



CREATING COMPREHENSIVE UNIVERSITIES IN SOUTH AFRICA: A CONCEPT DOCUMENT

Department of Education
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FOREWORD

The Government's proposals for the restructuring of the higher education system, which were released in December 2002, introduced a new institutional type into the South African higher education landscape, that is, a comprehensive institution, which would be established through the merger of a technikon and a university. The idea of establishing comprehensive institutions was informed by the fact that an institutional type that integrates university and technikon-type programmes would be well placed to contribute to addressing a range of goals, which are central to the Government's human resource development strategy, in particular, access to higher education; enhanced articulation between career-focused and general academic programmes, thus promoting student mobility; strengthening of applied research; and enhanced responsiveness to regional and national human resource, skills and knowledge needs.

However, it is clear that the successful introduction and establishment of comprehensive institutions would require careful planning in the development of an appropriate academic and organisational model. Such planning should result in a new institutional type, which would be innovative and enhance the institutional diversity of higher education. We cannot afford a repackaging of existing structures and programmes.

In order to encourage debate, including assessing the limited international experience of comprehensive institutions, my Ministry commissioned this study. It is being released as a contribution to enable the proposed comprehensive institutions to think through the key issues and challenges that arise in developing an appropriate academic, and organisational model. It is not a policy framework nor is it a set of guidelines but a 'think piece', which could serve as a point of departure for a broader engagement on the role and function of comprehensive institutions.

My Department stands ready to assist in this engagement, including an exploration of the implications of the ideas and issues raised in this study, as a basis for reaching agreement on appropriate models. Such an approach would enable the newly established comprehensive institutions to contribute to the reconstruction and revitalisation of our higher education system.

Kader Asmal, MP
Minister of Education

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1 INTRODUCTION

When the National Commission on Higher Education (NCHE) submitted its final report in 1996 to the then President, Nelson Mandela, it had developed an argument for the creation of a single, co-ordinated system of higher education that would achieve its coherence from a set of planning, funding and quality assurance systems that would underpin it. At the heart of this system would be a diverse array of instructional academic programmes distributed across the institutions comprising the system. The Commission argued that differentiation or diversity in educational provision was a major challenge for higher education systems in both developed and developing economies as they sought to widen the participation of an increasingly diverse student body (in terms of gender, race and age profiles), meet the heightened demands of the labour market, and offer programmes that reflected the massive expansion of knowledge domains brought about in part by the revolution in information and communications technologies.

It was argued further that the challenge of diversity had been met by different forms of system organisation dependent on particular historical circumstances – dual, binary, unified or stratified – and unified systems were defined as those in which “a comprehensive system is created embracing universities and other institutions with no formal differentiation between them (there are no sectors), ...” (NCHE 1996:101). The Commission concluded that while the planning, funding and quality assurance systems were being put in place, the current sectoral division should be maintained, but it also foresaw that “global and South African conditions are likely to push the single co-ordinated system towards a more responsive, dynamic and ‘fuzzy’ relationship between institutions and programmes ...” (NCHE 1996:165).

Since then, significant advances have been made, particularly in establishing co-ordinated planning mechanisms through which to steer institutions towards an appropriate mix of programmes that fit agreed-upon institutional missions, in response to regional and national needs. A new funding mechanism has been adopted by the Government, and the Higher Education Quality Council is about to launch its first round of institutional audits. At least as important as these developments is the current process of formulating a new academic policy for the entire system of higher education that will not be based on institutional typology, but on a differentiated set of higher education programmes and qualifications.

Within this context of unfolding policy implementation, the National Working Group, set in motion by the National Plan for Higher Education (NPHE) of 2001, deliberated on the restructuring of the higher education landscape and the creation of “new institutional and organisational forms” (Department of Education 2001a:87). Its restructuring proposals were designed, along with other policy instruments, to rid higher education of the last vestiges of the apartheid era and to solve other problems that had arisen since the transition to democracy in 1994. The most dramatic of the strategies proposed and currently being enacted, were a series of mergers and incorporations. Allied to that was another strategy, the creation of comprehensive institutions.

The National Working Group, however, found that the time was not yet ripe for dismantling the binary divide (that is, between university and technikon-type programmes) as this could lead to institutional homogeneity that would be “detrimental to the development of an effective and efficient higher education system that is responsive to the social and economic needs of the country.” (Department of Education 2001b:17) Nonetheless, it recommended that in particular circumstances and conditions, comprehensive institutions that offered a combination of technikon and university-type programmes could be established “to facilitate the effective and efficient provision of higher education” (Department of Education 2001b:17) Where such recommendations were made, they were accompanied by a concern that ‘academic drift’ towards university-type programmes should be prevented through maintaining an appropriate balance between university and technikon-type programmes in the institutions’ mission and programme foci (Department of Education 2001b:18).

The Ministry of Education accepted the proposal to establish this new institutional type and saw it as being consistent with the suggestion in the White Paper of 1997 that the binary divide should be maintained, but with looser boundaries. The primary intention behind the creation of comprehensive institutions was reiterated in the following terms: “to strengthen the provision of technikon programmes through ensuring that technikon programmes are available throughout the country, in particular, in rural areas, which are currently inadequately serviced in terms of technikon provision.” (Department of Education 2002:24) A programme and qualification mix process would be used to ensure an appropriate balance of programmes.

The Ministry also recognised the need for further clarity on the implications of establishing a comprehensive institution through the merger of a university and a technikon.

This report therefore attempts to provide that clarification, not only for the comprehensives that will be created through mergers, but also for those that will become comprehensive through a refocusing of their mission and consequent reconfiguration of their academic programme offerings. This report does not propose to address the general issues that merging institutions will have to confront. These are addressed in the *Guidelines for Mergers and Incorporations* published by the Department of Education in April 2003.

Purpose of this Document

Readers should be aware that this is a concept document, not a policy document. Comprehensive universities are new institutional types in the South African higher education system, and this attempt to clarify the nature of such institutions must necessarily be seen as work in progress, which will be modified and refined by real experience gained in the process of creating comprehensives.

The document proceeds through an examination of policy goals and objectives to a brief discussion of international experience, and then offers a number of possible organisational models, and academic programme models that may serve the needs of comprehensive institutions. The options and suggestions offered here are in recognition of the very different circumstances out of which each of the comprehensive universities will be created. The idea is not to impose a single model on all, but provide a flexible range of models that can be adapted to local conditions and still meet the broad policy objectives outlined below.

What is a Comprehensive Institution?

Problems of Nomenclature

The term ‘comprehensive’ is used by higher education institutions in a number of different national systems and the nomenclature can become confusing when it is used to denote a variety of organisational arrangements. In the US, the term was used in the institutional classification system developed by the Carnegie Foundation for the Advancement of Learning to refer to those universities and colleges that offered a wide variety of baccalaureate degrees and a limited range of master’s degrees with no graduate programmes at the doctoral level. By 2000 it had dropped the term altogether but many institutions have adopted it as part of the terminology defining their own institutional identity, including some that have extensive postgraduate and research profiles. These include the large, multi-campus state universities, the so-called ‘land grant’ institutions and community colleges. The universities use the term to distinguish themselves from the liberal arts colleges, professional schools and other specialised institutions that have a particular, prescribed educational thrust. Community colleges use the term to describe the range of programmes they offer from the narrowly vocational to general academic / educational courses, leading to the two-year associate degree with transfer possibilities to four-year degree granting institutions.

In other parts of the world, including Canada, Australia, Singapore, India, Britain and Germany, the term, again, is often adopted as a means of indicating the range and depth of an institution’s academic offerings. The National University of Singapore, for example, sees itself as a first-rate comprehensive institution offering students a well-rounded university experience. It becomes clear that, internationally, ‘comprehensive’ is used fairly loosely by a number of different institutional types to signify a broad educational thrust and extensive range of academic programmes, from career-focused to professional, from specialist to general academic, along a horizontal axis. It is also sometimes used to signify the range of qualifications offered by an institution on a vertical axis, from certificates and diplomas to bachelor’s, master’s and doctoral degrees. The University of Florida, for example, describes itself as a comprehensive university offering a wide range of programmes in different subject areas (horizontal axis), as well as extensive research and postgraduate programmes leading to higher qualifications (vertical axis) in almost all fields offered at undergraduate level.

This general use of the term ‘comprehensive’ is not particularly helpful. According to such usage, many of our existing higher education institutions could be termed comprehensive. What we are looking for is a particular meaning for the term, appropriate to the South African context, which corresponds to the goals and objectives that the creation of these institutions is supposed to fulfil. International models may have experiences and practices that are helpful to us, but they will be found through an examination of the roles and functions of institutions, who they serve and how they serve them, rather than through a simple focus on the descriptive term ‘comprehensive’. It is important, therefore, to return to a discussion of general purposes and goals.

National Policy Goals and Objectives

Comprehensive institutions in South Africa are expected to contribute to meeting a range of goals identified in the National Plan and which are central to Government’s Human Resource Development Strategy, including:

- Increased access, in particular, to career-focused programmes with prospective students able to choose from a wider variety of programmes with different entry requirements.
- Improved articulation between the career-focused and general academic programmes, thus facilitating student mobility between different programmes.
- Expanded opportunities for research and the strengthening and development of applied research through linking emerging foci of the technikons to the current research strengths of the universities.
- Enhanced capacity (because of the broader range of expertise and foci) to respond to the social and economic needs of the region in general and of industry and civil society in particular. (Department of Education 2002:24)

In summary, access, articulation, the strengthening of applied research, and responsiveness are the four key goals for all of these institutions. In addition, a number of institution-specific goals for merging institutions were identified.¹ Most of these relate to the general outcomes of the merger and not to the comprehensive nature of the new institution. For the University of Venda, the University of Zululand, and the present campus of the University of the Transkei, however, a specific objective is to make a wide range of vocational, technikon-type programmes available where they have not previously been offered and in line with the human resource needs of the region. In particular, students should have access to a much wider range of programmes leading to certificate and diploma qualifications in work-related fields.

¹ See Government Gazette Notice No 23549 of June 2002.

Characteristics of the South African Comprehensive University

On the basis of the broad policy directives and objectives described above it is possible to identify some general features of the South African comprehensive university. It will be characterised by:

- Diversity – through the offering of a diverse range of academic programmes (vocational, career-focused, professional and general formative) of both university and technikon type.
- Accessibility – through the opportunities created by a variety of entry and exit points.
- Student mobility – through developing strong vertical and horizontal articulation pathways.
- Responsiveness – through the development of a suite of educational programmes and research foci appropriate to local, regional and national needs.
- Flexibility – through the strengthening of relationships with community, civic, government, business, and industry partners for local and regional development. Flexibility should characterise the institutions' ability to meet the human resource needs of the local (and wider) context through its training programmes, and to contribute to the development of the communities it serves through the application and extension of its knowledge and expertise.

The challenge is to find organisational forms and programme models within which to embody multiple functions that are nonetheless compatible with the creation of a strong, integrated institutional identity.

2 LESSONS FROM INTERNATIONAL EXPERIENCE

There are a number of educational initiatives, in various parts of the world, that have been embarked upon in order to meet some of the objectives outlined above. Those that have a particular pertinence for the South African situation include the US land-grant institutions, the British 'new' universities (old polytechnics) and some recent mergers across the further education / higher education (FE/HE) divide, the German *Gesamthochschulen* and the Finnish polytechnics. Discussion of these initiatives follows, and some other aspects of national systems that serve to meet the demand for access, transferability, expanded scientific and technological education, and contributions to socio-economic development. There is also an account of organisational arrangements in individual institutions that have special relevance.

The US: Land-grant Universities and Other Organisational Types

Perhaps the oldest examples of institutions designed specifically to promote access and opportunity through making practical forms of higher education available to the general population, are the so-called land-grant universities, set up through the enabling Morrill Act of 1862. The federal government was required by the Act to provide each state with a grant of land that could be sold to finance the establishment of a college. This radical move was designed to widen access to higher education, restricted at the time to a small elite, and extend its range, confined as it was to a narrow range of classical scholarly disciplines. Part of the original mission of the land-grant colleges was to improve American agriculture, particularly through agricultural experimental stations, and to more broadly extend service to the surrounding communities. Currently there are 105 such colleges and universities, including some of the country's most prestigious institutions such as Purdue, Rutgers, Cornell, Texas A&M, Florida State and Iowa State. Their original range and mission have been greatly expanded but still entail a commitment to providing a combination of practical and liberal education, to engaging in basic and applied research, and to serving the people of the state.

Aside from the land-grant institutions, some US institutions have developed within complex federal systems that are either city or state based, and incorporate a number of different types of institutions. The City University of New York (CUNY), for example, includes community colleges, two year junior colleges, four year colleges, colleges with extensive postgraduate and research programmes, and a graduate centre. While these colleges are institutionally discrete, the system does allow for a range of different entry levels (including open access to the community colleges) as well as transfer and articulation arrangements.

For the most part, the US developed its solutions to access and institutional and programme diversity some time ago, and the system is now quite settled and well established. In the institutional history of American higher education, the approach has been the development, within universities, of a wide range of majors, including technical

and ‘career’ majors, and the creation of professional schools, all serviced by institution-wide general education requirements. For those students who do not meet the entry requirements for university degree study, the route is through two-year junior colleges or community colleges. Community colleges offer a variety of short-term programmes, many of which are of a directly work-related, vocational nature, as well as general education programmes that can lead to transfer to senior, four-year colleges. Depending on articulation agreements, students may be able to transfer from junior colleges or community colleges with all their credits. The vocational tracks in community colleges are generally designed to lead to qualifications that will take students directly into the labour market, but an interesting recent phenomenon (termed the ‘new vocationalism’) has seen increasing numbers of students seeking transfer from supposedly ‘terminal’ vocational programmes. The response has been to deepen the ‘academic’ component of these programmes both to meet transfer demands, and to meet the increasingly sophisticated demands of the labour market.

The Universities of Northern Michigan (NMU) and Southern Illinois (SIU) are unusual institutions in the US system in that they have colleges (faculties) within the institution offering two-year associate degrees. At NMU, the College of Technology and Applied Sciences offers a range of courses comparable to many that would be found in a technikon, including automotive services, aviation, construction and facilities, electronics, hospitality management and industrial technology. Exit qualifications progress from certificates and diplomas to associate degrees, bachelor’s degrees and in some instances master’s degrees. It is not clear, however, whether there are any articulation pathways from this college to the more traditional university colleges.

While larger than Northern Michigan, Southern Illinois has a similar academic structure, with a separate College of Applied Sciences and Arts which houses the departments of architecture and interior design, automotive technology, aviation management and flight, aviation technologies, health care professions, information and management systems and technical and resource management. The two-year Associate in Applied Science degree is available in some of these programmes and all offer the Bachelor of Science degree. Studies at master’s or doctoral level is not available in this college.

However, what SIU has developed is a major articulation pathway called the ‘Capstone Option’ which is available to students who have completed the two-year Associate in Applied Science degree (either at SIU or elsewhere). Its aim is to build on the career-oriented, occupational skills already acquired by AAS graduates and enable them to proceed to a bachelor degree with only an additional two years of study. A number of colleges, including the College of Applied Sciences and Arts, participate in the Capstone Option and specify the programmes into which AAS students will be accepted. All of these programmes are in vocational or career-focused fields and lead to applied degrees. Like other baccalaureate candidates, students coming through the Capstone route are required to complete the University Core Curriculum as part of their studies.

The University Core Curriculum is another interesting feature of this institution. Consisting of general education components, it is required for all baccalaureate degrees and has some flexibility to allow for student course selections to meet particular interests.

The British New Universities (Old Polytechnics)

The British polytechnics were granted university status in 1992 and the new universities - University of Central England (Birmingham), University of Westminster, University of West of England (Bristol), and London Metropolitan University, for example - continue to offer strongly vocational/career oriented and professional programmes. A number are also offering more traditional general degrees. Research is concentrated in applied areas, and in some quarters these institutions are considered to have suffered 'mission drift' in moving from a primary focus on teaching, to competing for research funding with the older universities. Some have been more successful in this respect than others.

London Metropolitan University is particularly interesting. It has grown out of a number of disparate institutions and now prides itself as one of Britain's largest universities. Its focus is on the provision of vocational and business programmes which are offered at levels ranging from pre-degree study (further education and access courses) and foundation degrees (two year programmes combining technical skills, academic knowledge and 'transferable' skills) to taught and research postgraduate programmes in fourteen academic departments (equivalent to schools, or in some cases, faculties in SA institutions). In its mission statement, it commits itself to accessible education, responsive programmes and to active engagement with the economy and society of London and the wider international community. The university also has nine research institutes and 25 research centres embedded in academic departments. They provide services to external clients and organisations in London's communities, business, industry and public bodies.

British HE/FE Mergers and Transfers

In recent years there have been a number of mergers of further education colleges with higher education institutions, including universities, or transfers of FE colleges to HE institutions. The objective in most instances has been to broaden participation in higher education in line with the government's objective of achieving a 50 per cent participation rate, by improving articulation and progression pathways and sometimes also to secure the financial viability of FE provision. The Higher Education Funding Council (HEFC) and Learning and Skills Council (LSC) jointly commissioned a study (July 2003) to evaluate the success of some of these models of mixed provision, the findings of which were generally positive. The report came with the qualification, however, that the case studies were based on specialist FE colleges with a particular curriculum focus and the applicability of the findings to general colleges that offer a wider range of curricula should therefore be treated with caution.

The first critical finding was that "In most cases the approach has been to maintain FE provision at the FEC site as a discrete and cohesive entity. Thus coherence has been

maintained, whilst at the same time integrating most of the support systems and functions as part of a central university service.” (KPMG LLP 2003:6)

A second finding was that while retention and completion rates have improved, there was little evidence of improvements in progression from FE to HE as a consequence of the mergers. It was only in the so-called ‘mixed economy’ colleges, that do not have the status of higher education institutions, that progression from FE to HE was good. In these cases, there were different models of organisation, “with some colleges splitting HE and FE by running two operations separately with an executive group for each, or by creating a separate HE unit. In others HE provision is spread over the existing departments.” (KPMG LLP 2003:9)

In relation to merged institutions it was concluded that success depended on a strong commitment to the protection and development of FE provision, while in the transfer situation, institutions preferred to think of a broad spectrum of provision in which the distinction between FE and HE was a false dichotomy.

The German Technical Universities and *Gesamthochschulen*

Germany has one of the oldest university systems in Europe, and the system has been dominated since the eighteenth century by the ideal of the research university as articulated by Wilhelm von Humboldt. Since the Second World War, there have been considerable pressures to open up and diversify the system, producing a landscape of universities, technical universities, colleges of art and music, specialist institutions, *Fachhochschule* institutions (universities of applied sciences) and *Gesamthochschulen*. Both the technical universities and the *Gesamthochschulen* can be described as comprehensive institutions. The technical universities originally restricted their teaching to technical and engineering disciplines but have developed a wider suite of programmes that now include the arts and humanities. Their primary focus, however, continues to be on engineering and science, and in every other respect they operate as universities, offering qualifications up to doctoral level, whereas at *Fachhochschulen*, the highest qualification is the master’s degree.

More interesting for the South African situation are the *Gesamthochschulen* (GHS), that came about as a result of attempts in the late sixties and early seventies to reform the highly restrictive and elitist German higher education system. These reforms are described and assessed by Ladislav Cerych and Paul Sabatier (Cerych & Sabatier 1992) and the following account is based on their analysis. The original intention was to amalgamate previously separated parts of the German higher education system, but particularly to link universities with *Fachhochschulen*, which raised the challenge of combining structurally different institutions typified by different types of educational programmes of different duration and content. The problems which the reform was intended to address were low levels of participation, a highly segmented and impermeable system, too few highly qualified young people, and a poor relationship between higher education programmes and employment.

With wide political support for the innovation at the federal level, the initial intention was to reorganise the entire higher education system into GHS-type institutions. Objectives ranged from the technicist to fairly radical democratic reforms to curricula. The federal law of 1976 and subsequent state laws enabling the setting up of such institutions specified a number of objectives, including the creation of a differentiated but co-ordinated system comprising educational programmes of varying levels, content and duration with credit transferability, the linking of scientific education with practical experience, effective student counselling and guidance, the optimal use of facilities, increased opportunities for many more students, equalisation of opportunities for academic and technical secondary school leavers, and the establishment of institutions where there had been no previous provision. Two institutional models were proposed: the co-operative, in which largely autonomous units would link in loose association, and the integrated, in which staff and student bodies would be merged and the institution would offer both vocational programmes of short duration and academic programmes of longer duration.

In some respects the implementation of this reform fell far short of its initial ambitious objectives. There was no general reorganisation of the entire system, and in the end, only six *Gesamthochschulen* were created. In part, this was because the federal government did not have the power to compel states (*länder*) to set up these institutions, and state laws to create comprehensive universities were only enacted in a few *länder*, particularly, those states dominated by the ruling Social Democratic Party (Stumpf 2003). The other explanation offered for the relatively limited uptake of this new institutional model was the resistance of the older, established universities, arising perhaps out of fear of a loss of prestige that might come with merging with *Fachhochschulen* (Brinckmann 2003). All of the *Gesamthochschulen* grew out of the non-university sector (although some of the small institutes that were drawn in, operated at university level) and none had any direct links with existing universities with the exception of the medical faculty of GHS Essen, which, however, was not integrated into the GHS in any meaningful way. Nonetheless, there was some measure of success at the individual institutional level. Cerych and Sabatier assessed the outcomes of the implementation of this reform in relation to students, course differentiation, staff integration and curricular reform. These outcomes are briefly outlined below.

Student enrolment into the GHS was rapid, especially in regions where there was no previous provision, and enrolments doubled in the first six years of their existence. They succeeded in increasing access for students with working class backgrounds and provided the rare opportunity for students graduating from technical secondary schools to gain access to university degree studies. The entry requirements were lower than for traditional universities and higher than for technical colleges.

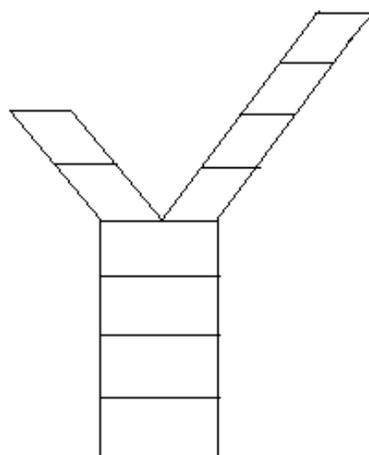
In terms of course differentiation, the aim was for more permeable, less status-differentiated courses. All the GHS opted for the integrated institutional model, offering both vocational and academic courses in a single institution, but integration of courses was limited. Four discernible sectors emerged: longer university degree courses, shorter (three-year) courses leading to technical college type qualifications, teacher training

courses, and an integrated sector with courses leading to two types of degree (one after six semesters with a vocation orientation, the other after eight semesters with a more academic orientation). What is significant is that at least half the students were enrolled in courses in this integrated sector.

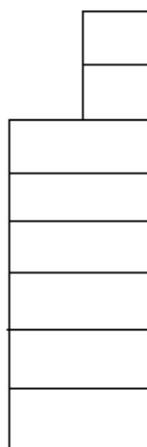
Two programme models emerged in the integrated sector; the 'Y' model and the consecutive model. In the 'Y' model, all students enter at the same level, complete four common semesters, and write an intermediate examination. At this point the programme splits into a two semester course leading to a vocationally-oriented exit degree (Diploma I) and a four semester course leading to a more theoretical or academically oriented higher degree (Diploma II).

In the consecutive model, the model adopted at Kassel, students complete six common semesters leading to an exit point with an applied degree, or complete a further two academic semesters leading to a more traditional university degree.

The motivation for starting students in common courses is to avoid student segregation



'Y' model



Consecutive model

and any implication of status differentiation after secondary school. Differentiation is postponed to a more advanced level at which stage status differences are likely to be less marked. Cerych and Sabatier found that most students opted for the longer, more academically oriented courses, and that non-*Abitur* students (without the equivalent of matric exemption) performed just as well as their *Abitur* counterparts.

Staff integration was less successful, with high levels of tension recorded. The challenges confronting staff coming from different educational institutions related to salary scales, teaching loads, academic status and promotion possibilities. Many of these difficulties stemmed from the fact that the institutions did not have the autonomy to establish their own conditions of service and, therefore, to equalise conditions of employment for staff coming from a number of different types of institution. This is because staff are employed as civil servants in Germany, with their conditions regulated by the state (*länd*) and not by the institution, a factor that continues to bedevil the *Gesamthochschulen* (Stumpf 2003). In these less than propitious circumstances, the will to co-operate was seen as an essential factor.

Three concepts informed curricular reform: inter-disciplinarity and project orientation, the synthesis of theory and practice, and student counselling and guidance. At GHS Kassel, all students in integrated courses (vocational and academic) were required to take

two terms of ‘vocational practice studies’ (in-service learning) whereas other institutions made this kind of learning voluntary.

Finally, Cerych and Sabatier comment that the active participation of these institutions in the socio-economic development of their surrounding regions was never a goal, but the GHS did have an impact in this regard, especially in regions where higher education institutions had not previously existed.

More recent assessments range from seeing this reform move as a failure, to viewing it as a qualified success, although success has come, in some respects, with a loss of the original objective of diversification. GHS Kassel was considered to be one of the more successful of the new institutions, but since 2002, it has dropped the title *Gesamthochschule* and is now called the *Universität Kassel*. Over time, its curriculum offerings have become fairly typical of other universities. Nonetheless, comprehensive universities in Germany still have their advocates who applaud them for the achievement of widened access, some student mobility, and creative curricular innovation.

The Finnish Polytechnics

For many years, the Finnish Government has seen a strong link between higher education, research and technology as drivers of regional development (Castells & Himanen 2001). From the 1960s onwards, the government created a number of new universities in different parts of the country with a strong emphasis on engineering and technology. In the early 1990s, in response to a major economic slump, the government embarked on a wide-ranging strategy to transform Finland into a ‘knowledge’ society. Critical to the success of this strategy was the role played by the universities, particularly Helsinki University of Technology, Tampere University of Technology and the University of Oulu. There was also a perceived need to support the high end of research with higher levels of education and skills spread more generally throughout Finnish society. A further strategy, therefore, was to increase higher education enrolments dramatically, particularly in technological fields. As a result, the polytechnic institutions were created as an institutional type quite distinct from the universities, with a strong orientation towards practical education for working life. At present, 31 polytechnics are spread throughout the country with a particular mission to support regional development and regional innovation systems. Polytechnic enrolments account for 60 per cent of higher education enrolments in Finland and according to a recent OECD review, the sector is highly regarded (OECD 2003).

Through a combination of theoretical and practical education, they offer courses in the fields of natural resources, technology and communications, business and administration, tourism, catering and institutional management, health care and social services, culture and humanities and teaching. Practice and project work are pursued in close co-operation with business and industry. Entry requirements are generally lower than for universities, but students wishing to enrol for degree programmes are required to write an entrance examination. Between 25 and 30 per cent of students are enrolled for degree programmes in the polytechnics, and postgraduate studies are only offered in a few select areas.

Commentary

One of the first observations that must be made is that there is no complete institutional fit between the examples that have been found and the proposed comprehensives in South Africa. In part, this is not so much because of the unique nature of the idea of the comprehensives, but the relatively unique nature of the technikons. The institutions to which they most closely correspond are probably the Australian universities of technology, and the former polytechnics in Britain that have now acquired university status. All of these have certainly extended their mission beyond that of the institutions out of which they evolved, and offer programmes that are comparable to traditional university programmes in addition to those that have a strong technological and vocational orientation, but none has actually merged with an existing university. There is, in other words, a tendency to emulate 'upwards' in these institutions, with only a few (London Metropolitan University being one of them) making a particular effort to enhance access and maintain a range of exit points and qualifications below the level of the bachelor degree. The German *Fachhochschulen* (universities of applied science) as they currently exist are also similar institutions to the technikons although the range of qualifications they are permitted to offer is restricted. However, it is important to remember that many *Fachhochschulen* were created out of vocational and technical schools that were then upgraded to higher education status, a process that took place more or less concurrently with the creation of *Gesamthochschulen*, and this is a significant factor in the continuing problems of status differentiation amongst staff in the comprehensive universities, and between different types of institution in Germany's dual higher education system.

Most international examples of the merging of different kinds of institutions, or the combination of different kinds of educational provision, are across the further / higher education divide, unlike the South African comprehensive which is firmly located within the higher education sector. This could well be a distinct advantage for the South African institutions. Many of the difficulties encountered in implementing reforms in comparable circumstances have arisen from distinct hierarchical differences in the levels of educational provision, and the qualifications of staff that are brought together. Integration of programmes, curricula and academic staff have proved to be most problematic where levels, standards, qualifications and status have been most sharply differentiated. This is not to say that related issues will not arise in the South African situation, and that they will not require sensitive handling, but differences are unlikely to be as extreme as in some international examples.

On the other hand, mergers across the further / higher education divide do not pose the same curriculum problems as will be encountered in the South African situation. Generally speaking, progression from further education courses to higher education courses is sequential, and the curriculum issues that arise relate to the vertical articulation between such courses of study. In the South African mergers of technikons and universities, the central curriculum issue that arises is whether and how programmes with a strongly technical and vocational orientation can be brought into fruitful relationship with programmes that have a more academic or theoretical orientation.

3 ORGANISATIONAL MODELS

It seems clear that no single blueprint can be devised that will fit the requirements demanded of all the institutions that have been designated to become comprehensives. The models adopted will relate in part to the base conditions from which these institutions will be formed. These base conditions consist of current mission and programme profile, academic and administrative capacity, current infrastructure and facilities, and geographical location. In addition, the structural, organisational and curriculum challenges faced in the merging of a technikon with a university, both of which have up-and-running programmes, will be very different from those confronted by a university that is refocusing its mission and reconfiguring its academic profile in order to offer a new suite of predominantly technikon-type programmes.

There are, however, a number of options to be considered that arise from the exploration of international experience.

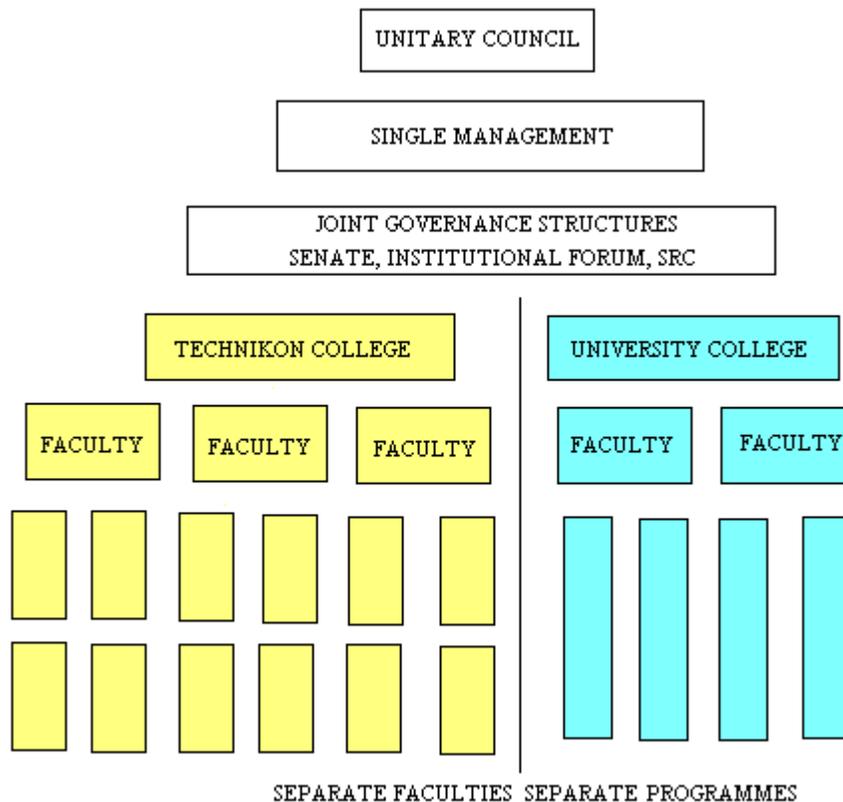
Two dominant models emerge: separate provision in distinct colleges or faculties with articulation pathways to degree and higher degree studies, or, an integration of provision across faculties with clear pathways for progression. The Northern Michigan and Southern Illinois models provide variations on these basic types. In those institutions separate colleges were created for those vocational programmes such as aviation or automotive technology that do not have an immediate correspondence to traditional university disciplines. Students in these fields qualify with *applied* degrees, either at the associate or bachelor level (the equivalent, perhaps, of a Bachelor of Technology). In other fields, such as business and commerce or communication and language studies, where there is a clear correspondence to a university programme, such distinctions are not made, and studies are part of a single programme with different exit points along a continuum of progressive qualifications.

What this suggests for the South African context is that there could be some integration of technikon and university programmes where there is a clear disciplinary correspondence but with the possibility of different tracks (vocational/career and theoretical) and staggered exit points with appropriate qualifications. The binary divide in these instances will be manifest in the development of different pathways that have a greater or lesser vocational emphasis². In most international examples, however, there is a single set of qualifications on a vertical axis. Where distinctions are made it is through adding the description ‘applied’ to the name of the degree.

² In terms of the Council on Higher Education’s (CHE) proposals for new academic policy, these pathways would correspond to the general/formative and career-focused tracks and their corresponding qualifications.

Separate ‘Colleges’ – Single Management

The simple addition of the parts of different institutions would result in minimal change at the level of academic provision and management. Integration would occur only at the most senior levels of governance and management. The structural implications of this would be to maintain separate organisational forms for the delivery of technikon and university programmes.



The advantage of this model is that it would certainly maintain the binary divide, if that is a primary objective. The only academic integration that would take place would be in areas of clear and unnecessary duplication where rationalisation of programmes could result in a single set of offerings. In such a case, the decision would have to be made as to whether this was now a university or technikon programme, which would determine where it was to be housed.

There are, however, a number of disadvantages to this model. The new institution would have only a nominal ‘single’ identity while in practice and in substance it would be split and would operate as two distinct organisations. At the levels of management and governance, it is likely that there would be intense competition for budgetary allocations and other resources and such divisions would almost inevitably permeate many other

aspects of the institution's operations. Educational separation would perpetuate perceptions of status differentiation among students and staff, and the expense of merging administrative and management systems, while bringing some advantages in itself, would not be offset by positive gains in other areas. According to a past president of Northern Michigan University, the separation of the College of Technology and Applied Sciences from other colleges in the university gave rise to problems of status differentiation and difficulties in achieving staff integration (Vandermint 2003). It is also unlikely that this model would meet the objectives for comprehensive universities set out by the Ministry.

In its proposals for restructuring higher education institutions, the National Working Group warns against academic drift towards university programmes in the comprehensive universities and an erosion of the valuable type of education currently offered by technikon, with all its corresponding features, and range of educational opportunities. It is vital that this kind of academic provision is maintained, and even strengthened, but this does not necessarily mean a complete structural separation of programmes.

What Needs to be Maintained?

A more fruitful way of addressing this issue is to disaggregate those elements of programmes and qualifications that are desirable, and should be maintained, from the umbrella descriptions of 'technikon' and 'university' programmes. These would include:

- Varied entry levels: technikon programmes have traditionally offered access to students who do not have matriculation exemption and would not normally qualify for entry into university programmes.
- Shorter programmes with exit points and meaningful qualifications at levels lower than the traditional university first degree.
- Curricular integrity: this could mean multi-disciplinary and applied curricula in some areas, and strong theoretical and disciplinary training in others.
- A work or career-focused orientation in some programmes with the possibility of co-operative or in-service learning.
- Established links with business and industry.

What Needs to be Added?

If the objectives of creating comprehensive institutions are to met, then a number of additional ingredients need to be added to the mix. These would include:

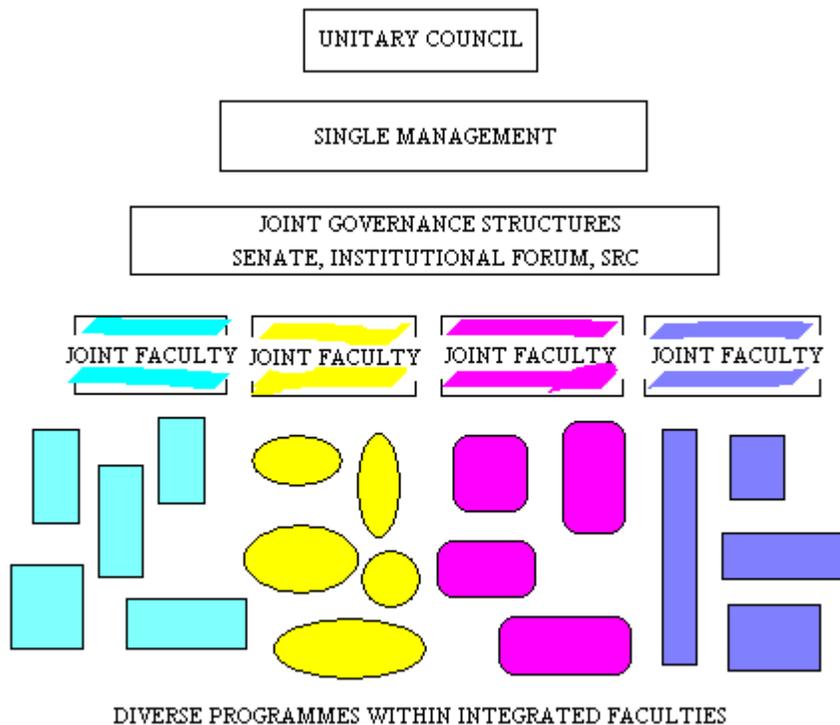
- Increased access for students to a wider range of programmes and qualifications, particularly of the technikon-type.
- Consolidation of programmes where there is significant overlap or duplication.
- The development of articulation pathways, both vertical and horizontal, that would make programmes more permeable.
- An appropriate balance of theoretical and applied learning.

- The development of research synergies at the interface between applied and basic research.
- An extended and responsive relationship between the institution and its surrounding communities.

With these considerations in mind it becomes possible to consider less rigid institutional models that have the potential to produce higher levels of integration and cohesion.

Integrated Faculties – Diverse Programmes

In this model, the educational fields within which different institutions offer programmes (in the case of mergers) are integrated into a common set of faculties, but programmes are differentiated. The adoption of this model requires careful and extended discussion of the most appropriate set of faculty structures to accommodate the full range of programmes

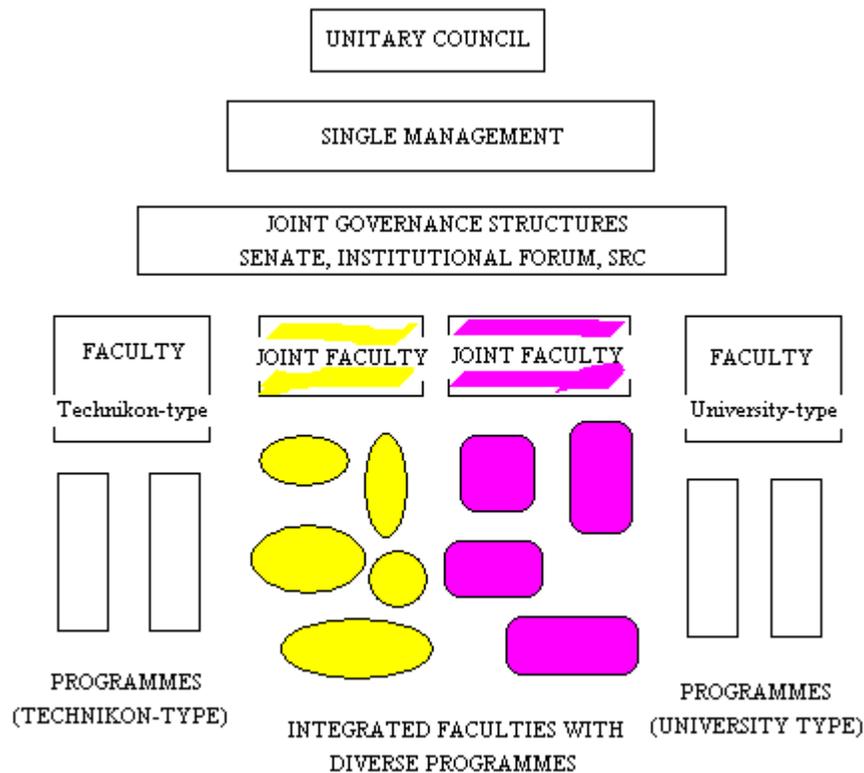


offered by the merging institutions. In other words, this decision should rest on prior decisions about the programme profile of the new institution and how programmes will relate to one another. Decisions about smaller organisational units such as schools and / or departments are even more tightly dependant on how the curriculum is organised. The advantage of this model is that academic staff would be integrated immediately into faculty, school or department structures, and each faculty or school would reflect a diverse array programmes. Opportunities for integration at the level of individual programmes could be developed where appropriate. Options for programme combinations are explored in Section 5, below.

The potential for ‘drift’ that might produce homogeneity can be averted if close attention is paid to strengthening those characteristics of programmes, outlined above, that will maintain diversity.

Hybrid Model

A hybrid option would see the integration of some programmes into common faculties while other programmes for which little correspondence could be found in the other ‘sector’ would be housed in separate faculties. This model shares common features with



the four sectors of the *Gesamthochschule* institutions, and the separate colleges of Northern Michigan and Southern Illinois Universities. Programmes of longer duration with a strong theoretical academic orientation could be housed in a ‘university’ faculty, those of shorter duration with a strong technical, applied and skills orientation in a ‘technikon’ faculty, while all others are merged into common faculties. There is a danger that this organisational arrangement could produce differentiation of an undesirable kind that might fragment the identity of the institution. It should be approached with caution.

Supporting Organisational Integration

If maximum integration is the ideal to which comprehensive institutions will strive in their organisational forms, then it must be pursued at a number of levels. These are:

- Governance (Council, Senate, Institutional Forum, Student Representative Organisations, Faculty Boards)
- Administration
- Academic structures (Faculties, Schools, Departments)
- Academic programmes, where appropriate
- Research.

One of the keys to achieving this will be the development, at the macro level, of a mission and vision that will provide a coherent identity for the new institution to which all its constituencies can feel committed. The second process critical to the achievement of this ideal will be the development, at the micro level, of the conditions and support structures to enable people to work together co-operatively on a daily basis.

4 VISION AND MISSION FOR COMPREHENSIVES

Universities and technikons have traditionally had very different visions and missions: they have served different cohorts of students, they have had different academic orientations, different qualification structures, different research profiles and different sets of relationships with external groups. Yet the way in which some knowledge fields have developed in combination with the demands of the economy for highly skilled personnel has meant that far greater areas of commonality have emerged between university and technikon programmes in these fields than is often acknowledged. This issue will be developed in greater detail in the following section on academic programmes.

Again, as in the case of institutional models, it is impossible to articulate a mission that is appropriate to all the institutions in this category, although there may be some features of institutional missions that are held in common. The primary challenge for comprehensive institutions will be to decide on the elements of a *single vision and mission* that will set coherent parameters for their *multiple functions*.

Creating an Institutional Identity

Comprehensive institutions will need to create an identity that is recognisable and makes sense, particularly to prospective students. The defining characteristics of such an identity could include some or all of those already mentioned:

- Diversity of programmes with different entry levels
- Mobility through strong articulation
- Work-related qualifications from certificates through to full degrees
- Service to community, business and industry
- Innovative, problem-solving research
- Life-long learning opportunities.

Programme Profile and Institutional Mission

The process of establishing a new programme profile in line with the new institutional mission cannot happen overnight and institutions should expect that the development of an academic plan and its implementation will extend over a number of years. This will be time well spent and great care should be taken in moving towards a good fit between programme profile and institutional mission because the academic vibrancy of the institution, its financial viability and sustainability, and its public identity will depend on the outcome this process.

As with merging institutions, the starting point will be an audit of existing educational provision, including capacity and resources. This will provide the base information from which decisions about the new profile can be made.

The critical questions to be asked in relation to establishing a programme profile for the new institution include the following:

- What educational needs of the immediate and broader community should be served by the institution?
- In which knowledge fields is there existing capacity and strength and do these correspond to the broad mission of the institution?
- Are there areas of significant overlap and duplication where there is potential for rationalisation or consolidation of programmes?
- What suite of programmes would best correspond to the mission and enhanced capacity of the institution? Is there anything that needs to be added, or are there areas where the merging of institutions has created the conditions and capacity for new offerings?
- Within the suite of programmes, what will be the balance between strongly vocational, career-oriented, professional and general formative programmes?
- Are there programmes and activities that do not fit the new mission of the institution that should be discontinued?
- To what qualification levels will provision be made? Are there areas of strength and demand that justify the provision of postgraduate studies?
- What will the overall balance be between undergraduate and postgraduate provision, and within those categories, between certificate, diploma, degree and higher degree provision?
- How will the institution characterise its relationship with the wider community and will this be manifest at the level of academic programmes?

Disciplines or fields of study that do not themselves form the core of any programmes should not necessarily be discontinued. It may be that lower level studies in these areas constitute an integral part of some programmes and therefore they play an important 'service' function. There should, however, be no aspiration to develop higher level studies in these fields.

Institutional Culture

Merging institutions may also wish to preserve some aspects of existing cultures that are considered to be particularly valuable, and combine these with new elements that will promote the character and ethos of the new institution.

Technikons, for example, have a well-established academic culture that has distinct features. Academic programmes are directed towards occupations and they are intended to equip students with skills that are both marketable and immediately usable in their chosen field. This has shaped the pedagogy of diploma programmes: most students are

required to complete some period of co-operative learning in the course of which they are placed in appropriate work settings and learn to apply classroom based knowledge in a real workplace environment.

The objective of training students so that they graduate with relevant skills has also made it particularly important for technikon curricula to keep abreast with developments in a wide variety of occupational fields. The instruments widely used to achieve this are curriculum advisory committees made up of members drawn from relevant occupational fields who advise on a number of issues including the correspondence of curriculum design and contents to the skills requirements of the field, new workplace needs and developments, and changes in the labour market. These relationships are also used to help in the placement of students for the in-service training requirements of their programme.

In addition, the broad framework of the curriculum for the national diploma, the qualification for which the majority of technikon students are enrolled, is set at a national level through 'convenor' technikons. Although technikons have the right to give substance to that curriculum with local content, the level of commonality established through the national curriculum framework does ensure some portability for students moving between institutions. The new universities of technology, formerly technikons, and the comprehensive universities will need to consider jointly if this is a valuable mechanism which they wish to retain, whether it continues to be part of new national academic policy or not. Within the curriculum, technikon students have little if any choice about their subjects.

Research is still relatively underdeveloped at technikons, but it plays an increasingly important role in finding practical solutions to industry problems and developing new applications for existing knowledge.

Students and staff in university professional programmes would not find this culture alien, but university academic culture traditionally manifests other features. Direct engagement with, involvement in and promotion of the interests of business and industry are eschewed in favour of some distance and separation from these concerns to enable students and staff to inhabit critical spaces from which to reflect upon, analyse and understand the dynamics that shape social, cultural, economic and political worlds. Universities have also traditionally exercised freedom to shape the curriculum for their programmes without reference to any binding national parameters other than the generic criteria established for all programme accreditation. Within academic programmes, students, in turn, have traditionally exercised considerable freedom in the selection of the courses comprising their programme, subject to approval by faculty deans. More recent developments have seen some universities introducing more tightly constructed academic programmes, particularly in the social sciences and humanities, that allow fewer choices for students, but there now seems to be a counter movement away from heavily prescribed programmes. Nonetheless, the effects of student and labour market forces have influenced the shaping of many university programmes in the direction of greater career orientation.

The freedom to pursue curiosity-driven research is prized in universities, in addition to the right to pursue research that is seen to have more direct relevance and applicability. In recent years, the research domain has been characterised by fierce competition for research funding from donor, business and industry partners, which is a mark of its increasingly applied or problem-solving orientation.

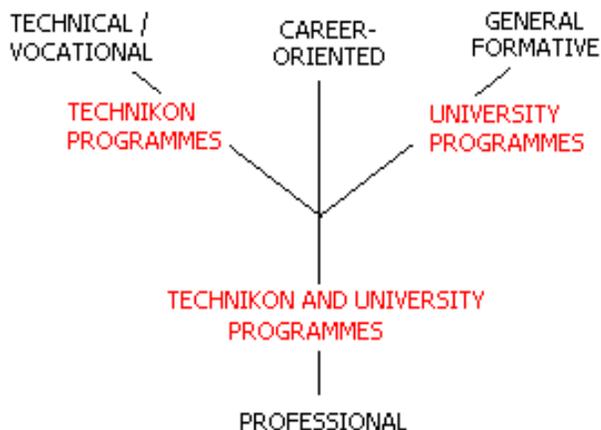
In university culture, research productivity has also been a critical factor in appointments and promotions, although many institutions have taken cognisance of other kinds of achievement and contribution in their policies. What will be of central importance for the creation of a new and unified institutional culture is the establishment of common conditions of service, and the recognition in internal policies of the different contributions made by all members of staff, whether in the fields of research, teaching or community service.

Other aspects of culture fall outside these generic terms and relate to specific institutions, histories and practices. There are also what can be called attitudinal aspects of culture that are embodied in 'the way we do things' that will have to be handled with care, and may manifest themselves in different views of the working day, term and vacation time, status and authority.

5 ACADEMIC PROGRAMME MODELS

In this section, the term ‘programme’ is used in the general sense of a purposeful and structured set of learning activities that lead to one or more qualifications. It is not used in the narrow sense of a tightly prescribed curriculum, although it encompasses such special cases. The development of appropriate programme models poses special challenges for comprehensives – beyond those that will be confronted by other merged or incorporated institutions – because two different types of educational provision are being brought together. In reality, however, the distinction between those two types has already become blurred in many areas (but not in all), and that is one of the factors that must be taken into account in choosing programme models. Another issue is that the choice of organisational models should largely be dictated by the appropriate choice of academic models or, in other words, by the way in which knowledge is organised in the curricula of academic programmes.

Before examining the options for programme models in detail, it is necessary to develop a larger view of the focus areas of current educational provision.



Although in theory the focus of university programmes is on general formative education with a theoretical orientation, and that of technikons is on technical education with a vocational orientation, that absolute division has become blurred, with both types of institutions offering a significant number of professional programmes and programmes with a strong career focus, as shown in the diagram alongside. An alternative way of depicting this, in line with the

sector’s response to the Council on Higher Education’s proposals for new academic policy, is as a single, horizontal continuum from narrowly vocational at one extreme, through professional and career-focused, to general formative at the other end. Even at the extremes of vocational and general formative education, the effect, amongst other things, of bringing programmes in line with the outcomes-based requirements of the South African Qualifications Authority (SAQA) registration process has meant that few programmes are devoid of either theoretical content or some skills orientation. What this implies is that there may be substantial areas of correspondence between different types of programmes that could form the basis for new programme configurations. This does not, however, mean the simple collapse of programmes into one another with subsequent loss of diversity.

For institutions merging to become comprehensives, there are three important questions to be addressed.

- How will programme diversity be maintained?
- At what levels is integration possible and desirable?
- Where is it possible to construct articulation pathways, and what form will they take?

For universities that are refocusing their mission, the challenge is somewhat different. University programmes are often driven from within, by developments within disciplinary and knowledge fields, and it is mainly professional programmes that have an external orientation (to the profession and its governing professional body/council). External relationships are likely to be underdeveloped in many other university programmes, but the formation of these relationships will be critical to the successful launching and running of technikon-type programmes. In these cases, institutions will have to engage in the simultaneous processes of developing programmes *and* a platform of external relationships with business, industry and community partners to inform curriculum development, to open up possibilities for co-operative and in-service learning, and to keep abreast of the particular skills requirements of the labour market.

For institutions that are becoming comprehensive universities as a consequence of mergers, the starting point will be the identification of areas of correspondence and synergy.

Finding Areas of Programme Correspondence

The areas in which levels of correspondence are most likely to be found are those that lie along the professional / career-focused axis of educational provision. These may be found in some of the following fields, and this list is by no means exhaustive:

- Agriculture and Horticultural Studies
- Architecture, Applied Arts and Design
- Commerce, Business and Management Sciences
- Computer Science and ICT
- Educational Studies and Teacher Training
- Engineering and Allied Disciplines
- Health Sciences, Human Movement Studies and Nursing
- Law, Para-legal and Security Studies
- Media Studies, Communication and Journalism
- Performing and Fine Arts
- Tourism Studies

Broad programme and qualification descriptions, however, are a poor guide to correspondence: levels of correspondence can only be determined by careful examination of curricular outcomes, contents, modes of assessment and pedagogy. There are three possible outcomes of this exercise: the identification of areas of high correspondence, areas of partial correspondence, and areas of little or no correspondence. Each of these

will require a different programme solution. Before exploring these possibilities, there needs to be some discussion of general curricular issues and how these relate to the design of programmes in the context of current and future academic policy.

Curriculum and Programme Design

Discussions are currently underway as part of the process of developing new academic policy that will provide a framework for the provision of all higher education programmes and qualifications for a single co-ordinated system. Until that policy is finalised, however, programmes continue to be governed by existing policy as established in the NATED Reports 116, 150 and 151. These policy documents are based on a notion of different institutional types and make clear distinctions between technikon and university programmes. University degree programmes are expected to give students a grounding in, and understanding of, the basic scientific principles underpinning their field of study, while technikon education focuses on the application of scientific principles in practice and the preparation of students for particular vocations and occupations.

New academic policy is likely to abandon this rigid *institutional* division in response to the realities of current programme provision and focus instead on differentiated *programmes*. At this level the distinctions still have some validity and are most obviously manifest in the difference between programmes made up of a number of unit standards and those that have been registered on the NQF as whole qualifications.

Implicit in the distinction between whole qualifications and those made up of an accumulation of discrete segments, is a principle of curricular distinction based on different forms of knowledge and their acquisition. The assumption is that knowledge with a practical, work-related orientation which draws on multiple disciplines can be segmented into blocks that have an internal coherence, the mastery of which equips students with real skills. Additional blocks may be added on, which enhance the array of skills in the student's 'portfolio', and with both vertical extension of complexity, and horizontal expansion.

The kind of knowledge that is primarily theoretical, abstract and conceptual (scientific knowledge that is usually discipline based) is not held to be divisible in the same way and depends rather on the sequential, vertical building of theoretical complexity over a number of years before any real coherence and mastery can be achieved.

Many professional and career-oriented programmes combine both types of knowledge and demand that students have some mastery of the fundamental concepts and theories of the cognate disciplines upon which their knowledge field draws, while directing theoretical understanding to its application in practical contexts. The demand for fairly complex levels of understanding makes it unusual, but not impossible, for such programmes to have lower level exit points.

The two critical dimensions of programmes for registration on the National Qualifications Framework (NQF) are duration and level of complexity, and for the purposes of

curriculum design it is vital that the two should not be confused. Duration is measured in credit hours (e.g., 360 for a general Bachelor's degree, 480 for a professional Bachelor's degree), whereas complexity of learning is indicated by the level descriptor for the qualification (e.g., level 7 or 8 on the NQF). Thus, it is possible to offer qualifications that are equivalent in duration or credit hours but differ in relation to the complexity of learning demanded of the student. For example, a three-year diploma programme may take the same time to complete as a three year degree programme but will not necessarily attain the same level of complexity. Alternatively, qualifications of equivalent levels of complexity may be of different duration, with a more 'porous' programme taking longer to complete than one that has a concentrated trajectory.

These are important considerations when it comes to finding areas of correspondence between programmes, or developing articulation pathways between different types of programmes and qualifications, or determining the access routes to higher levels of study. It is almost impossible to conceive of curricula today that do not have some general education components, that do not impart some theoretical and conceptual learning, and that do not touch on the applications of knowledge. It is the relative balance of these components within particular programmes that determines the nature of programmes and the way they are classified. The appropriate balance will be a function of the knowledge field itself, its particular stage of development, and its orientation – whether inwards to the disciplinary fields which comprise it, or outwards to the context of practice and application.

A special note on the national diploma

The national diploma is the qualification for which the majority of students in technikons are enrolled. The curriculum for each national diploma is set through the mechanism of a 'convenor technikon', after which it is submitted to the Department of Education for approval. This generic programme is then sent to the Council on Higher Education (CHE) for accreditation, after which individual technikons apply to offer the programme, with individual variations. This is the current process until new academic policy comes into effect, but it is possible that the idea of a nationally accredited curriculum could fall away, to be replaced by institutions applying on an individual basis for approval and accreditation of programmes leading to diploma qualifications.

This means that there are two possible routes to be followed by institutions that will now offer diplomas for the first time in addition to degrees, that is, universities that are refocusing their mission. One route is to devise programmes on the basis of already approved and accredited national curricula in appropriate fields. Such programmes would still have to be submitted for accreditation to the CHE by the particular institution. Accreditation of the national curriculum does not mean that any institution is at liberty to offer the programme.

The second route, one which could also be followed by comprehensive institutions wishing to offer diploma qualifications in new fields, is for programmes to be devised and submitted for approval and accreditation leading to a *university* diploma. Such

programmes would not have to conform to a national curriculum and would not lead to a *national* diploma.

Before discussing the relative strengths and weaknesses of different programme models, it may be useful to clarify the terminology used here. The terms ‘programme’ and ‘curriculum’ are often used interchangeably, but programme design at this generic level refers to the broad shape of learning programmes that attempt, in this context, to bring applied / vocational courses into some sort of relationship with more theoretical courses in the same knowledge field. The following discussion of possible programme models, or models of combination, does not, therefore, go down to the level of the actual curriculum: the statements of intention and desired outcomes, curricular contents, and the modes of assessment and delivery that make up a course of study. In practice, however, an appropriate choice of programme design can only be made on the basis of close scrutiny and interrogation of the actual curricula that comprise courses.

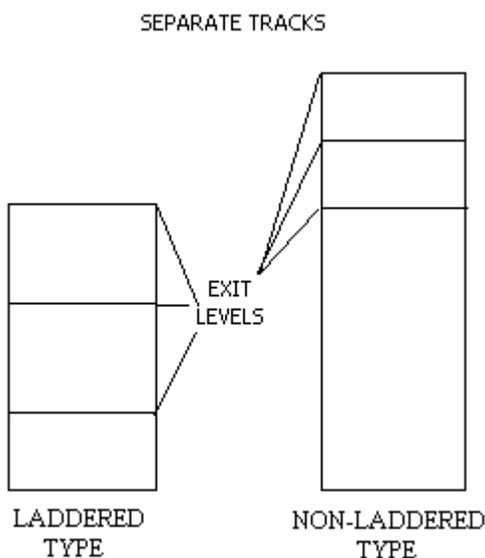
Programme Models and Corresponding Organisational Forms

1 Separate programme tracks with articulation

If the curricula of technikon and university programmes in a particular institution are found to be radically different, with little in common, the most appropriate option would be the ‘separate tracks’ model, which would leave technikon-type and university-type programmes running parallel to one another with the possibility of some rationalisation of duplicated programmes.

Separate track, stand alone programmes

Where there is little or no correspondence between programmes that are nonetheless significant components of the new overall programme profile of the institution, the solution would be separate track, stand alone programmes leading to a set of progressive qualifications. Depending on the nature of the programme, these could either be of a laddered type offering a number of exit points at fairly low levels leading to vocationally oriented qualifications or a non-laddered type where the first exit point would only be reached after completing three levels of study. Subsequent exit points would correspond to higher (postgraduate) degrees.



Where there is high programme correspondence, amounting to duplication, programmes should be consolidated and the programme model would be the same.

Decisions would have to be taken about appropriate exit points and corresponding qualifications. Where possible, the lower entry requirements of technikon programmes and their multiple exit points should be retained.

Separate colleges

This choice of curriculum organisation could in turn lead to the organisational form of separate colleges – a technikon-type and a university-type. As is the case at present, the ‘colleges’ would establish different entry requirements for programmes, and exit points corresponding to current technikon and university qualifications. The adoption of this model is unlikely to produce any significant expansion of the present range of programmes as staff would remain separated in different enclaves, preventing the development of new synergies or the creation of ‘critical masses’ where they did not exist before.

If this model were to have any chance of becoming more than the sum of the parts, particular attention would have to be paid to the development of articulation pathways, as a special feature of its comprehensive nature, that would distinguish the institution from other universities or universities of technology.

Integrated faculties with diverse programmes

The ‘separate colleges’ model is not the only possible organisational form for accommodating separate programme tracks. There is no reason why a number of different types of programmes should not be housed in a single faculty. For example, a faculty of commerce, business and management studies could provide the umbrella academic structure within which both types of programmes are offered.

2 Partially integrated programmes

Depending on areas and levels of correspondence between existing programmes, a number of options present themselves for programme design. Where there is partial correspondence between existing programmes, or new programmes are to be developed on the basis of enhanced capacity through merger or refocusing of mission, the options for programme models include the ‘consecutive’ (or extended) and ‘Y’ models of the German *Gesamthochschulen* amongst others.

The principle governing the German models is that of duration: applied courses with a vocational orientation are shorter, with a laddered sequence of exit points and qualifications; more academic, theoretical courses are of longer duration with the first exit point attained only after four years of study. However, as was suggested in the discussion above on issues governing curriculum and programme design, duration and complexity of learning do not necessarily have to follow this pattern.

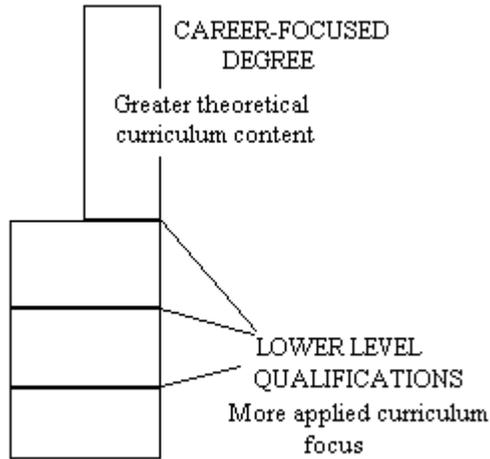
The consecutive or extended track model

In this model, students enter at a lower level than is required for degree studies and follow a common curriculum up to an exit point leading to a vocational qualification that is below the level of a degree. Students may then choose an extended part of the curriculum which would lead to the award of a degree. The programme would have to be

designed in such a way that students would cover sufficient theoretical material in the extended track to justify the award of a degree in terms of complexity of learning. This model is similar to the ‘Capstone option’ developed at Southern Illinois University where first qualifications have a strongly applied bent but can be used as stepping stones to more concentrated theoretical studies leading to a degree. The difference, however, is that the consecutive track model is not really an articulation pathway – the extended part of the track is not part of another, separate degree programme, but specifically designed to

take the student from the level of the applied qualification attained in the first part of the curriculum through to degree level work. In other words, it builds a non-laddered extension on to a laddered base. This could also be a suitable model for some professional and career-oriented programmes where both theoretical and applied or skills-oriented components are built into the base common curriculum.

EXTENDED TRACK MODEL



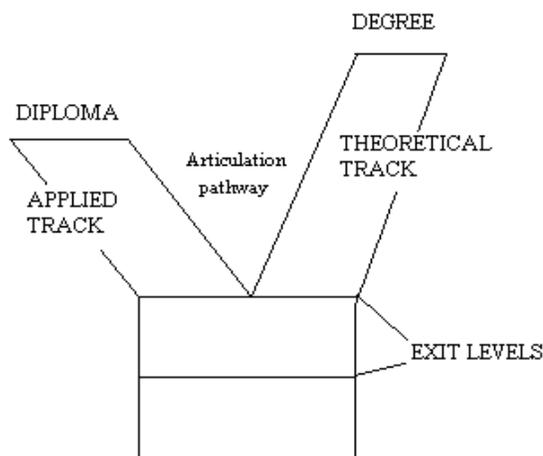
An advantage of this model is that it allows students entry to the programme at a lower level than would be the case for normal university degree studies and enables progression to degree studies for those who demonstrate the appropriate

inclinations and capacity. It is, however, an extended curriculum that is demanding in time. Given that many students take far more than the minimum time to complete their studies anyway, this model offers the opportunity to plan the curriculum to maximise progressive student success while providing numerous exit qualifications with strong employment possibilities.

The ‘Y’ or alternative track model

In this model, students enter at the same level and complete a common curriculum of

THE ‘Y’ MODEL



shorter duration than in the extended model, after which they select a track that takes them in either a more applied or more theoretical direction. These terms are not used in an exclusive sense, but to indicate a different balance or proportion of applied to theoretical content. The applied track has a lower level exit point than the theoretical track in terms of complexity of learning, but could be equivalent in duration if more time is needed to build practical learning experiences into the curriculum. In the

German model, this would appear to be a terminal track; access to higher degree study is only possible through the theoretical track. With careful curriculum planning, however, it may be possible to construct articulation pathways between the two tracks.

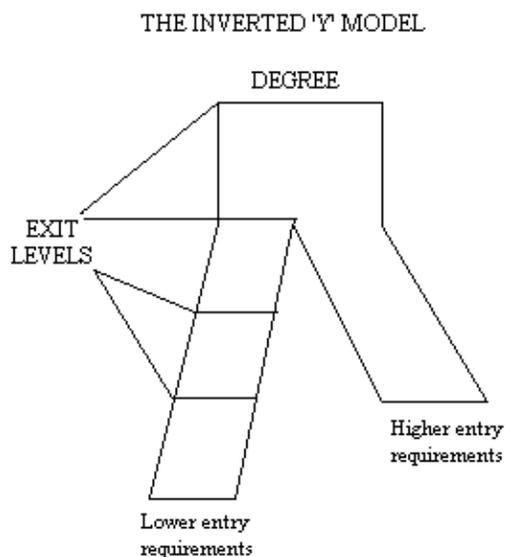
For institutions adopting this model, entry requirements would have to be at a lower level than for traditional degree studies so as not to exclude those students who would normally gain access to the applied track of this programme under current technikon rules. At the point where the programme splits into alternative tracks, it might be necessary to set specific achievement levels for acceptance into the degree track.

In the experience of the German *Gesamthochschulen*, the shorter, applied / vocational track attracted fewer students over time and more or less withered away. This would be an unwelcome outcome in the South African context as the intention is to strengthen and extend the provision of qualifications with an applied orientation while at the same time removing obstacles to students' progression into degree studies where they demonstrate the capacity to pursue them. It appears that in the German situation, students, having qualified to enter programmes, chose the degree track because a degree had higher status and offered superior employment opportunities upon graduation. Another reason was that an increasing number of students who enrolled in these programmes had the full *Abitur*.

With the imminent introduction of the Further Education and Training Certificate (FETC) it would seem that we are likely to face the same situation. The less differentiating FETC (Muller 2003) will make it increasingly difficult for higher education institutions to distinguish between students who have the capacity for degree study and those who do not. The advantage of the 'Y' model in these circumstances is that it allows for a period of learning and testing within the chosen field that may enable clearer assessments to be made by the institution, on the basis of which students may be guided into tracks appropriate to their abilities and aptitudes.

The inverted 'Y' model

In this model, different entry requirements are set for parallel applied and theoretical tracks which then fuse into a common curriculum at a higher level. This model

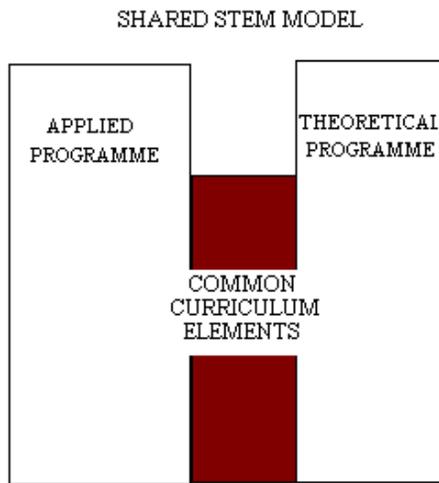


has many features in common with the extended track model, only in this case it can be seen as an articulation route into an existing degree programme. The curriculum difficulty posed by this model is that it is not clear where students on the applied track would acquire the theoretical and conceptual tools needed for higher level study. Either the ladder curriculum leading up to entry into degree level studies would have to be sufficiently rigorous to provide those tools, or students seeking entry might be required to take extra

courses and meet specific achievement levels. This model was avoided by the *Gesamthochschulen* because of the potential to perpetuate status differentiation by separating students at this early stage. It does, however, have the distinct advantage of enhancing access by offering different entry levels to programmes while still providing the route for progression into degree studies.

The shared stem model

This is a pragmatic option, with similar features to the ‘Y’ model, that focuses on rationalising some of the components of similar programmes without moving to a



completely common curriculum at any level. In other words, students from an applied programme and students from a more theoretical programme might attend some courses in common where there is strong curriculum overlap. For the rest, the programmes are distinct and may have different entry and exit levels. The sharing of some curriculum components may also enhance articulation possibilities between the programmes.

Integrated or hybrid organisational forms

All the programme models described above would be best accommodated within integrated faculties. It remains possible, depending on the full suite of programmes to be offered by the institution, that there could be some faculties in which there are no technikon-type programmes and corresponding qualifications, or no university-type programmes. This would be the hybrid organisational form described above.

Special access and foundation level courses

Some institutions already have special access and foundation level courses in place, and there is no reason why these should not be considered as another option for enhancing access to degree-type studies. Students would enter a specially designed course at a lower level than would normally be required for university entrance, and on successful completion of the course they are granted entry into the first level of degree studies. Such courses, however, are not normally credit bearing.

One or Many Programme Models?

Another issue that merits attention, again raised by the German experience, is that of standardising the choice of programme model. In the *Gesamthochschulen*, it appears that most institutions chose the 'Y' model in their integrated sectors, with the exception of Kassel, which adopted the extended model. While there is still no consensus in Germany as to which is the most appropriate model (Stumpf 2003), the issue that needs to be considered is whether the choice of a single model for all integrated programmes in an institution, or indeed for integrated programmes in all comprehensive universities, has advantages above the introduction of a range of different models within a single institution and across a number of institutions.

The arguments for standardisation relate to the portability of credits and qualifications between institutions, and to the capacity to manage diverse programme forms within institutions. The arguments against standardisation relate to the flexibility and choice required to accommodate the realities of very different kinds of curricula with different degrees of overlap or correspondence. This is an issue that may require wider debate and discussion in the sector, but a few points can be raised at this stage.

The mobility of students is a policy objective in the creation of comprehensive universities, but this is primarily understood to relate to vertical and horizontal movement within and between programmes, and the removal of barriers to further study. Portability between institutions is also desirable, but it should be borne in mind that this kind of student movement at undergraduate level is usually very limited. The national curricula followed by technikons enhance portability, but even where there is no national curriculum, universities have mechanisms for recognising and transferring credits from one institution to a comparable programme in another. In other words, this is not an insuperable obstacle to programme model diversity.

Whether the academic and managerial capacity exists to handle a plethora of different programme models within an institution is another, and perhaps more serious, matter. But against this must be set the very real possibility that the adoption of a standard programme model would involve extensive revision of the curriculum of existing programmes. This may not be a bad thing, but it is a long term project that will place its own demands on the innovative, academic and managerial skills of staff. Diversity of programme models, on the other hand, may allow for retention of significant components of existing curricula but could militate against fundamental reconsideration of curriculum options.

These are complex issues that will require careful thought. They will be eased, however, by the presence of good quality-promotion mechanisms within institutions.

Quality Assurance, Articulation and Transfer

One of the distinctive features of the comprehensive institutions will be the opportunities they offer students for successful progression, and for movement between the different tracks of programmes, or between different types of programme. In the interests of students and for the academic credibility of programmes, it is vital that the conditions for movement between programmes be considered very carefully and that students be equipped with those skills and levels of competency that will make progression possible. In this respect, the management and practice of quality assurance processes, the development of articulation pathways, and the transfer of credits, are intimately related.

At a minimum, the following factors should be taken into account when setting the conditions for articulation:

- An accurate assessment of the achieved levels of competency in the programme from which the student is transferring;
- An accurate comparison of curricular contents and outcomes between the two programmes;
- On the basis of the above, a calculation of which courses can be credited for transfer to the new programme, and at what level;
- On the basis of the above, an assessment of the level at which the student will enter the new programme;
- On the basis of the above, the identification of any additional ‘catch-up’ courses that the student may have to take to fill significant gaps before progression is possible.

This is a task that will require input from specialists within the knowledge field, approval from faculty boards and senate, the administration of agreements, and the transfer of credits from one programme to another. Institutions should consider what the best mechanism will be to handle this task. One possibility is that an articulation and transfer office is set up within the quality assurance unit of the institution to facilitate the evaluation of courses, course content, and student performance for transfer purposes.

Other aspects of programme design that are not peculiar to comprehensive institutions but could play a role in facilitating transfer between programmes are the introduction of a core curriculum and the inclusion of general education courses in all curricula.

6 RESEARCH

The fundamental issue in relation to research at these new institutions is the following: in what sort of research activities should they be engaged, and at what level should research be pursued?

The specific goal for research articulated in government policy is for “expanded opportunities for research and the strengthening and development of applied research through linking emerging foci of the technikons to the current research strengths of the universities.” (Department of Education 2002:24)

A research culture is supposedly integral to the mission of universities, but this does not mean that it is always well developed. On the other hand, until relatively recently, research was not considered to be a significant part of the mission of technikons. In the past few years, however, some technikons have made advances in developing niche research areas and improving the qualifications profile of staff in their institutions. There are, therefore, no general assumptions that can be made about which institutions will have greater research strengths.

The research profile for the new institution will be developed on the basis of three factors: existing research strength and activity, fit with the mission of the new institution, and new capacities that may have come into being through merger or incorporation. If the ideal of integration is to be pursued, then one of the objectives for institutions that are merging to become comprehensives will be to explore possible congruency in existing areas of research activity in different institutions.

The other pertinent policy goal to bear in mind is the one related to responsiveness, i.e. “enhanced capacity (because of the broader range of expertise and foci) to respond to the social and economic needs of the region in general and of industry and civil society in particular.” (Department of Education 2002:24) The way in which this is taken up will be, at least in part, a function of the mission of the institution.

In general, critical questions to pose are the following:

- Are there areas/fields in which the new institution has the capacity and resources to support postgraduate studies and/or significant research activity?
- Do these areas support the mission of the institution?
- Will it be desirable to promote research capacity across the institution, and if so, how will this be achieved?
- In the new institution, what will the relative emphases be on basic, applied or strategic research? In other words, how will the *research* mission of the institution relate to the *general* character, identity and mission of the institution?
- Is there potential to develop a creative interface between different kinds of research in the same fields? Between basic and applied research?

- Is there potential to develop consultancy services in some fields that would contribute to fulfilling the institution's commitment to serving local or regional interests? Are there some already existing services of this nature that the new institution would wish to retain?
- Are there safeguards in place to ensure that the provision of consulting services does not impact negatively on the provision of teaching programmes?

Postgraduate Programmes

The academic programme models explored in Section 5 focus attention primarily on undergraduate levels of study. It is possible to extend the tracks of these programmes into postgraduate study, if the conditions mentioned above have been met. There is, however, far less justification for separating programmes at this level and it makes more sense to run a single set of programmes leading to master's and doctoral qualifications. Entry requirements should be clearly specified, and articulation pathways developed from undergraduate programmes.

Funding Research

A critical question is how research in the comprehensives will be supported and funded both internally and externally. This becomes complex when one looks at the range of different types of institutions that are merging or being incorporated. If the objective is to develop some research capacity (and this does not have to be at the high end of research) across the new institution, then it will be important to have in place the internal policies and structures to encourage and support this. In terms of budgetary allocations, the institution will need to decide on the appropriate level of institutional commitment to promotion of the research function.

In terms of external funding, the National Research Foundation (NRF) at present administers development programmes through its business unit, Research, Innovation and Science Advancement (RISA), that are specifically designed to promote research and a research culture, such as the Research Niche Area Programme targeted at technikons and historically black universities (HBUs). In view of the current changes to the higher education landscape, this categorisation of institutions becomes problematic: not only will new forms of institutional arrangement come into being, such as comprehensive universities, but the process of merging and incorporating will bring institutions and parts of institutions together that have previously fallen into different institutional categories under the NRF (and perhaps other) funding regimes. For example, the new university in Port Elizabeth will bring together an historically white university (University of Port Elizabeth) with a technikon (Port Elizabeth Technikon) and part of an historically black university (the Port Elizabeth campus of Vista University), each of which may have received support for research through a number of different programmes. Furthermore, the resultant new institution will be called a university.

Clarity will be needed on some of the issues set out below:

1. How will research foci / niche areas currently supported under special funding programmes be funded in the future? What will the mechanism be?
2. Is present research funding allocated to a department, a school, a faculty, or to the institution? Will it be carried over to the new institution, or to a reconfigured faculty that may offer both technikon and university type programmes?
3. Through what mechanism will comprehensive universities apply for research funding in new areas that may have developed as a consequence of creating 'critical mass' through the merger?

Sometimes the creation of comprehensives brings together institutions that have received NRF support through a number of different programmes (straight and special, HBU and technikon) and they will need to be reassured that the support will still be available to them. This is also true, of course, for some of the other non-comprehensive mergers.

The NRF has confirmed that it is currently examining the implications of the restructuring of higher education for its policies. The sector will be informed of the outcomes of this process as soon as they are known.

Rating of Scientists

The NRF also has a system for rating scientists using criteria that do not make any distinction between academics and researchers on the basis of their institutional location. This means that in the new comprehensive universities, the potential arises for unfair comparisons to be made between staff coming from a background where there have been few expectations for them to conduct research, and staff who work in a relatively rich research culture. For example, there are reports that some universities have used NRF ratings, unofficially, in considering staff promotions.

This is another issue of which the NRF is aware and it wishes to approach the matter in such a way that there will be no unfair treatment of staff in terms of research funding and academic development.

Research Culture of a Comprehensive University

Comprehensive universities will be in a position to bring together academics and researchers with a variety of ways of conceptualising and approaching problems in a wide range of fields. The potential exists to create extremely rich and fruitful environments in which research can extend, where the capacity exists, from basic or fundamental work to direct responses to practical problems. Such environments could provide postgraduate students and staff with unique possibilities and experience.

7 CONCLUSION

There are two compelling reasons for the decision to create comprehensive universities in South Africa as a new institutional type on the higher education landscape. The first is that they will be in a position to address important access and opportunity issues. Many higher education systems throughout the world have been confronted by the demand for mass higher education, and many have struggled to find the appropriate institutional forms through which to provide it. The advocacy of the comprehensive model (*Gesamthochschule*) for all German universities was one such democratising attempt. Its relative failure is measured largely in terms of what is now seen as its misguided attempt to force all institutions into this mould but its success is measured in terms of the access to higher education that it afforded to many students. The junior or community colleges in the United States have provided access to certain levels of higher education for millions of Americans but transfer to four-year colleges and baccalaureate programmes is still fraught with difficulties. In Britain, despite numerous attempts to extend educational opportunity, students with middle class backgrounds are still predominant in higher education.

It is hoped that the comprehensive university in South Africa will be able to overcome many of these problems. Some of the new comprehensives will now make technikon-type programmes available to students in areas where there has been no previous provision, giving access to students who do not meet the requirements for university degree study, and offering shorter, work-related qualifications with possibilities for further advancement. For many students, their school-leaving results are a poor indication of their abilities and potential. All the comprehensive universities will offer programmes with varying entry requirements, and some, particularly those that come about through the merger of universities with technikons, will be able to offer articulation and progression pathways into degree study for students with ability. And in a reverse movement, they will offer students who have entered into and completed degree studies the opportunity to cap their studies with a work-related, technical or vocational qualification.

The second reason is that they will be the only universities in the country that bring diverse kinds of learning programmes, from vocational to professional and general formative, under one roof. If this is all they do, however, they will have realised only part of their potential. The sum will remain equal to the parts. For the sum to be greater than the parts, those different academic and learning orientations need to come into 'dialogue' with one another and enrich each other. If they succeed in that endeavour, they will also succeed in meeting the complex demands of our developing economy, an economy shaped by local needs and the pressures of globalisation that have made knowledge, its reconfiguration and its application the key to economic well-being. In particular, it demands a deepening of the relationship between academic and vocational learning that has been taken up in the United States as the 'new vocationalism'. Numerous writers attest to the objective of integrating academic and technical education to prepare the kind of thinking, decision-making, problem-solving workforce that advanced industry will

require in the future (Prentice 2001) and to provide broad skills that will set students on career pathways, and not limit their horizons to dead-end jobs (Jacobs 2001).

As one writer puts it:

Work in this new environment requires a heightened ability to manage information and technology, analyse and solve problems, and continuously engage in learning to use new and updated information. This picture of the workplace stands in stark contrast to the past, when vocational education was characterised as mostly preparation for narrowly defined, entry-level employment.

Second, understanding the changing nature of modern work provides an important backdrop for understanding the importance of changing and enhancing vocational [curricula]. Nearly all modern work requires an integration of academic and technical concepts to solve real-world problems. Therefore, integrated academic and vocational curriculum and instruction is crucial to the preparation of successful employees and lifelong learners. (Bragg 2001)

It is at the level of the curriculum that this integration may be achieved, but integration should not be seen as an overriding ideal into which all curricula must be forced. Where knowledge fields have developed a strongly applied orientation, some integration may be possible, but where this is not the case, the forcing of curricula into applied mode is more likely to damage or weaken the disciplinary base than strengthen it. This level of the curriculum cannot be addressed in any detail here because of the highly diverse empirical contents of different curricula. It is a topic, however, that merits considerable further discussion and debate.

Governments and policy-makers around the world are recognising at this time more than ever before the critical relationship between education and social and economic development. In the diversity of their academic offerings, the flexibility of their structures, and the opportunities they offer to students, comprehensive universities should be able to position themselves to make significant contributions to development at local, regional and national levels.

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