and HRD strategies; and
- the capacity of the college to offer particular programmes, as determined by the relevant Quality Council or other quality assurer. (JET, 2010a: 4-5)

There will be a number of core programmes which FET Colleges can select when determining their PQM. These programmes are proposed as 'flagships'. They will assist the college in establishing a clear 'identity' and 'brand'. The flagship programmes should be substantive and should result in a qualification. They must also have a clear relationship to workplace opportunities and the acquisition of practical experience (JET, 2010b: 2).

The FET Summit Task Teams acknowledged, however, that the sector is not yet ready to implement a PQM approach across the board, and its successful implementation depended on the following capabilities which are currently not present in the system:

- Appropriate planning, financial and administrative capacity in the colleges
- Properly constituted, strong and effective college councils
- Effective and informed industry and stakeholder representation and engagement at the system level as well as at the institutional level
- Clarity regarding the programmes to be offered by colleges
- The capacity of quality assurance bodies (JET, 2010a: 8).

The shift to a PQM-based mechanism is a medium- to long-term project. The long-term roll-out of such a model would also require dedicated development funding which is currently not in place (JET, 2010a: 8).

Cloete et al's Five future models

Cloete *et al* (2009) propose five different institutional configurations that will act to grow the FET college sector and open up articulation across the FE-HE divide. The five models proposed are:

1. ***Model 1: The franchising route:*** In this model a FET college would be given a 'franchise' by a higher education institution to offer a particular HE learning programme leading to a HE qualification. The qualification would be awarded by the HE institution. Delivery of the programme would take place at the FET college.
2. **Model 2: FET Colleges offering pre-degree programmes** (for example, the Higher Certificate): this route would entail granting selected FET colleges the right to offer a limited number of specific HE qualifications in their own right if they satisfied a number of strict quality and expertise criteria. These programmes would be NQF Level 5 qualifications, many with an industry or vocational orientation. Completion of the Higher Certificate would enable students to proceed to an Advanced Certificate or to a Diploma.
3. **Model 3: Developing a strong occupational niche**: this model suggests that some FET colleges should be given permission to offer a larger number of post NQF Level 4 trade and occupationally-directed learning programmes than is currently the case. These occupational qualifications could acquire funding from the SETAs. Currently, the FET Plan of 2008 restricts non-NCV provision to only 20 percent of total provision, but this could be increased to 50 percent in this model so that the colleges in question acquire a particular vocational niche.
4. **Model 4: The Community College route:** this would entail transforming a small number of FET colleges into fully-fledged community colleges as in the USA tradition. These colleges would be given the right to offer Foundation Degrees comprising the first and second years of university study, catering for so-called transfer students.
5. **Model 5: Private Colleges**: it is clear that there is room for more formalised participation by the private sector in the FET College sector. They already have a large presence in the offering of SETA-affiliated courses. Bringing in the private sector would help expand the FET College sector towards the target of 1 million learners by 2014. (Cloete *et al*, 2009: 13-15)

These are bold proposals which have not as yet been debated in the public sphere. Cloete *et al* suggest that Models 2, 3 and 5 are the most viable options to pursue in the short- to medium-term. The irony of these proposals for new institutional forms in the post-school landscape is that versions of these proposals have been made before: firstly by the dying Apartheid regime (see Kraak, 2004: 46-70), which sought to reform post 'junior secondary education' and give it a strong vocational thrust (the De Lange Commission of Inquiry into Education in 1981 [HSRC, 1981] and the *Education Renewal Strategy* of 1991[DNE (1991]). Secondly, the policy advising bodies to the democratic

government-in-waiting in the early 1990s also made similar suggestions (See NEPI, 1992a; 1992b). The current government has tended to avoid making substantive institutional decisions in this field. This policy of avoidance cannot continue into the future.

Research work done by Badroodien and Kraak

In their unpublished paper, Badroodien and Kraak (2006) argue the policy case for further institutional differentiation in the FET College sector. The core of their analysis is based on a qualitative examination of 3 colleges each located in diverse settings across South Africa. The diversity of these contexts represents some of the complexity in the sector which needs to be captured in a more differentiated policy framework.

Badroodien and Kraak argue that there are several factors which contribute to a highly differentiated landscape in the FET college sector. As a consequence, college identities will be shaped by particular combinations of the following variables:

1. A college's historical genesis during the Apartheid period
2. Its location in differing provinces, rich or poor
3. Its insertion within communities of varying social class composition
4. Its urban or rural character
5. The varying employment levels of the industrial sectors that comprise the economic neighbourhood of the college
6. Distinctions which arise out of varying institutional size, learner age and occupational status (out-of-school youth, working adults, unemployed citizens)
7. Diversity in programme offerings
8. Differing success levels in the placement rates of graduating college students.

All of these factors play a crucial role in the construction of a college identity over time, all of which shape its effectiveness and ability to respond to the state's uniform set of goals and objectives.

Badroodien and Kraak examines three highly diverse colleges. The core focus of the College of Cape Town has been to build on its reputation for providing quality and relevant programmes and good service delivery. The college generally has effective systems of recruitment and student selection, and in recent years has focused on how best to upgrade and improve their programmes. The solid reputation for good provision is a result of its location at the centre of economic activity in the Province.

South Cape College has consciously sought to be entrepreneurial and responsive to the new training requirements of the private and public sectors of Eden District around George. This region is not as well endowed as Cape Town which has a well developed and highly diversified city-economy. South Cape has therefore gone out of its way to find new 'customers' to whom it can offer new programmes.

Mthashana College in rural KZN has evolved an entirely unique approach. The college does not have the luxury of effective student recruitment systems or a steady stream of 'consumers' for whom it can adapt its programme delivery. The lack of significant employers has forced the college to completely rethink the ways in which they provide programmes, and how they understand the needs of target markets. In recent times, the college has increasingly focused on incorporating skills centres into the college set-up, as a way of providing programmes that target the skill needs of surrounding communities. By focusing on differentiated forms of provision through its 'skills campuses' the college hopes to impact upon the basic skills of members of communities located in the isolated corners of the Mthashana region.

The three colleges are different in other ways, for example, the sectoral priorisation of their core academic programmes. The College of Cape Town has a largely 'Engineering Studies' focus, feeding trained employees into the manufacturing sector of industrialized Cape Town. The College of Cape Town also has a growing 'Wholesale and Retail' focus. South Cape College, on the other hand, has a strong 'Oil and Gas' focus given that PetroSA in Mossel Bay is the largest employer in the region. South Cape College is also prioritizing the strengthening of local government personnel in all of the small towns of the Eden Municipality. In sharp contrast, Mthashana has no significant private sector presence in the surrounding areas, with subsistence Agriculture in severe decline. As a consequence, Mthashana College has shifted to short course skills programmes for community development and the generation of sustainable livelihoods in the informal economy through self-employment.

The core differences which have emerged across these three institutional sites are illustrated in Table 4.1. These institutions are clearly not homogenous. They are located in very different environments and face distinct economic, social and skill demands and challenges. It becomes critical, therefore, to recognize the diversity and distinctiveness of each college 'type' – big city urban college, small town peri-urban college and deep rural college - in the formation of policies for the FET college sector as a whole.

The error of assuming homogeneity

Each of the three college case studies reflect a different academic profile, and each interact with the external socio-economic environment in different ways. Yet official FET college policy, in terms of its regulatory and funding norms and standards, does not recognise this diversity. Government, at both the national and provincial levels, operates on the assumption that the FET college sector is characterised by uniformity and homogeneity. This is a serious policy error which penalises, in particular, the poor and rural colleges who are unable to operate effectively because of the urban bias in current policy. But it also limits the articulation and progression arrangements of certain urban campuses, who are ready to forge partnerships with higher education institutions to the benefit of their students.

Table 4.1: The determining factors behind institutional diversity across three South African colleges

Table 4.1 The determining factors behind institutional diversity across three South African colleges

	Cape Town College	South Cape College	Mthashana College
Core identity of college	Big city urban college	Small town, peri-urban college	Deep rural college
Size	Large 14 430 learners	Medium 3 647 learners	Medium 3 218 learners
Majority population of students	46% African 41% Coloured 10% White	52% Coloured 26% African 21% White	92% African
Levels of unemployment in neighbouring communities	Medium	Medium	High
Presence of external stakeholders	Several urban based partners available	Several small town based partners available	Few partners Trying to develop rural partners amongst CBOs and local government
Origin of new income	Largely from the private sector	Largely from the private sector	From the public sector and donor agencies
Core sectoral focus	72% of enrolments are in Engineering College also has a Wholesale and Retail focus	Oil and Gas sector Local government development within the larger Eden Municipality	Declining subsistence agriculture Shift to skills programmes that develop communities

Source: Badroodien and Kraak, 2006.

Kraak proposals

Kraak (2008b), in a second unpublished paper, proposes the need for a policy rethink regarding the articulation between the FET colleges, university of technology, comprehensive universities and the two National Institutes of Higher Education. The following policy propositions are made as an opening contribution to this policy rethink. The policy proposals made here have a dual purpose, firstly, in attempting to resolve the lack of recognition of institutional differentiation in the college sector, and secondly, overcoming the barriers to mobility between colleges and higher education. It is proposed that three new institutional types should be developed in the FET College Sector. These are:

- FET Colleges (Advanced)
- FET Colleges (Intermediate)
- FET Colleges (Rural)

Underpinning the proposal for the first of these 3 typologies – Advanced Colleges – is the necessity for sections of the college sector to articulate more effectively with the higher education band in order that the intermediate- to high-skill technological needs of the economy are met.

Such proposals have been made several times before in South Africa's educational history, but they were rejected because they were perceived to amplify social discrimination and were cast aside in the generalised struggle against Apartheid. This pejorative association has survived into the current period. De Lange's 'Five Year College' proposal was geared strategically to addressing the severe skill shortages at the middle and high person-power levels (HSRC, 1981: 26). Similarly, the 'Edukon' proposal made by the *Education Renewal Strategy* in 1991 entailed raising the status of technical colleges to that of colleges of further education - to be known as Edukons (DNE, 1991: 54, 60, 61).

In resurrecting these policy ideas it is envisaged that the category 'FET College Advanced' would only be applied to a select number of merged colleges or to a specific site within a merged FET College. Not all FET Colleges have the capacity to function at the higher education level. The role and function of such colleges would be to:

- provide course programmes at NQF Level 5 and 6, thereby allowing progression through to degree programmes and stronger articulation with universities of technology and comprehensives. Given the centrality of intermediate skills at this level (NQF level 5 and 6) to the South African economy, it would be strategic to allow FET Colleges (Advanced) to offer such programmes in association with universities of technology and comprehensives.
- Such colleges would also be built around the production of priority scarce skill areas such as engineering, or around key economic sectors targeted for growth and development such as: IT; energy, oil and gas; construction and transportation; business services; tourism and hospitality; and small business development.
- These institutions could also be the sites for the implementation of advanced Learnerships, at NQF Levels 5 and higher, again, in association with universities of technology and SETAs. These advanced colleges could also offer all higher education NCV programmes including:
    - A 1-year fast track NCV at Levels 2-4 (for those with Grade 12 but who need such a foundation); then
    - NCV Level 5
    - NCV Level 6

Curriculum work has not yet been done on the NCV programmes falling in the higher education band. This will require urgent research and policy attention. Ideally, its introduction will be more smoothly executed in partnership with industry than was the case with NCV Levels 2-4 (Cosser, Kraak and Reddy, 2012).

In contrast, the majority of existing FET Colleges would be classified as FET Colleges (Intermediate) offering National Certificates at NQF levels 2-4. A crucial function of these colleges, in association with employers and government, would be to re-establish the apprenticeship system within the appropriate institutional arrangements so that South African institutions are able to meet the demand for artisans without further importation of skilled labour. In addition, strong links would need to be built with the SETAs to establish several Learnership programmes at NQF Levels 1-4. And finally, the NCV level 2-4 should be improved as an alternative track for a small group of Grade 10 school learners.

These institutions have a lot to offer the 'second economy' initiatives of government, for example: short course training of the unemployed on EPWP programmes; ABET; training and technical support

in the small business development sector and in other more labour intensive sectors such as the craft and cultural industries; tourism and construction.

The role and function of FET Colleges (Rural) would need to be dramatically different to the previous two typologies, in that these colleges do not have the capabilities to articulate with higher education, nor do they have access to vibrant sectors of the economy that would be able to absorb graduates. Their primary role would be to interact with the 'social' or 'public' economy – to assist the state in building a social safety net for impoverished rural communities excluded from mainstream economic activities. This social role would be established through support given to public sector initiatives led by national, provincial and local government such as the EPWPs, various rural development initiatives, community health worker schemes, self-employment and informal sector training schemes. The creative efforts of Mthashana and other Colleges in the FET sector are already providing certain programmatic benchmarks off which a 'rural' college typology can be forged.

Kraak (2008b) argues that only once colleges are differentiated in the manner described above that they will reach their full potential as important economic as well as social resources to the benefit of the country as a whole.

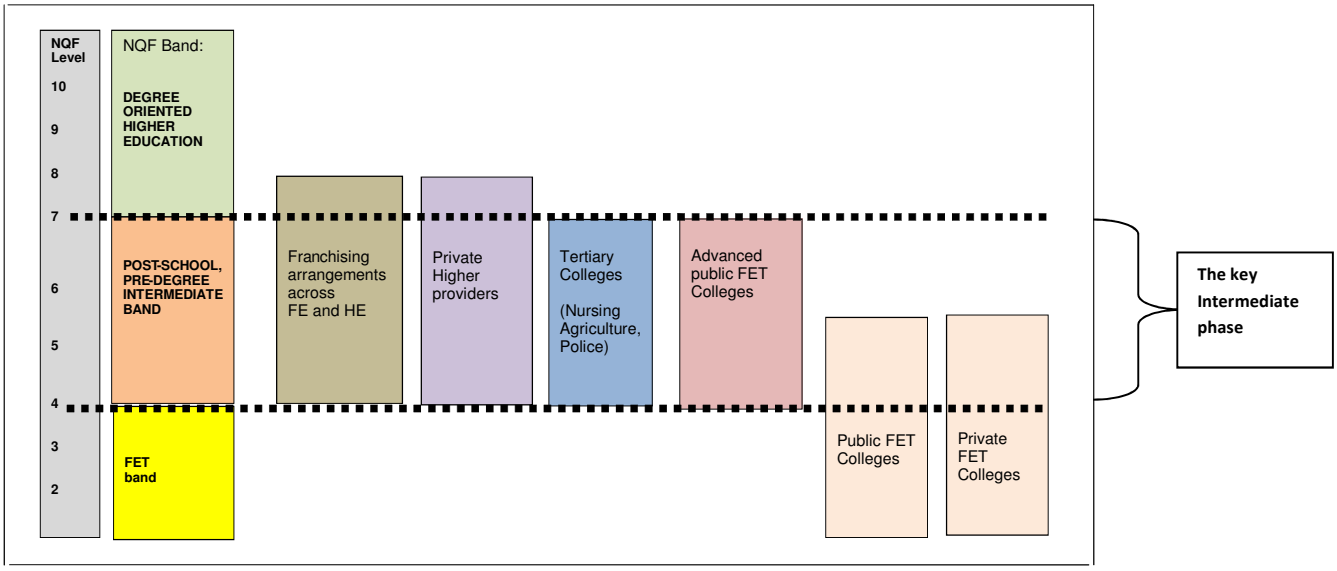
POLICY RESEARCH RECOMMENDATIONS IN THE POST-SCHOOL, PRE-DEGREE SECTOR

Most of the key thematic issues raised in this Briefing Paper are strictly policy issues and not obvious research topics. The main problem faced by the HSRC in pursuing new research themes in the area of 'differentiation' is the incompleteness and indecisiveness of the past policy process as well as the absence of significant evidence-based research in the area. There is no policy certainty which will neatly suggest clear-cut research themes.

What is required, therefore, from the HSRC and its research consortium partners, is to stipulate certain policy propositions themselves – as has been done in this Briefing - as part of the overall framework of the research consortium. Certain clear-cut policy propositions need to be articulated prior to the identification of the critical areas requiring empirical, evidence-based research. These policy propositions must pre-figure the empirical investigation. This is the task of the HSRC consortium and its overall conceptual framework guiding the forthcoming research.

With the need for policy prefiguring in mind, this Briefing proposes a series of research projects. They arise out of a envisaged future 'continuum of institutional forms' as illustrated in Figure 4.2. The idea of a future 'continuum of institutions' is a good example of 'policy pre-configuring' as discussed above, as it gives rises to a number of empirically driven research questions - as is evident below.

Figure 4.2: Expanding provision in the post-school, pre-degree



Source: Author's own diagramme

The following institutional forms and mechanisms require further elaboration and research:

1. **Advanced Colleges of FE:** Investigate the possibility of allowing a select group of FET Colleges to offer higher education programmes at NQF Levels 5 and 6. This will require a strong international comparison. These institutions, in the SA context, would offer higher education programmes at NQF Levels 5 and 6 in their own right. Programmes to be offered and expanded could include: the current N4-N6 courses; Learnerships at the NQF Levels 5; and higher education certificates in key occupational and vocational fields. Advanced Colleges should be encouraged to building specialist 'niche' areas, particularly if arrived at through partnerships with industry.
2. **Franchising:** a second option is to allow a select group of FET colleges to offer higher education programmes**.** Such programmes – mainly diplomas but also Bachelor degrees in a restricted number of cases - could be franchised to FET Colleges by the University of Technology sector as was the case in certain instances in the past. Enrolment numbers at FET Colleges can be fruitfully expanded on the basis of increasing provision in all of these fields.
3. **Private FET Colleges:** a study of the shape and size of private FET Colleges in South Africa is already proposed in Kraak's other briefing Paper on private sector provision. However, its contribution to a differentiated landscape can be investigated as part of this tranche of proposals. A study of the 18 largest private FET and HE institutions is proposed. This study will investigate the constraints and possibilities for expansion of provision in these 18 post-school institutions. These already large institutions have the potential to grow into significantly large institutions, especially if built in a public-private partnership (PPP) with government. This would require the kind of social compact identified by Badsha and Cloete (2011) as a pre-requisite for success in building the knowledge economy.

4. **Partnerships:** The extent to which the FET Colleges, SETAs, Universities of Technology and industry form partnerships – both formal and informal – should be investigated. Such partnerships were not encouraged by the silo politics of the former Departments of Education and Labour. This lack of cooperation has negative implications for up-skilling the economy.

SECTION SIX:

FUTURE RESEARCH ON DIFFERENTIATION

TAKING THE RESEARCH FORWARD

Table 5.1 below proposes a number of themes that arise in this Briefing Paper which require further both policy research and empirical investigation. The ideas are tentative and need to be finalised in discussion with the HSRC, DHET and other role-players.

Table 5.1: Possible Research Project Descriptions

No	Project	Paragraph description of project	Size of proposed project
1	A literature review of recent developments in the field of institutional differentiation in the post-school sector	Policy formulation in the 1990s was heavily enriched by a wide array of policy research on international higher education especially through the work of the NCHE and to a lesser extent, the research work of the CHE. However, this is not the case anymore. There is a dearth of up-to-date work on trends regarding differentiation internationally and how this impacts on the South African post-school system. Such a study should not focus only on HE but also look at the post-school, pre-degree sector as well.	Small, literature review
2	A literature review of dual sector systems of provision at the FE-HE interface (including a study of the 'franchising' model)	FE systems which offer HE programmes are called 'dual sector' systems, especially the Anglo-Saxon models in the UK, Canada and Australia. The success and problems facing these 'hybrid' institutions – often formed as a result of 'franchising' between HE institutions and FET Colleges -– should be studied in terms of their relevance to the SA context.	Small, literature review
3	An update on Kruss's study of 'Industry-HE Partnerships'	Kruss's work was done almost a decade ago in 2003 and just prior to the merger of 36 higher education institutions. There is a strong case to be made for repeating such a study, this time with the 23 merged institutions	Large, qualitative study
4	Review of the revival 'polytechnic' tradition globally	The case of Finland and Ireland were briefly described in this report. Both countries have experienced a strong renewal of polytechnic training in the 1990s and 2000s – counter to the predictions of 'convergence' theorists. There are other countries who have gone this route, and their successes and failure need to be assessed in terms of relevance to the SA context. In addition, the process of academic drift in other countries (including SA) where the polytechnic tradition has been diluted and institutions now mimic university practices, should be contrasted in the study.	Medium
5	Undertake a detailed 'size and shape' audit of South Africa's Tertiary Colleges (Nursing, Teaching, Agriculture and Policing)	Such a basic size and shape exercise has never been done in any detail	Large, quantitative and qualitative

No	Project	Paragraph description of project	Size of proposed project
			study
6	Examine the pro's and con's of classifying SA's elite universities as 'Research Universities'.	A key policy question requiring a comprehensive answer is to determine how such a classification might strengthen the development of our national innovation system and the five-fold increase in PhD production required by the *Green Paper for Post-School Education and Training* and the *National Development Plan: Vision 2030.*	Small, literature review
7	Undertake a detailed study of the role of 'comprehensive' institutions	Such a study would entail, firstly, a review of the self-differentiation which has occurred to date in the five comprehensives since their merger and formation in 2005, and secondly, a review of the international developments in this field.	Small, literature review
8	Investigate the four-year degree structure	The four-year degree structure is intended to create a **more flexible qualifications structure *that*** will allow more curriculum space needed by virtually the whole higher education intake, to realistically address the students lack of educational preparedness and dramatically improve performance outcomes	Small, best-practice oriented study in liaison with the Academic Development Community to avoid duplication
9	The role of single-purpose institutions in the post-school system at the FE-HE interface	This project is necessary given the new status of Medunsa as a stand-alone, single purpose institution. It arises also given the proposals made to DHET in the Private Briefing Paper on Private Provision regarding the need for other private sector stand-alone, single-purpose HE institutions. It is also relevant given the neglect of the role of the Tertiary Colleges - all of whom are single purpose.	Small, literature review
10	Building 'Advanced Colleges' - a feasibility study	Investigate the possibility of allowing a select group of FET Colleges to offer higher education programmes at NQF Levels 5 and 6	A medium size audit of the select colleges; some case study work on best practices in this area
11	A study of partnerships between industry and FET Colleges	Investigate best-practices of partnership between the college sector and industry. This has been seriously neglected in the past, but is now a major a objective of the *Green Paper for Post-School Education and Training.* Early work done on this topic by the NBI in the early 2000s needs to be repeated and extended.	A medium size audit of the select colleges; some case study work on best practices in this area

REFERENCES

Academy of Science of South Africa. 2010. The Phd Study: An Evidence-Based Study on How to Meet the Demands for High-Level Skills in an Emerging Economy. Johannesburg: ASSAF.

Akoojee, S., McGrath, S. & Visser, M. 2008. 'FET Colleges'. In Kraak, A. and Press, K. (eds) Human Resources Development Review 2008: Education, Employment and Skills in South Africa. Cape Town: HSRC Press.

Badroodien, A. and Kraak, A. 2006. Building FET College Responsiveness: The Role of Linkages and Programmes Units. HSRC report commissioned by the 'Support to Education and Skills Development' (SESD) programme: Danish International Development Aid (DANIDA).

Badsha, N. and Cloete, N. 2011. Higher Education: Contribution for the NPC's National Development Plan. A paper commissioned by the National Planning Commission. Cape Town, Centre for Higher Education and Transformation.

Benner, M. 2003. The Scandinavian challenge: The future of advanced welfare states in the knowledge economy. *Acta Sociologica*, 46, 2, pp. 132–149.

Centre for Education Policy Development. 2010. Report on the Stakeholder Summit on Higher Education Transformation. Summit convened by the Minister of Higher Education and Training, 22-23 April 2010. Johannesburg: CEPD.

Cloete, N. 2010. Clustering of South African universities into distinct groups based on input and output indicators. Unpublished Report. Cape Town: Centre for Higher Education Transformation.

Cloete, N., Branson, N., Zuze, T.L., Papier, J., Needham, S. & Nel, H. 2009. Responding to the Educational Needs of Post-school Youth: Determining the Scope of the Problem and Developing a Capacity-Building Model. Cape Town: Centre for Higher Education Transformation.

Cosser, M. 2011. Pathways through the education and training system: Do we need a new model? *Perspectives in Education* 29(2), pp. 70-79.

Cosser, M., Kraak, A. and Reddy, R. 2012. Institutional Identity and Operational Success in The Further Education And Training College Sector. Pretoria: Human Sciences Research Council. Forthcoming.

Council on Higher Education. 2000. Size and Shape Task Team: A Discussion Document. Pretoria: Council on Higher Education.

Crouch, C., Finegold, D. & Sako, M. 1999. Are Skills the Answer? The Political Economy of Skill Creation in Advanced Industrial Countries. Oxford: Oxford University Press

Dahlman, C.J., Routti, J. and Anttila, P.Y. (eds). 2006. Finland as a Knowledge Economy: Elements of Success and Lessons Learned. Knowledge for Development Program World Bank Institute. Published by The International Bank for Reconstruction and Development. The World Bank: Washington, DC.

Department of Education. 2008. National Plan for Further Education and Training Colleges in South Africa. Government Gazette Number 31712, 12 December.

Department of Education. 2001a. The Restructuring of the Higher Education System in South Africa. Report of the National Working Group to the Minister of Education. Pretoria: Government Printer.

Department of Education. 2001b. A New Institutional Landscape for the Public Further Education and Training Colleges. Pretoria: Department of Education.

Department of Health. 2010. Audit of Public Nursing Colleges and Schools: A quantitative overview. Unpublished report produced by Genius Management Solutions and commmissioned by the Department of Health, June.

Department of Higher Education and Training. 2010a. Document for Discussion: Challenges Facing the FET College Subsystem. FET Round Table. Pretoria: DHET.

Department of Higher Education and Training. 2010b. Report of the Further Education and Training Round Table of 9 April 2010. Pretoria: DHET.

Department of National Education. 1991. Education Renewal Strategy: Discussion Document. Pretoria: University of South Africa Press.

DHET. 2012. Green Paper for Post-School Education. Pretoria: Department of Higher Education and Training. January.

FAS (Training and Employment Authority). 2007. Monitoring Ireland's Skills Supply: Trends in Education/Training Outputs. A report by the Skills and Labour Market Research Unit in FÁS for the Expert Group on Future Skills Needs. Dublin: Ireland.

Finnish Ministry of Education (FMoE). 2008. *Education and Science in Finland.* Helsinki: Finland.

Fisher, G. and Scott, I. 2011. 'Higher Education', draft chapter for World Bank book on South African education system, forthcoming.

Gewer, A. 2010. Choices and Chances: FET Colleges and the Transition from School to Work. Development Policy Research Unit (DPRU) Conference, 27 - 29 October 2010. Indaba Hotel and Conference Centre, Johannesburg.

Gourley, W. 2008. Wicked Problems, Hybrid Organisations, and 'Clumsy institutions' at the Further Education and Higher Education (FE/HE) Interface. Unpublished paper.

Human Sciences Research Council. 1981. Provision of Education in the Republic of South Africa: Report of the Work Committee on Technical and Vocational Education. Pretoria: HSRC Press.

INDP. 2007. Ireland: National Development Plan, 2007-2013: Transforming Ireland - A Better Quality of Life for All. Stationery Office. Dublin: Ireland.

Joint Education Trust. 2010a Report of Task Team 1 to the FET Summit: Policy, Legislation and Implementation. Birchwood Conference Centre, Johannesburg, 3-4 September. Johannesburg: Joint Education Trust.

Joint Education Trust. 2010b. Report of Task Team 2 to the FET Summit: The Programme Mix for FET Colleges. Birchwood Conference Centre, Johannesburg, 3-4 September. Johannesburg: Joint Education Trust.

Joint Initiative on Priority Skills Acquisition. 2006. Work placement overview of students in Universities of Technology and comprehensive Universities. Document prepared by the Vaal University of Technology. Technical Working Group Meeting. 3 August. Pretoria.

Kraak, A. 2003. 'HRD and the skills crisis', in Kraak, A. and H. Perold (eds.) Human Resources Development Review 2003: Education, employment and skills in South Africa. Cape Town: HSRC Press and East Lansing: Michigan State University Press.

Kraak, A. 2004. 'Training policies under late apartheid: the historical imprint of a low skills regime', in McGrath, S. et al. (eds.) Shifting understandings of skills in South Africa: Overcoming the historical imprint of a low skills regime. Cape Town: HSRC Press.

Kraak, A. 2006. Academic drift in SA Technikons: beneficial or detrimental?. *Perspectives in Education,* 24, 3, pp. 135-152.

Kraak, A. 2008a. Incoherence in the South African labour market for intermediate skills. *Journal of Education and Work,* 21, 3, pp. 197-216.

Kraak, A. 2008b. The need for a differentiated institutional landscape in the further education and training college sector in South Africa. Unpublished paper, Cape Town.

Kraak, A. ed. 2009. *Sectors and Skills: The Need For Policy Alignment.* Cape Town: HSRC Press.

Kraak, A. 2012a. The training of healthcare professionals in South Africa: Increasing the role of the private sector. Report commissioned by the Centre for Development Enterprise, 5 Eton Road, Parktown, Johannesburg.

Kraak, A. 2012b. Briefing Paper on research done in South Africa on Private Post-School Education in South Africa. Unpublished paper prepared for DHET Labour Market Intelligence project. Cape Town: HSRC.

Kruss, G. 2005. Financial or Intellectual imperatives. Working partnerships in higher education, industry and innovation. Cape Town: HSRC Press.

Lolwana, P. 2009. 'After school, what? Opening wider and more flexible learning pathways for youth'. Ministerial Committee on Post-Compulsory and post-schooling provision in South Africa. Final Report. DHET: Pretoria.

National Commission on Higher Education. 1996a. Discussion Document: A Framework for Transformation. Pretoria: Government Printer.

National Commission on Higher Education. 1996b. A Framework for Transformation. Pretoria: Government Printer.

National Education Policy Initiative (NEPI) (1992a) *Human Resources Development*, Oxford University Press, Cape Town.

National Education Policy Initiative (NEPI) (1992b) *Post-Secondary Education*, Cape Town.

National Planning Commission (2011) *National Development Plan: Vision for 2030*, Presidency, November.

OECD. 2007. *Review of the South Africa's Innovation Policy.* Paris: Directorate for Science, Technology and Industry, OECD.

Parry, G. 2006. The Collegiate and Transfer Functions of Further Education Colleges in the United Kingdom. *Focus: Journal of Research and Scholarly Output*, 1, pp. 3-18.

Reichert, S. 2009. Institutional diversity in European Higher Education: Tensions and challenges for policy makers and institutional leaders. Belgium: European University Association.

Republic of South Africa. 1974. Main Report of the Inquiry into Universities. Van Wyk de Vries Commission. Pretoria: Government Printer.

Republic of South Africa. 2011. Report of the Task Team into the Impact of the Merger Between Medunsa and the University of the North to Form the University of Limpopo on the Education And Training of Health Professionals. Appointed by the Minister of Higher Education and Training. Government Gazette No. 567, 8 July 2011.

Scott P. 1995. The Meanings of Mass Higher Education. Buckingham: Open University Press.

Scott, G. 2011. Other state post-school provision. Unpublished paper, Johannesburg: Centre for Education Policy Development

Scott, I., Yeld N. and Hendry J. 2007. A case for improving teaching and learning in South African higher education. *Higher Education Monitor*, No. 6. Pretoria: Council on Higher Education.

Teichler. U. 2002. Diversification of Higher Education and the Profile of the Individual Institution, *Higher Education Management and Policy*, 14, 3 pp.177-187.