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Validation, Assessment, Articulation and the Role of National Qualification Frameworks

Differentiation and Articulation in Tertiary Education Systems: a Study of Twelve African Countries

By Njuguna NG'ETHE, George SUBOTZKY, George AFETI

Working Document
Draft

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A Study of Twelve Countries

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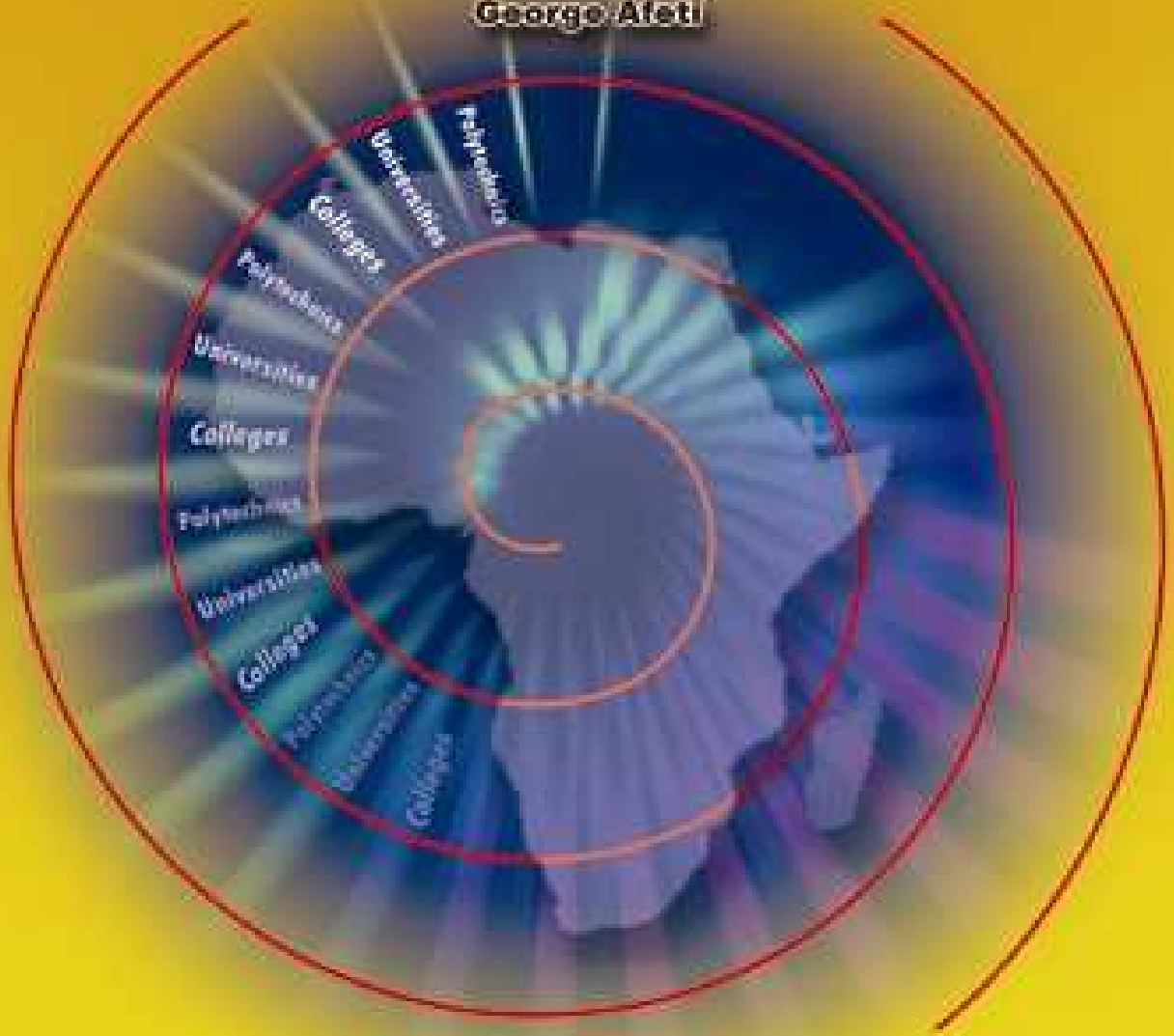

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DIFFERENTIATION AND ARTICULATION IN TERTIARY EDUCATION SYSTEMS:

A Study of Twelve African Countries

Njuguna Ng'ethe
George Subotzky
George Afeti

eptember 2007

ASSOCIATION FOR THE DEVELOPMENT
OF EDUCATION IN AFRICA
Working Group on Higher Education
and the
Association of African Universities

In partnership with the World Bank

Working Document
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CHAPTER FOUR

Foreword

Partnership has become a watchword for the global higher education community in the 21st century. The pace of events, the rapidity of change and the explosion accessibility to information have made it virtually impossible for any single tertiary institution, governmental education agency, or development assistance organization to stay on top of even the few topics that are strategically relevant to its mission. In this area, a division of labour among similarly inclined partners sharing common interests is proving to be an effective mechanism for maintaining 'manageability' and institutional efficiency in our increasingly complex and dynamic world.

One such partnership that has endured, evolved and quietly proved productive over the better part of the past two decades involves the Association of African Universities, the Working Group on Higher Education of the Association for the Development of Education in Africa (ADEA), and the World Bank. Formed in 1989, the Working Group was initially housed in and led by the World Bank, and the Association of African Universities carried out its first major piece of commissioned research on African higher education. Since then, these three organizations have regularly contributed information and resources in pursuit of common goals. Frequent interaction and occasional concrete collaborations have nourished a rapid expansion of available bibliography on the topic of African higher education, helped to spark the introduction and diffusion of strategic planning within African tertiary institutions, produced two regional conferences on higher education development in 1995 and 2003, and assisted the emergence of a broad and informed consensus among universities, governments and development partners concerning institutional and policy priorities for African higher education.

The study presented here is but one example of this effective partnership. It brings together the credibility and access of the Association of African Universities, the implementation capacity of the ADEA Working Group on Higher Education, and the extensive dissemination network of the World Bank to provide you with a pioneering policy analysis that surely would have been diminished in the absence of any one of these partners.

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The views and opinions expressed in this report are, however, those of the authors and not those of the WGHE, ADEA or the World Bank.

July 2007

Acronyms and Abbreviations

AAU	-	Association of African Universities
ADEA	-	Association for the Development of Education in Africa
BEE	-	Uganda Business Education Examinations
BTS	-	Brevet de Technicien Supérieur
CAE	-	College for Adult Education
CAMES	-	Conseil Africain et Malgache pour l'Enseignement Supérieur
CAPA	-	Commonwealth Association of Polytechnics in Africa
CHE	-	Commission for Higher Education
COMESA	-	Common Markets for Eastern and Southern Africa
COREN	-	Council for Regulation of Engineering in Nigeria
DEA	-	Diplôme d'Etudes Approfondies
DoE	-	Department of Education
DoL	-	Department of Labour
DST	-	Diplôme Supérieure de Technologie
DUT	-	Diplôme Universitaire de Technologie
DVCs	-	Deputy Vice-Chancellors
EAACE	-	East African Advanced Certificate of Education
EAC	-	East African Community
EACE	-	East African Certificate of Education
ECOWAS	-	Economic Community of West African States
EI	-	Education International
ESP	-	Ecole Supérieure Polytechnique
FCUBE	-	Free Compulsory Universal Basic Education
FTE	-	Full-time equivalent enrolments
GATS	-	General Agreement on Trade and Services of the World Trade Organisation
GDP	-	Gross Domestic Product
HEAC	-	Higher Education Accreditation Council
HE	-	Higher Education
HELB	-	Higher Education Loans Board
HND	-	Higher National Diploma
ICTs	-	Information and Communication Technologies
IoT	-	Institute of Technology
ITEK	-	Institute of Teacher Education-Kyambogo
IUCEA	-	Inter-University Council of East Africa
IUT	-	Institut Universitaire de Technologie
JAB	-	Joint Admissions Board
JICA	-	Japan International Cooperation Agency
JKUAT	-	Jomo Kenyatta University of Agriculture and Technology
KACE	-	Kenya Advanced Certificate of Education
KCE	-	Kenya Certificate of Education
KCPE	-	Kenya Certificate of Primary Education
KCSE	-	Kenya Certificate of Secondary Education
KHI	-	Kigali Health Institute
KIE	-	Kenya Institute of Education
KIE	-	Kigali Institute of Education
KIST	-	Kigali Institute of Science, Technology and Management
KNEC	-	Kenya National Examinations Council
MES	-	Ministry of Education and Sports, Uganda

MoE	-	Ministry of Education
MoEST	-	Ministry of Education, Science and Technology, Kenya
MSTHE	-	Ministry of Science, Technology and Higher Education, Tanzania
NAB	-	National Accreditation Board
NABPTEX	-	National Board for Professional and Technician Examinations
NBTE	-	National Board for Technical Education
NCCE	-	National Commission for Colleges of Education
NCDC	-	National Curriculum Development Centre
NCHE	-	National Commission for Higher Education
NCTE	-	National Council for Tertiary Education, Ghana
ND	-	National Diploma
NEEDS	-	National Economic Empowerment and Development Strategy
NEPAD	-	New Partnership for Africa's Development
NPC	-	National Polytechnics Commission
NPs	-	National Polytechnics
NQF	-	National Qualifications Framework
NRM	-	National Resistance Movement
NUI	-	Non-university Institution
NUC	-	National Universities Commission
NUR	-	National University of Rwanda
NYS	-	National Youth Service
PhD	-	Doctor of Philosophy
PLE	-	Primary Leaving Education Certificate, Uganda
PUIB	-	Public Universities Inspection Board, Kenya
RIAM	-	Rwanda Institute of Administration and Management
RPL	-	Recognition of Prior Learning
SADC	-	Southern African Development Community
TACE	-	Tanzania Advanced Certificate of Education
TCE	-	Tanzania Certificate of Education
TIE	-	Tanzania Institute of Education
TSC	-	Teachers' Service Commission, Kenya
TTIs	-	Technical Training Institutes
TIVET	-	Technical, Industrial and Vocational Education and Training
UACE	-	Uganda Advanced Certificate of Education – Advanced Level
UCE	-	Uganda Certificate of Education – Ordinary Level
UDSM	-	University of Dar es Salaam
UJTC	-	Uganda Junior Technical Education
UNEB	-	Uganda National Examination Board
UNESCO	-	United Nations Educational, Scientific and Cultural Organisation
UNISE	-	Uganda National Institute of Special Education
UoN	-	University of Nairobi
UPK	-	Uganda Polytechnic-Kyambogo
UTE	-	Uganda Technical Education
VCs	-	Vice-Chancellors
VETA	-	Vocational Education and Training Authority
WGHE	-	Working Group on Higher Education
WTO	-	World Trade Organisation
WUCSC	-	Western University College of Science and Technology

Executive Summary

Background

Differentiation is the process whereby distinct types of tertiary educations emerge in response to a country's need for educational programs that provide diverse types of skills and knowledge to a widening range of students with divergent abilities and interests. *Articulation* refers to the mechanisms that enable student mobility within and among the institutions that comprise the tertiary system, e.g., academic credit accumulation and transfer, recognition and equivalence of degrees, recognition of prior learning, etc. Differentiation and articulation become important characteristics within tertiary education systems that are shifting from elite to mass access, and that are seeking to provide an increasingly sophisticated national economy with the mix of human resources needed to maximize productivity, efficiency and overall competitiveness. As globalization has heightened economic competition and tightened the margins for performance, governments have come to realize that educational differentiation and articulation are policy variables that can be manipulated to the benefit of both national and individual interests.

Within tertiary education systems, differentiation occurs 'vertically' when distinct types of institutions appear, as the traditional research university is joined by polytechnics, professional institutes, non-research universities, and junior colleges. It also takes place 'horizontally' as each of these publicly funded institutional types is complemented by the appearance of new educational providers in the same category that are operated by for-profit, non-profit, religious, international or local government entities, and run on a residential, non-residential or distance education basis. Horizontal differentiation is generally a response to increased demand for student access to higher education. But vertical differentiation is normally a reaction to labour market needs for a greater diversity of graduate skills and levels of training.

This study strives to sketch an initial map of the extent and nature of institutional and programme differentiation within African systems of tertiary education. In doing so, it also seeks to chart the patterns of articulation that have emerged – or been consciously put in place – between the different institutional types (e.g., public universities, private universities, polytechnics, training colleges). The analysis of tertiary education differentiation and articulation is based on field visits to a dozen selected African countries. Its purpose is to improve general understanding of this under-researched but strategically important technical aspect of African higher education at a time when it is becoming an important aspect of education policy.

Overview of Findings

African countries display far more differentiation than articulation within their tertiary education systems. Their systems are quite diverse and can be classified as unitary, binary, trinary, semi-differentiated or fully differentiated, depending upon the number of different

institutional types that comprise the tertiary system. In general, the polytechnic sub-systems appear relatively undifferentiated in comparison to the university sub-systems.

Differentiation in higher education systems is clearly apparent within Africa, although the nature and extent of it vary from country to country. These differences originate in the varieties of colonial experience, political economy and immediate post-independence history. But they also reflect how countries have subsequently been able to position themselves in relation to the internationalisation of higher education and to the market forces associated with globalisation.

For the most part, articulation within Africa seems to be in its infancy. The mobility of staff and students between university and non-university tertiary institutions suffers from a lack of cooperation and absence of dialogue between the two institutional groups. In fact, an unhealthy rivalry often characterises their relationship. Polytechnic graduates seeking "academic progression" into the university system often encounter a void in which there are no clearly defined articulation pathways to follow, the level to which they are admitted being dependent on the course they wish to pursue and the regulations of the particular university to which they are applying. Credit transfer mechanisms rarely exist between similar polytechnic and university programmes. In fact, some universities do not even recognise any prior learning or skills acquired at the polytechnic level in their admission requirements.

Interestingly, articulation and mobility between similar institution types is also rare. Students from private universities have little chance to transfer to public universities. Likewise, student mobility among public universities is frequently not well defined, particularly in Anglophone Africa. In fact, the absence of an easily understood and mutually accepted credit transfer system is a major barrier to the articulation of many African higher education systems.

The situation regarding articulation in Francophone West Africa is different. In Senegal and Cameroon, higher education institutions that deliver sub-degree polytechnic-type qualifications are organizationally linked to the universities and are not seen as entirely separate or autonomous institutions. Thus, top graduates from the diploma-awarding university institutes of technology can be admitted into degree programmes at the appropriate level, subject only to passing an entrance examination.

The Prevalence of Binary Systems

Though the tertiary systems are quite varied, evidence suggests that the binary system is dominant, with universities and polytechnics as the two principal institutional types. Most systems began with such a binary structure, and Ghana, Kenya, Malawi, and Tanzania retain them today. But variations occur around the binary model, with Cameroon, Nigeria and Senegal being classified as differentiated, Uganda as trinary, and Zambia as unitary. Mozambique and Rwanda seem to be on a transitional path towards fully differentiated systems. As the traditional binary boundary between universities and non-university institutions has become increasingly blurred, some interesting university-non-university institutional hybrids have emerged: for example, the Kigali Institute of Science, Technology and Management (KIST) in Rwanda, the 'comprehensives' in South Africa, and the University of Malawi.

This blurring is the result of two main drivers. The first relates to market forces, which create a two-way drift: 'academic' drift (the aspirations of non-universities to gain university

status), and 'vocational' drift, (universities seizing market opportunities by offering vocational courses). Academic drift is evident, for example, in Kenya where polytechnics are in the process of being elevated to university status. Vocational drift is evident everywhere as universities attempt to make up financial shortfalls by offering high-demand, market-driven vocational programmes.

The second driver, especially in complex tertiary education systems such as those of South Africa and Nigeria, is a lack of policy clarity regarding the appropriate boundaries between polytechnics and universities in terms of their mission, purpose, curricula and programmes (and the knowledge underpinnings of these). This has allowed the two-way drift to proceed unencumbered by regulation.

The Explosion of Private Universities

A common feature in most of the countries covered in this study is the appearance and multiplication of private providers of university education. This is a significant regional trend. Since 1990 private universities have increased at a much faster rate than public universities. Although the number of public universities has expanded by 66 percent over the past fifteen years – from 113 to 188 – the number of private universities has multiplied seven-fold during the same period from 14 to 107.

The rise of private provision in higher education responds to two factors. The first is the high demand for university education. A common feature in the countries covered in this study is that nearly all those who qualify to enter university would much prefer to go to university as opposed to attending another type of institution such as a polytechnic. The result is very high demand for university education even when market conditions (e.g., graduate unemployment) indicate that this might not be the most rational thing to do. The second factor is the inability of the public sector to meet this strong demand for university access. Data from all the countries covered in this study indicate that only a small fraction of those who obtain the minimum requirements to enter universities are actually admitted to the public universities. The explanations for this exclusion include: inadequate funding from the government; linking of admissions to available bed space in universities; and insufficient academic staff in the universities.

Drivers of Differentiation

National policy. A major finding of this study is that government policy documents are beginning to voice the need for differentiated tertiary and higher education systems. In some cases, the policy is prompted by political considerations. In other cases, it is informed by developmental positions, such as the World Bank argument that Africa requires a diversified workforce in order to respond effectively to the continent's development priorities and challenges. Regardless of the underlying motive, higher education differentiation as an explicit policy is evident in most of the countries covered in this study.

However, two shortcomings are often associated with these policies. The first is the tendency to upgrade polytechnics into universities. The danger here lies, not in upgrading the polytechnics into universities, but in doing so without catering for their replacement and the instructional gap they leave behind. The second risk is the policy ambiguity surrounding the establishment of private universities. Though these institutions have mushroomed in the last decade, they may still be regarded in policy circles as the "illegitimate brothers" of their

public universities counterparts. They are, therefore, made "welcome" in the context of increasing access, but they are not fully integrated in higher education planning and policy discussions.

Market forces. All the studies of reform taking place in the African universities, including this study, have identified the proliferation of market-driven courses and programmes, sometimes also referred to as income-generating academic programmes, as one of the major changes to take place in African universities in the last decade. Sometimes these programmes have been offered at the degree level; in other cases they have been packaged as discreet short courses tailor-made for specific clienteles. Either way, the objective has been the same: to provide instruction for a fee with a large skills component using teaching methods that are closer to technical training than conventional university pedagogies. In the process, they have, at least on the surface, increased programme differentiation.

Institutional reforms. Recent studies of African higher education have documented the reforms that have been taking place in African universities in the last ten years. These reforms are on-going and a number of them have implications for programme differentiation. These include: rapid expansion in the number of universities (both private and public); reforms in university governance, particularly decentralisation of governance; introduction of income-generating activities, including introduction of "market driven" courses mentioned earlier, etc.

Industry. In theory, industry ought to be a driver of differentiation. But this did not come out in the study. To the extent that industry has a stake in higher education, it resides in its demand for skills rather than what it refers to, sometimes contemptuously, as merely theoretical knowledge. In doing so, industry implicitly recognises the binary divide between the two types of knowledge. Notably, industry is beginning to take more interest in higher education, especially in (a) governance through representation in governing councils; (b) funding through student scholarships; (c) R & D collaboration; (d) provision of student internships; and (e) joint patenting of innovations. As the industries become more sophisticated, so will their demand for more differentiated skills. Industry is thus a potential driver of higher education differentiation.

Regional initiatives. Regional higher education policy does not feature in this study for the obvious reason that it has remains at an early stage of development. To the extent that regional higher thinking exists, it is dominated by the issue of student mobility. Yet it is important to remember that the emerging regional economic blocs, if they succeed, will sooner or later demand collective thinking on human development, if only in the context of common markets and the resulting free movement of labour.

Inhibitors of Differentiation

Resources. Higher education administrators, especially deans and departmental chairs, are not only aware of global trends in higher education, a key feature of which is more and more differentiation as successive domains of new knowledge emerge, but they are also frustrated that they are unable to introduce new areas of study and specialisation because of longstanding resource constraints. Most departments, for example, operate at less than optimal staff capacity. Research, the key generator of new knowledge areas, is barely funded.

Isomorphism. A main inhibitor of differentiation is institutional isomorphism, or the gradual adoption of a single set of institutional characteristics within a higher education system. Isomorphism takes two forms: *mimetic* (strategic seeking of status) and *normative* (seeking of quality and professionalism). This study finds that isomorphism is evident in some countries where newer universities are fashioning themselves after older ones, or where newer polytechnics are simply copying the programmes of older ones.

Undifferentiated governance and funding structures. One finding of this study is that higher education governance structures tend to be similar among universities and equally similar among polytechnics. The effects of this on programme differentiation are not obvious, but they are fairly predictable with regard to institutional differentiation. That is, similar governance structures are likely to result in institutions that behave the same way. Indeed institutions sometimes conspire to behave the same way with regard to some contentious issues, such as staff union matters. The uniformity is reinforced by common funding structures, especially with regard to public institutions, all of which are highly dependent on the managers of the public purse whom they cannot afford to "alienate" by "behaving creatively."

Absence of size and shape debates. In Sub-Saharan Africa, universities articulate poorly with each other. This reflects in part the absence of a national policy dialogue regarding the appropriate shape and size of the higher education system. Higher education oversight bodies such as national commissions or councils for higher education should ideally spearhead this national agenda-setting discussion. But these bodies are uniformly young or non-existent. As a result, they are yet to establish their leadership credibility with pre-existing (and sometimes suspicious) tertiary institutions. Thus, the important public discussion of the size and shape of national tertiary education systems necessary to build the consensus required to launch substantial system reforms does not take place, unless perhaps it is prompted by a major local crisis.

Drivers and Inhibitors of Articulation

Demand for access. Greater social demand for higher education and for equity of access has generated an increasing emphasis on the creation of articulation and mobility pathways for students throughout the education and training framework. To this end, a number of countries worldwide have developed integrated national qualifications frameworks (NQF) to facilitate access, mobility and progression within education, training and employment. Central to the construction of an NQF is a coordinated approach to education and training among formal institutions and the workplace. This aims to ameliorate traditional tensions between discipline-based learning, which occurs mainly in institutions, and work-based learning, which occurs mainly in the workplace, but includes professional practice. To this end, the qualifications framework defines levels of qualification against which outcomes-based qualifications and standards can be pegged. This seeks to create equivalences upon which credit accumulation and transfer can occur.

National policy. Articulation has received far less policy attention than differentiation. Even though almost all countries acknowledge the need for articulation as a means of producing a more efficient tertiary education system and a less fragmented labour force, the practices indicate otherwise. Even in those few cases where formal articulation routes exist, little evidence of articulation can be found. This is likely to be the result of limited institutional capacities within the tertiary education system – engendering articulation is quite complicated

because it involves multiple institutional actors, multiple sub-sets of the educational system, and system-wide student information systems.

Internal governance structures. The internal structures of institutions have tended to inhibit articulation amongst and between institutional types. The universities are under no obligation to articulate with polytechnics. This is because of their legal autonomy and the way they jealously safeguard that autonomy. Consequently, they tend to view articulation—even amongst themselves—as a managerial nuisance that is best avoided.

Industry and the labour market. This study turned up no evidence that the labour market, in general, or industry in particular, is driving articulation. On the contrary, industry may inhibit articulation with its tendency to partner with specific institutions. The market, on the other hand, seems to be indifferent to articulation so long as it obtains the skills that it needs.

Policies and Practices from Other Countries

In Chile, recent substantial economic gains have been underpinned in part by a far-reaching reform of the higher education sector that included a major diversification of educational institutions. Private tertiary institutions were authorised in 1990 and tertiary education was sub-divided into three levels: universities, professional institutes, and technical training centres. How was this differentiation carried out? One policy initiative was jointly launched by the Ministries of Finance, Education and Labour to create a lifelong learning system for workers and citizens. A second was a competitive grants program that encouraged the overhaul of course content, curricula structure and pedagogy through the provision of financial awards for related equipment and facilities. A third was the introduction of the concept of educational benchmarking with the aim of comparing strategically important courses with world standards of quality. A fourth was the extension of the national student loans and grants program to include shorter term technology training. Finally, certain tax exemptions were provided to workers who sought to update their skills through continuing education.

Korea's economic success has been due to the development of a broad, differentiated and articulated tertiary education system, a strategically oriented R&D program, policy incentives for industry in key export areas, and linkages among higher education, R&D, and industry. Differentiation and articulation have been constant themes in the country's long-term campaign to develop professional education capacities in support of its export industries. In 1971, the Korea Advanced Institute was created at the top of the educational pyramid to provide high quality MSc and PhD programs. In 1976 a sub-system of two-year vocational junior colleges was created as the market demand for higher skill levels became stronger. This was followed in 1979 by putting in place a broader two-year junior college system of both public and private colleges. In 1977 the Korea Science and Engineering Foundation was set up to fund university research and award long-term research fellowships. Various Government Research Institutes were established in the 1980s with mandates to focus on strategic economic areas such as ship-building, electronics, and automotives. Engineering Research Centres were created on university campuses in 1990, while research and development were promoted through a competitive funding program, tax credits, and customs duty waivers on research equipment. In 1995, the two-year college diploma was replaced by a two-year associate BSc. degree in order to increase attractiveness and emphasize articulation with the four-year degree programs. Today this junior college system hosts 26 percent of tertiary enrolments, and 90 percent of these colleges are privately operated.

Singapore illustrates how it is possible to progressively construct a differentiated and articulated tertiary education system through a sequence of policy initiatives. First, the country's two colonial era universities were merged to form a stronger National University of Singapore in 1980. The next year the Nanyang Technological Institute was established, evolving into a technological university by 1991. It was designed to serve as the human resource cornerstone for an economic growth strategy based on competence in selected new technologies such as medical robotics, microelectronics and optics. During the 1990s ten post-secondary Institutes of Technical Education were established to generate the middle level technical skills to support this effort. This had previously been the role of the nation's five polytechnics, which were re-directed to emphasize continuing education and post-employment professional development programs. Access to tertiary education was expanded by setting up several regional junior colleges that were linked to the national university through student transfer mechanisms. Likewise, strong student performers from the polytechnics were given opportunities to progress into university level studies. At the end of the 1990s, the National University of Singapore initiated a strategic shift to a comprehensive research-intensive university with a strong complement of postgraduate programs. In 2000 the Singapore Management University was opened as a private limited company in partnership with the Wharton School of Business at the University of Pennsylvania in the United States. Part of its mandate is to provide lifelong learning options to working adults. In 2005 the first of three planned regional tertiary-level Institutes of Technical Education was opened. Strikingly, these new regional Institutes are intended to impart practical technical skills to the *lower* 25 to 30 percent of the secondary school cohort that previously had no access to tertiary education. In this way, Singapore has employed the instruments of institutional differentiation and articulation in pursuing human capital formation strategies that have generated a vigorous economy that belies its relatively small size.

Issues for Policy Consideration

Institutional and programmatic differentiation appears to be increasing within African tertiary education – driven by both market forces and government policy. But the extent to which articulation is becoming operational appears to be minimal, even though formal channels for articulation between the university and non-university sub-sectors may exist. Consequently, differentiation and articulation within African higher education systems remain vital but largely unused policy instruments for enhancing equity and contributing effectively towards national development goals. To change these circumstances, governments may wish to consider the following actions:

1. Encourage increased access in a targeted way through both institutional and programmatic differentiation in order to meet development goals. To maximise diversity of offerings, cost effectiveness and access, the binary divide should be *flexibly* maintained through appropriate regulation to control academic and vocational drift. Prospects for effective regulation are dependent on national conditions. In some cases, such as Mozambique and South Africa, strong centralised national policy frameworks are conducive in this regard. In smaller systems, much greater institutional autonomy is evident, creating bigger challenges for regulation.
2. The dominance of universities in non-Francophone countries should be reversed. Expansion does not necessarily imply diversity and many new universities, rather than non-university institutions, are being established. This means confronting popular aspirations for universities as institutions of first choice, and the persistent attribution of

low status to non-university institutions. These perceptions could be changed through: (a) publicly clarifying complementary roles and identities; (b) encouraging and rewarding collaboration; and (c) creating unified supervision and stakeholder bodies.

3. Comprehensive hybrid institutions, i.e., combinations of residential and open leaning, could be developed – especially to provide access to rural areas. This is already beginning to happen. However, the challenge will be to maintain quality in the process of differentiation despite ongoing fiscal constraints in most African countries.
4. In view of the problems of articulation and the absence of any meaningful policy dialogue between the two institution-types, the creation of parallel universities with distinct mandates within the higher education system may be the option of the future, as is already happening in Kenya and South Africa. The policy, however, is controversial in that it could leave a "middle level skills vacuum" if the new technical universities fail to cover this level of training. If the polytechnics are upgraded to technical universities offering "skills degrees" and training programmes to the highest level possible, the traditional universities will then concentrate on research and the awarding of predominantly "knowledge" degrees.
5. At the national levels, agencies charged with promoting quality standards and the accreditation of higher education programmes should strive to establish a mutually acceptable and easily readable credit transfer system to improve articulation within the entire higher education sector. This they can do by specifying minimum credit requirements for the different levels, by developing generic descriptors, and by crafting instruments for measuring and classifying learning outcomes and competences within national qualifications frameworks. The imperatives of articulation across institutions and qualification levels require an overarching national, regional and eventually international framework. This does not, however, imply the "uniformisation" of courses, but rather the creation of convergence in the recognition of achievement levels.
6. The identity of non-university institutions should be made more distinct. One possible suggestion for strengthening non-university institutions and differentiating them from universities is to customize their admission requirements on a distinct curriculum at the secondary school level that more adequately prepares potential students for vocational training in terms of acquisition of practical pre-career skills. In other words, the curriculum for secondary school students aiming for traditional first degree programmes of study should not be the same for those who are better inclined for the more practically-oriented, career-focused education in non-university tertiary institutions. This horizontal differentiation at the secondary school level should not prevent the mobility of students between universities and non-universities, provided the entire educational system is well articulated.
7. The image and reputation of non-university institutions should be enhanced by improving the quality of their training and through effective collaboration with industry in the design of their training packages and the mounting of vigorous campaigns of sensitisation regarding their important role in national development. This will not be an easy task. Contrary to what the polytechnics in Anglophone West Africa would want the public to believe, the HND holder is not appreciated as a graduate with practical skills superior to those of his university counterpart. The polytechnic graduate suffers from lower status.
8. Evidence from this study appears to support the view that articulation between the two institutional types is smoothest in a unitary higher education system with a common supervising authority and with the university at the top of the educational ladder. However, it is doubtful if non-university institutions, particularly the polytechnics, would

accept a subordinate status to the universities, after all these years as autonomous higher education institutions.

9. Formal articulation channels must be created and actual articulation encouraged within which emphasis on differentiation and diversity should be retained.
10. Collaboration between universities and non-university institutions must be asked for and rewarded.
11. Linkages between higher education and industry should be strengthened to improve quality and relevance.
12. The private higher education sector should be encouraged to provide complementary systemic institutional and programmatic differentiation. However, its quality and relevance must be assured through appropriate regulation.
13. Debate on the role of higher education in a developmental context should be encouraged. Towards this end, more detailed research on the issues raised should be mounted as a matter of urgency. In particular, programme differentiation should be mapped in greater detail. In addition, research on articulation should be given even more attention, given that we know less about articulation than we know about differentiation.

In conclusion, it must be recognised that universities and non-university institutions share the same ultimate goal of contributing to national development, either by advancing knowledge and promoting scholarship, contributing to a knowledge society as it were, or by directly supporting industrial and economic growth through the application of existing knowledge. How effectively these tasks are divided up between the two institution-types should be a parameter that defines the overall efficiency of the higher education system. This is why issues of differentiation and articulation must engage the serious attention of governments and policy makers.

Part I:
Comparative Analysis and Conclusions

Chapter One

Higher Education Differentiation and Articulation in Context

Background

At the beginning of the 21st century, higher education in Sub-Saharan Africa is attracting considerable attention following many years of relegation to the background. One reason for this heightened interest is the realisation that without adequate provision of higher education, African countries are unlikely to become meaningful players in the generation of knowledge, the key driver of today's global economy. An important manifestation of this growing interest in higher education is the expanding body of literature on the subject (see Annotated Bibliography in this study).[1] Much of this literature covers fairly well understood issues, but some engages barely explored topics that are fairly technical yet urgent from the standpoint of national policy. This study belongs to the latter category. It is a study of differentiation and articulation within the higher education systems of selected Sub-Saharan African countries. As such, it does not deal directly with longstanding issues of higher education access, equity, quality and relevance per se. Rather, it invites the reader to think about these issues in the technical context of differentiation and articulation within national higher education systems.

This study was commissioned by the Working Group on Higher Education (WGHE) of the Association for the Development of Education in Africa (ADEA). It responds to a 1999 evaluation of the WGHE, which recommended an expansion of its focus on higher education to include other tertiary institutions in addition to universities.

One outcome of the 1999 evaluation was that two non-university tertiary representatives were included in the WGHE's new Steering Committee. In addition, the WGHE has moved to include non-university institutions, specifically Polytechnics and Teacher Training Colleges, in the activities eligible for its funding.

The study strives to sketch an initial map of the extent and nature of institutional and programme differentiation within African systems of higher education and, in doing so, to track the patterns of articulation that have emerged – or been consciously put in place – between the different institutional types. Its purpose is not only to inform the work of the WGHE, but to improve general understanding of this under-researched but strategically important aspect of African higher education.

To this end, three regional experts in the field were commissioned to conduct a study in 12 countries from three regions of Sub-Saharan Africa. These were: *West Africa* – Cameroon, Ghana, Nigeria and Senegal; *East Africa* – Kenya, Rwanda, Tanzania and Uganda; and *Southern Africa* – Malawi, Mozambique, South Africa and Zambia. The research team comprised Prof. George Subotzky, (project co-ordinator and author of the Southern African regional report); Prof. Njuguna Ng'ethe (East Africa) and Dr. George Afeti (West Africa). Three regional reports were produced as well as a review of selected international literature and an annotated bibliography. This report is a synthesis of the three regional reports.

[1] See in particular the new publications on African universities under the sponsorship of the Partnership For Higher Education in Africa.

Objectives of the Study

The specific aim of this study is to investigate the extent, range and patterns of institutional and programme differentiation, as well as the articulation among them, by analyzing non-university institutions in selected African countries across the main geographic and linguistic regions of the continent.

A larger goal of the study is to enable the WGHE to better understand the roles of, and the relations between, university and non-university institutions in higher education systems of Africa and, to some extent, relations among universities as well. The study seeks to inform and support the WGHE's stated intention to engage more with the non-university component of the higher education sector. By helping to fill the knowledge gap in this area, the findings will also be of wider interest to policy-makers, institutional leaders, higher education researchers, development agencies and other stakeholders. In turn, this will hopefully contribute to achieving greater equity, access and mobility within African higher education, and to enhancing the contribution of higher education to development in the region.

To this end, the following activities were undertaken:

1. To conduct a **review of selected international literature** on the topic, with a view to identifying and comparing key international trends in differentiation and articulation, and to identify lessons which may be relevant for the African context;

2. To identify and compare the **extent and range of institutional and programme differentiation** in selected African countries and, as far as possible on the basis of this, to develop a typology of institutional differentiation. This process comprises:

   a) Different interpretations of the specific roles and identities of the different higher education institutional types, the boundaries between them, and the interface among them;

   b) The characteristics by which these types are categorised and identified; and

   c) The regulation and legal status of these different institutional types, including the extent to which these are standardised, centrally regulated or lightly steered by ministries, statutory bodies and professional associations, with regard to registration, accreditation, assessment, certification, curricula, appointments, accountability, etc.

3. To identify and compare the **extent, nature and patterns of interaction and articulation** among the institutional types with particular regard to credit transfer and mobility among *and* between public and private non-universities and between them and public and private universities, as shaped by current institutional practices, national level policy and legal frameworks.

4. To identify innovative approaches and **issues for policy consideration** arising out of the findings.

How the Study Was Conducted

While the broad subject of this research is differentiation and articulation within national higher education systems of Sub-Saharan Africa, the study focuses primarily on non-university higher education institutions, mainly polytechnics and *technikons*, and their relations with universities. Examining the full range of tertiary institutions, including tertiary level colleges and institutes, regrettably lies beyond the scope defined for the present study. The unit of analysis is the higher education systems in a dozen selected African countries. It does not, therefore, focus on individual institutions, except when these are pertinent to the definitions of the higher education system. A summary of the research methodology is provided in Annex 1.

Given the limited scale and funding of the project, four countries within each of the three Sub-Saharan regions were examined. These are:

West Africa:	Cameroon, Ghana, Nigeria, and Senegal
East Africa:	Kenya, Rwanda, Tanzania, and Uganda
Southern Africa:	Malawi, Mozambique, South Africa, and Zambia.

The Ideas and Issues

Differentiation, Diversity and Articulation

Huisman (1996) provides what he calls a 'tenable conceptualisation' of differentiation and diversity as these concepts relate to higher education. In his view, differentiation alludes to the increase in the number of similar but different institutions within the same higher education system. These different institutions may have different functions and could be structured differently. Diversity refers to the variety of types of institutions emerging within a higher education system. When the institution is unique, it increases diversity. If, however, it duplicates provision and services then it does not add variety, and hence does not contribute to diversity. From this conceptualisation it is clear that a process of differentiation does not necessarily lead to an increase of diversity. Huisman (1996) further distinguishes between *external* diversity – which is a classification of different types of institutions – and *internal* diversity – which is a classification of the different types of programmes and disciplines within the institutions.

It is therefore important to note that diversity relates to both institutions and programmes. Despite this important definitional distinction between differentiation and diversity, the term 'differentiation' is generally used in the literature to signal diversity. In this respect, differentiation can be contrasted with the tendency towards *isomorphism*, which is the imitative and aspirational behaviour which occurs when institutions adopt similar features (notably those of the research university) in order to achieve strategic advantage, higher status and better quality. This is most closely associated with 'academic drift' among non-university polytechnic-type institutions, i.e., the process in which they gradually take on the trappings of universities.

File, Goedegebuure and Meek (2000) discuss the complex definitional issues related to differentiation and diversity. On the one hand, studies of higher education diversity conclude an inevitable movement toward diversity based on, among others, evolutionary theory of

development and population ecology (Hannan and Freeman, 1989). However, other studies (Pelikan, 1992; Scott, 1998; Enders and Fulton, 2002; Hayes and Wynyard; 2002) highlight the power and influence of market forces that accommodate two possible institutional responses to increased market competition: institutions can diversify in an attempt to capture a specific market niche, or they can imitate the activities of their successful competitors (File, et al, 2000, 13). The latter process, that of imitating competitors, is also called *institutional isomorphism* (Van Vught, 1996). This occurs when institutions, in order to survive, adopt the characteristics and practices of other organisations operating in the same environment. Drawing on organisational development literature, File et al, (2000) further distinguish between two types of institutional isomorphism: (1) *mimetic isomorphism* that results from insecurity caused by external environmental factors forcing the institution to mimic other more successful competitors; and (2) *normative isomorphism* that develops through heightened professionalism, where professionalism leads to homogeneity and similar practices based on shared standards.

Differentiation and diversity in higher education are treated in all their complexities by various scholars of higher education. Some, like Rhodes (1999), argue that institutions should take on certain characteristics within a differentiated higher education system so that they can appropriately serve and address the challenges facing higher education. These attributes are:

- Institutional autonomy, lively faculty independence and vigorous academic freedom, but strong, impartial, public governance and decisive, engaged presidential leadership.
- Increasingly privately supported, but increasingly publicly accountable and socially committed.
- Campus-rooted, but internationally oriented.
- Academically independent, but constructively partnered.
- Knowledge-based, but students-centred; research-driven, and learning-focussed.
- Technologically sophisticated, but community dependent.
- Quality-obsessed, but procedurally efficient.
- Professionally attuned, but humanely informed. (Rhodes, 1999:167)

Morphew (2002) charges that academic drift is an indicator of a higher education system's relative inefficiency. He maintains that diversity in the higher education systems is essential to meet the changing needs of their client populations. As the needs of regions and students evolve, diverse institutions and systems are required in order to provide comprehensive education at a high standard for increasingly different types of students. Academic drift, because it reduces the diversity of institutional types within a higher education system, impacts negatively upon the programmatic diversity of a system (Morphew, 2002: 58).

The World Bank (1997), in dealing with development issues in Africa, also promotes a differentiated higher education system as a means of addressing diverse needs and for purposes of sustainable development. The case for greater diversification of tertiary institutions is argued on both educational and financial grounds. According to the World Bank, traditional university programmes do not meet the educational needs and circumstances of many aspiring students, for whom other kinds of courses are more suitable. Examples include occupations requiring a high degree of specific skill; people with practical abilities but little theoretical inclination; late-starters, second-chancers or adult learners; working students; disabled students; and parents with childcare responsibilities. Some of these diversified approaches may also be more cost-effective. For example, undergraduate, short-cycle, or community colleges are often less expensive than traditional research universities. The World Bank believes that a diversified tertiary system

provides options for a broader range of students and allows them to make choices based on needs, quality and costs. Sustainability can also be developed when the tertiary system is founded on some degree of cost-sharing, and when student mobility among the different programmes is assured. Such an approach maximizes enrolments per unit of public expenditure (World Bank 1997: 8). In arguing thus, the distinction is drawn between *horizontal* differentiation (that is between institutional types) and *vertical* differentiation (that is, activities within institutions).

> While horizontal differentiation is driven by increased demand for higher education, vertical differentiation is a reaction to demand for a greater diversity of graduates. Today's developing economy needs not only civil servants, but also a whole host of other professionals such as engineers, pharmacists, and computer scientists. Higher education institutions are adapting and new ones are emerging to provide training and credentials in new areas. Provincial and regional universities often produce the majority of a county's graduates and tend to lie at the heart of the system's expansion. Some institutions offer two-year tertiary level degrees, much like community colleges in many developing countries. Freestanding professional schools provide training in fields such as law, medicine, business, and teaching (World Bank, 2000: 32).

The World Bank's task force on higher education further recommends a stratified system that marries the goals of excellence and mass education, allowing both to be achieved within a single system and using limited resources. A stratified system comprises one tier that is oriented toward research and selectivity and another that imparts a more general tertiary level education to large numbers of students (World Bank, 2000: 50).

In contrast to its ample discussion of differentiation, the literature is very thin on how 'student mobility' and institutional articulation can be assured in a differentiated and diverse higher education system. Articulation relates to the horizontal and vertical linkages between institutions, programmes and levels in a sector (Harris, 1996). Cohen and Brawer (1989) also define articulation as the movement of students and their academic credits within and between institutions. Harris (1996) identifies a number of benefits that can be gained through high articulation. These are:

a) For Students:

- Improved access and freedom of movement;
- Lower rates of drop-out or failure without credit;
- Increased programme choice;
- The possibility of non-traditional learning experiences being credited towards a degree;
- Opportunities to change concentrations or institutions mid-stream, or to delay final choices whilst still carrying forward relevant credits;
- Less wastage of time, endeavour and money;
- The possibility of moving between institutions in accordance with aspirations;
- Opportunities to pursue lifelong learning through the flexible accumulation of credits over a long or short time period.

b) For Institutions:

- Proving an effective means of facilitating equity under conditions of inter-institutional and intra-institutional differentiation;
- The possibility of greater inter-disciplinary programme linkage across institutions;
- Fewer repeaters and dropouts;

- Less curriculum duplication/overlap
- Increased academic collaboration;
- Increased pass rates;
- And improved internal institutional efficiency along with the possibility of increasing student numbers. (Harris, 1996: 6)

Harris warns, however, that articulation should not be seen as the solution to all problems in higher education. An upward 'prestige orientation' can be produced by an overemphasis on student mobility within a higher education system. This can lead to a loss of status and integrity at the lower levels of provision. The quality of the provision can also suffer because of fragmentation, time needed to adjust to different environments, and the cost in terms of the heavy reliance on administrative systems. Another possible disadvantage of articulation is the pressure towards uniformity in diverse curricula and institutional offerings. In this sense, articulation can be seen to be a counterpoint to the principle of differentiation. Thus, differentiation and articulation co-exist in a tension-filled relationship.

International Patterns Regarding University and Non-University Institutions

The term 'binary' emerged in the United Kingdom during the 1970s to indicate that a higher education system is divided into two sub-sectors comprising universities and non-university polytechnic-type institutions. The UK higher education system was widely held up as a model for a binary system (Huisman and Kaiser, 2001). Prior to this, higher education in the UK was provided almost entirely by universities (Barnett, 1990). The creation of the binary system of higher education saw the establishment and proliferation of numerous non-university institutions, principally polytechnics, but also a number of other institutes and colleges of higher education. The binary system formed the basis of planning in UK higher education from 1965 until 1991, under governments of both of the main political parties. The following reasons underpinned the choice of this dual system:

1. The increasing need for vocational, professional, and industrial oriented courses could not be met by universities;
2. A system based on a ladder concept would lead to demoralization in the public sector;
3. It was desirable that part of higher education remain under social control and responsive to society's needs; and
4. Britain could not stand up to foreign competition by downgrading the non-university professional and technical sector. (Pratt, 2002:8)

Neave (2000) believes that the move towards a differentiated system in the UK was market related. Nonetheless, institutions of higher education acting on their own initiative did not determine the size and shape of this system. Instead, government managed the process. According to Neave (2000), government involvement resulted in a policy of deflection where the traditional function of premier universities was preserved and non-university institutions were established as auxiliaries to meet the expanding demand for professional skills within the private sector. If we retain this interpretation, then clearly institutional segmentation had the un-avowed purpose of channelling mass demand away from the historically elite sector and forcing the non-university institutions to take on the burden of mass higher education (Neave, 2000:8). This sentiment is echoed by Teather (1999:19), who states that:

> Binary policies were adopted in Australia and Britain at a time of considerable expansion of demand for higher education. By designating a distinct group of non-university institutions as providing genuinely 'higher' education, the governments of the day were able to channel a significant proportion of the expansion into these institutions. This had the effect of permitting the traditional universities to retain their former elite characteristics to a greater extent than would otherwise have been possible.

Similar demands for increased access to higher education, stemming in large part from massification of the secondary education system, generated the need for post-secondary education that provided a wide range of options that led directly to employment. In the 1960s and 70s, more vocationally oriented tracks appeared in the higher education systems of various developed countries. In addition to the UK polytechnics, these included the university institutes of technology (IUT) in France, the the *Fachhochschulen* in Germany, the general and vocational education colleges (CEGEPs) in Canada, and the community colleges in the United States (Mazeran 2007: 22).

Saint (1992) considers a system of differentiation to be an appropriate response to dealing with an increased demand for access to higher education without prompting proportional growth in public sector budgets for education. The establishment of lower cost alternative institutions differentiated in terms of missions, function and modes of delivery would be, according to him, the most efficient approach. A broader institutional diversification strategy would include the following types: traditional colleges and universities, community colleges, polytechnics or technical institutes, adult or continuing education programs, productive sector training programmes, and distance learning programs. The UK polytechnic experiment was based on a conviction that when higher education systems are more differentiated, they can accommodate a larger and more diverse student body in cost-effective ways (Saint, 1992).

The emergence of a binary system does not imply that the distinctions will or can be maintained forever. Analyses have pointed out that governmental policies and other environmental influences, as well as organisational strategies and behaviour, have an impact on the relationships between the different sectors (binary or otherwise) of higher education systems (Huisman, and Kaiser, 2001). Before looking at subsequent changes in the binary system, let us consider and examine some other international systems.

The Australian binary system was the direct consequence of a 1965 report of the committee of inquiry into the future of tertiary education (the 'Martin Report'). This report recommended a division in the higher education system into a University sub-sector and a Colleges of Advanced Education (CAEs) sub-sector. The latter new sector was created by bringing together a disparate group of largely single purpose institutions, including teachers' colleges, under the umbrella title of CAEs. Two separate funding systems were introduced for each sub-sector. They were administered by two separate commissions supported by two distinct sets of legislation (Gamage, 1993).

In the United States, systematic diversity has always been regarded as a guarantee of excellence and the precondition for higher education to respond flexibly to the needs of society (Huisman and Kaiser, 2001; Rothblatt, 2000). The state of California is probably the best known and perhaps the most effective example of state-wide system planning in the public higher education sector. In general, U.S. higher education exhibits differentiation of public higher education within all states (Altbach, 1999). The American academic system is a complex set of institutions that serve many different needs. The system is a hierarchy, with the research-oriented universities having the highest prestige and most influence. But considerable variety also exists within the system. With more than 13 million students in post-secondary education and more

than 3,000 colleges and universities, higher education diversity in the USA is inevitable. The research universities – institutions like Harvard, Berkley, or Wisconsin – occupy the pinnacle of the system. These are the "multiversities" that Clerk Kerr discussed in his classic review of contemporary higher education. The top one hundred American universities dominate research funding from both government and private foundations. They produce a large part of the nation's research output. This hierarchy, according to Huisman and Kasier (2001), is necessary because a standardised system cannot respond to the educational needs of both the elite and the masses. In order to absorb a more heterogeneous clientele, mass systems must be more differentiated than elite ones.

A system of elite higher education without the balancing force of mass higher education would not be politically or socially viable, and a system of mass higher education without the academic models and values of elite institutions would be unsound educationally and politically (Huisman and Kaiser, 2001:113). A wide variation in admissions and degree standards has emerged as a result of differentiation by function in the United States higher education system. Its purpose is to provide different educational experiences and life chances for different populations. But it has also produced a ranking system or pecking order of institutions contending in the marketplace for preferred brand name recognition.

Ogawa (2002) outlines the Japanese version of differentiation that involves the separation of research and teaching. The universities regard undergraduate and postgraduate schools as pure teaching organizations. Separate research organisations have been established to which faculty members belong. While research organizations tend toward fraternization in the nature of their inquiry, teaching organizations offer appropriate organized knowledge (curricula). In a traditional system, a research organization had to be changed at the same time a teaching organization was changed because both were unified. This was at times problematic because new research activities were not always relevant to the set teaching and training curriculum and would therefore be thwarted. To avoid this conflict, teaching and research functions were separated (Ogawa, 2002: 96). Instead of 'scattered independent organizations', Japanese higher education has been transformed into loosely coupled systems.

The era of the European Union has ushered in a trend for greater synergy and standardisation in higher education across Europe. Several governments have indicated that structural changes in higher education systems have been inspired by the idea of not wanting their systems to deviate too much from European trends.

In the Dutch higher education system, the higher vocational education stream and the university route are two distinct pathways. At the secondary level, the HAVO/MBO route prepares students for training at *hogenscholen* and the *VWO* prepares students for university. A similar pattern can be found in the German higher education system where the *Fachhochschulereife* allows students to be admitted to a *Fachhcochschule* but not a university. A *Hochschulreife* permits students to go to either a *Fachhochschule* or a university. Admission requirements for the different higher education sectors in Austria, Flanders and Sweden are all the same. Denmark, France and the United Kingdom have additional requirements for entry into universities, namely, the *concours* in France and A-levels in the United Kingdom (Huisman and Kaiser, 2001). Only the universities offer doctoral degrees in the 'binary' examples listed above – Sweden and the UK excluded – but candidates with masters' degrees from other institutions are allowed to register at the university for further study.

Shifts Within and From Binary Systems

Scott (1998) identifies the main change in higher education as the 'grand secular shift from elite to mass higher education.' He lists the following dichotomous attributes of the two systems. The elite system is described as being exclusive and steeped in tradition, offering uniform environments and uniform standards. On the other hand, the mass higher education system is perceived as less selective, more inclusive, more diverse (different types of institutions), and offering various processes of education.

Ross (2003) suggests that the Robbins Committee in the UK underestimated the growth of public interest in higher education. The response to the establishment of the polytechnics was strong and numbers increased much faster than expected, particularly for female students. This produced a rapid expansion of the polytechnic sector and a change in its mission and orientation. The polytechnics increasingly embarked on programmes similar to those of the universities, and ultimately the student populations and even the curricula were not very distinctive between the university sector and the polytechnic sector.

The White Paper, *Higher Education of 1991: A New Framework* ended the binary policy in the UK. All polytechnics and a number of other colleges were granted university status with the power to award their own degrees. Smith and Webster (1998:2) echo the above reasons for the demise of the binary system in the UK. They claim that the expansion of higher education provision was accompanied by a squeezing of resources and this manifested itself in growing student poverty, declining academic salaries, falling academic social status, and in the increasingly shabby fabric of universities themselves. On the other hand, Neave (2000) blames the interventionist state in its drive for mass education. The phenomenon of 'academic drift' set in very soon after implementation of the binary system. The polytechnics, supposedly differentiated from the universities, in fact sought to emulate them – even to the point of launching fine arts courses. Meanwhile the universities also experienced 'vocational drift,' offering vocational courses and short cycle options in competition with the polytechnics (Archer et al. 2003). Pratt (2000:3) makes the following point:

> Although, in the end, the polytechnics succumbed to the temptation to acquire conventional university titles in 1992, by the time they did so, the universities also were significantly different from the institutions they were in 1965 when the binary policy was inaugurated. They too had begun to recognise the importance of a vocational emphasis, to accept students with a wider range of entry qualifications, to offer greater choice through modular courses and a greater concern for the student's learning. It became possible to talk of 'vocational drift' within the universities as much as 'academic drift' within the polytechnics, and a blurring of boundaries occurred between the two sectors.

Similarly in Australia and Hong Kong, the binary lines in higher education were repositioned. Polytechnics adopted the university title and the number of universities doubled (Teather, 1999). The academic programmes offered by CAEs were strengthened and they introduced postgraduate programmes, including doctoral programmes that involved research. The lines between the sectors became indistinct. The only apparent difference was that universities received funds for research whereas CAEs did not. Nevertheless, the CAEs in Australia trumpeted their growing research capacity as part of their demand to be recognised has universities (Gamage, 1993).

Aside from the interventionist strategies employed by governments, Meek (2000) asserts that the reliance on market forces to achieve higher education policy objectives, including that of

diversity, has backfired. According to him, countries like Australia, New Zealand and the United Kingdom have increasingly incorporated market competition into higher education. Instead of diversifying into new areas in an attempt to capture a specific market niche, institutions imitated the activities of their successful competitors. Two crucial factors influence the direction of higher education diversity: (1) the way in which governments structure the policy environment, and (2) the relative power of academic norms and values within higher education institutions (Meek, 2000:36). Meek further suggests that various factors have encouraged, if not forced, governments towards a market orientation for higher education (2000:36). These include:

- The substantial costs associated with mass higher education, which have increased governmental concern to realise more value per dollar committed in this sector.
- A clear expectation by government that the higher education sector be more closely tied to the national economy – not only in terms of meeting national labour market needs, but also through the commercialisation of its research and teaching activities.
- As a larger proportion of the population expresses interest in acquiring higher education, higher education inevitably becomes more of a political issue.
- Due to an aging population, the burden of social entitlements on the national treasury is rising dramatically, generating pressures to cut government expenditure and demands for greater efficiencies from public sector institutions.
- In all industrialised countries, traditional manufacturing industries are being replaced by the so-called knowledge processing sector, of which higher education is seen to be an integral part.

These factors are, according to Meek, part of a much larger process of economic globalisation that has produced a fundamental redefinition of the social value of public service in general and of universities and education in particular. This has heightened political interest in the sector. The university is now asked to be "accountable" to those who pay for it, whether these are large governments, corporations, individual taxpayers or even students. Jarvis (2001) believes that globalisation is indeed a primary factor determining the current shape and focus of higher education. For him, universities have ceased to be ivory towers, protected from the pressures of the real world. He believes that universities have tried to respond to some of the social pressures of globalisation, but with limited success. Their reactions appear to be almost unreflective, since they do not seem to know what the university should be any longer. That is, they respond automatically and uncritically to the pressures of social change (Jarvis, 2001).

Ball (1989) argues that the role of research becomes problematic in the present context of mass higher education. He believes that it is possible to arrange dual funding, that is for research and teaching, in an elite system of higher education. But this is neither possible nor sensible in a mass-based system of higher education. Ball (1989:4) believes that no logic resides in the assumption that the scale of fundamental research must be determined by the scale of higher education.

The current challenges facing higher education institutions are identified by Weber (1999:4-11) as:

- The changing environment: globalisation and the influence of information technology;
- Shifting missions: responsive and responsible universities; the changing shape of research universities; emergence of competitors to traditional universities;

- Growing student diversity and the need to adapt teaching in response;
- The academic profession: the changing role of teachers; tenure; developing a new generation of staff.
- Higher education finance: broadening revenue; reducing costs.

Linked to the changing environment for local higher education systems is a growing and diversifying public demand for higher education in countries with an adequate national higher education infrastructure. Established universities in western countries, motivated by decreasing (national) funding for higher education, are searching for new cross-border markets to tap into (Van Vught, F. et al. 2002). Educational markets have been established through trade agreements and initiatives of the World Trade Organisation (WTO), in particular the General Agreement on Trade in Services (GATS). In the GATS negotiations, agreement has been reached to classify primary and secondary education as public consumption goods, with predominantly public rather than individual benefits. However, with regard to higher education, the balance of public and individual benefits is often seen by educational economists as leaning more towards the individual side (i.e., private returns area greater than social returns). Thus, GATS views higher education as a tradable service that should not be protected by tariffs. This expansion of international trade in higher education is also being facilitated by advances in information and communication technologies (ICTs), which are increasingly used to reach out to distant students who are interested in earning a foreign degree while remaining in their own country.

African Experience

In the context of these international trends, most African countries offer, as they have done for decades, a differentiated post-secondary education consisting of a mix of training colleges, technical/vocational institutes, polytechnic-type institutions and universities. At the top of this pyramid are the universities and polytechnics (Sawyerr, 2002). The diverse configurations of the higher education sector in Africa reflect various historical influences along with the contextual—as well as global pressures—brought to bear on this sector (see Box 1). The pressure for mass access to higher education, not only in Africa but across the globe, has swayed governments to introduce policies favouring institutional and programme differentiation. In Africa, new types of higher education institutions and differentiated programmes have emerged in spite of an increasingly constrained financial environment.

Box 1. **Tertiary System Differentiation in Cameroon**

The higher education sector in Cameroon is differentiated along linguistic lines as well as the nature of programmes resulting from the country's two linguistic cum higher education traditions. The higher education system in Cameroon strongly resembles that of France and shares a lot in common with those of Francophone African countries like Senegal. However, British influence is strong in a couple of the institutions, notably the University of Buea, which is a predominantly English-speaking university. Three types of tertiary institutions make up the higher education sector. These are the universities, specialised research and career-focused training institutes and schools, and advanced professional schools or *grandes ecoles*. The government decree of 1993 regarding the organisation of the higher education system in Cameroon allows the universities to develop, within their mission and mandate, specialised institutes or centres for scientific and technological studies, research, professional training or further training. Essentially, the higher education system is divided into two groups: the larger university sector and the smaller, highly selective, non-university sector. However, the overall system is richer than a simple binary system.

The history of higher education in Africa, from its pre-colonial and colonial roots to the post-independence phase, provides some answers as to the current configurations of institutions on the continent. The pre-colonial higher education institution in Alexandria, Egypt (Lulat, 2003), together with a range of Islamic and Arabic educational institutions, were precursors to Africa's later Anglophone, Francophone and Lusophone manifestations of the education systems established by colonial administrations. At first, formal education in the European colonies of Africa was left to missionaries. But as more and more Europeans settled in the colonies, interest in formal education increased. But it was not necessarily extended to the local population, based on the general view that Africans were intellectually inferior and therefore uneducable (Lulat, 2003). This view was gradually modified by events – the industrial revolution, the expansion of colonist economies, and the two World Wars – to the point where vocational and industrial training was deemed necessary for Africans.

Subsequently, the British established in Africa a number of higher education institutions, known as the "Asquith Colleges," through their Inter-University Council for Higher Education. Graduates of the Asquith Colleges received their degrees from the University of London on the basis of the affiliation of the colleges to that university (Lulat, 2003:19). Stronger local demand for higher education was also linked to a rising tide of nationalism in West Africa and an emergence of Pan-African movements (Ajayi, Goma and Johnson, 1996).

Lulat (2003) cites Ashby (1966) who charges that African elites were to blame for the lack of development of higher education in French colonial Africa. African elites in the Francophone colonies considered local institutions to be inferior to those in France and placed greater currency in the opportunity to study in France. The cost of educating Africans at French universities soon became prohibitive. In preparation for eventual political autonomy, the French created overseas branches of French universities in the African colonies. These took the form of institutes of higher education that served as forerunners of national universities (Lulat, 2003:21). These institutes maintained close academic and administrative ties with French universities, even after independence when they became national universities. The primary reason for developing local institutions of higher learning in the post independence era was to produce administrative and technical staff for the civil services, as well as teachers for secondary schools and teacher training colleges (Ajayi, Goma and Johnson, 1996). This intention was flavoured with a desire to maintain equivalence with European university standards, and each colonial power therefore imposed its own pattern on the institutions it sponsored. Overseas colonial Colleges thus became an avenue of opportunities for younger staff particularly from Britain, France and Belgium, to spend some time in Africa and become experts in African Studies, Tropical Medicine, Agriculture and Technology (Ajayi, Goma and Johnson, 1996:69). The colonial university Colleges were criticised for their 'elitist' orientation, their narrow curricula, and academic irrelevance, all of which contributed to the view that they were 'ivory towers.'

The transition to full university status was prompted by the nationalism of African states which attempted to assert their independence from their respective colonial powers. Typically, in most post-colonial African countries, single national universities were established as part of the apparatus of newly independent statehood. The development of the 'decolonised' higher education system in South Africa was introduced with the University Act of 1916 enacted by the Union Government to establish the University of South Africa, together with the Universities of Cape Town and Stellenbosch (Ajayi, Goma and Johnson, 1996). These institutions were intended for the white settler community. All subsequent higher education institutions, including *technikons* and colleges, were established along racial lines as separate sub-systems to serve the

white, coloured and black racial groups in the country. This structure endured until the demise of apartheid in 1994. The unusually large system of 36 institutions (21 universities and 15 polytechnics) which eventually resulted was the direct outcome of linguistic/cultural rivalries between British and Afrikaner nationalism that were reinforced by the separate development policies of formal apartheid, in which separate (but far from equal) institutions were provided for each major racial and ethnic group (Cooper and Subotzky, 2001).

As a result of these circumstances, the extent and type of institutional differentiation has varied widely across different African regions and countries. Saint (1992) suggests that system differentiation in Africa is generally at an intermediate stage. Polytechnics are frequently found and teachers colleges are common, but tend to be accorded a clearly inferior status by students and governments (i.e., they are poorly articulated). Even where higher education systems are differentiated in terms of institutional missions, they are rarely differentiated in their financing. African institutions and systems of higher education receive 85 percent or more of their funding from government (Saint: 1992: 107-108). The tendency to regard as inferior those institutions which are mainly involved in teacher education, technological or vocational specializations must be eschewed, according to Brown Sherman (1993) because Africa is short of skilled professionals in education, the sciences and technology.

> There can be no real consensus for higher education reform without a focus on non-university institutions. The teachers and the facilities for training such persons should be wisely used. Consultations are needed between the universities and other higher education institutions in order to weigh the strengths of these institutions and to consider such possibilities as transfer of credits, sharing of facilities, and even joint programs, where feasible. (Brown Sherman, 1993: 28)

The ability of African nations to achieve a coherent mix of research and technical/vocational systems of higher education is doubted by Altbach (1998), who alleges that third world nations are basically consumers of knowledge and dependent upon industrialised nations for advancement in scientific knowledge. While he agrees that it is difficult to generalise, he maintains that third world universities are – without exception – 'peripheral' institutions in an international context and that they often lack an orientation toward scholarly production. Brown Sherman (1993:28) agrees with this point, saying:

> Africa has a marginal place in the global economy. Africa's universities are part of an international academic system and are 'peripheral' to that system. One consequence is the considerable intellectual dominance, which impinges on the continent. In line with this is the large amount of research related to the continent done by academics and universities foreign to the continent.

Framework of Analysis

This literature review, Africa's history and our own field experience suggested the following framework of analysis. First, with regard to *differentiation*, twelve dimensions of differentiation were identified as the most fruitful to investigate. Universities and polytechnics were then compared on these dimensions in order to assess whether observable differences between the two types of institutions could be found. In addition, where fruitful, an attempt was made to apply the dimensions among similar institutional types. These dimensions are listed in Table 1.

With regard to *articulation*, five dimensions were also selected as the most fruitful to look into and the two types of institutions were compared on each of these elements. Again, where possible, these dimensions were analyzed within the same category of institutional types, or sub-

types, in order to complete the analytical picture. The dimensions of articulation are presented in Table 2.

A key observation on Tables 1 and 2 is that in both differentiation and articulation, the primary unit of analysis is the type of institution, not the individual institutions. But where the situation on the ground warrants it, an attempt is made to apply the identified dimensions to institutional sub-types; for example, between public and private universities. In some cases, a further attempt is made to assess "similar" institution types; for example, among public universities and among public polytechnics. Do any subtle differences exist between them? Do they articulate with each other? The extent to which the latter occurs varies from region to region and from country to country, depending on data availability and the characteristics of the higher education system in each country. Also, in each of the countries/regions, it was necessary to map the higher education system as a pre-condition for analysing differentiation and articulation. The mapping exercise allows identification of the system's key features, especially whether the system is binary or some other type.

Table 1. **Dimensions of Differentiation among Types of Higher Education Institutions**

Dimension	Features
Institutional mission and mandate	What are the institution's mission, mandates and outputs, especially with regard to nature of knowledge?
Curricular/teaching	Content, teaching emphasis and pedagogical approach
Qualifications	Type of qualifications obtained and purpose
Admissions	What are the selection criteria utilised?
Fields of study	Diversified or similar?
Research	Level and type of research conducted; role of research (e.g., learning, income generation)
Academic Staff Qualifications	Required academic qualifications; any non-academic qualifications?
Orientation	Local versus international; applied versus scientific; knowledge versus competencies
Governance/Regulatory Framework	Levels of autonomy; degrees of accountability; governance structures such as Councils/Boards, Senate, and Faculty Boards; legal instruments such as Individual Acts of Parliament /Charters; General Universities Act.
Financing	Sources of financing. How diversified? Degree of autonomy in financial management.
Quality Control	External or internal; mechanisms employed
Institutional characteristics	Size of enrolments; student characteristics; campus organization; education delivery system employed.

Table 2. **Dimensions of Articulation among Types of Higher Education Institutions**

Dimension	Features
Admissions criteria	Same or different criteria; what types of criteria? Jointly managed or individual admissions processes?
Structure and Recognition of Qualifications	Is academic achievement recognized across institutions? Are there similar requirements for similar types of academic awards? Do they recognize each other's qualifications for employment purposes?
Tranferability of Credits	Can courses completed at one institution be counted towards the graduation requirements of another institution? Is there a system in place to facilitate the transfer of academic 'credits'?
Academic Staff Mobility	Do academic staff circulate among different types of institutions? With what frequency? In which directions? Are there administrative structures in place to facilitate this mobility?
Collaboration and Partnerships	What is the extent of institutional collaboration in joint research, joint teaching, cross-referencing of courses, sharing of facilities, common services?

Educational policies and institutional supervisory structures have implications for differentiation and articulation. State oversight structures for non-university institutions vary from country to country. In Ghana, the National Council for Tertiary Education (NCTE) is the sole supervisory agency for both the polytechnics and universities. In contrast, Nigeria maintains three separate oversight bodies for sub-sectors of the tertiary system: the National Universities Commission (NUC) for the universities, the National Board for Technical Education (NBTE) for the polytechnics, and the National Commission for Colleges of Education (NCCE) for teacher training colleges. Arguments have been advanced for and against having a single supervising body for the entire tertiary education system. Invariably, where only one body exists, institutional representation on the body is dominated by the universities. In the case of the NCTE in Ghana, for example, the ten polytechnics in the country have only a single representative, compared with one representative apiece for each of the six universities. This unequal representation has fuelled the perception that polytechnics do not receive the attention they deserve or that even if they do, they are neither fully appreciated nor promptly addressed. On the other hand, protagonists of a single supervisory structure believe that having separate bodies can only create obstacles to articulation by accentuating the perceived differences in status between university and non-university institutions. It is instructive that in Senegal and Cameroon, where a ministry of higher education exercises direct oversight responsibility over both institutional types within a unitary university framework, similar perceptions of inferiority or subordination are more subdued.

As will be seen, African countries display far more differentiation than articulation within their higher education systems. The systems studied are quite diverse, being classified as unitary, binary, trinary, semi-differentiated or fully differentiated. However, in various cases these differences exist more in theory than in fact, as instances of academic drift, vocational drift and institutional imitation are common. The polytechnic sub-systems appear relatively undifferentiated in comparison to the university sub-systems, except in the rather obvious sense that the former offer lower-level training than the latter.

For the most part, articulation seems to be in its infancy. The mobility of staff and students between university and non-university tertiary institutions suffers from a lack of cooperation and absence of dialogue between the two institutional groups. In fact, an unhealthy rivalry often characterises their relationship. Polytechnic graduates seeking "academic progression" into the university system often encounter a void of clearly defined articulation pathways to follow, the level to which they are admitted being dependent on the course they wish to pursue and the regulations and requirements of the particular university to which they are applying. Credit transfer mechanisms rarely exist between similar polytechnic and university programmes. In fact, some universities do not even recognise any prior learning or skills acquired at the polytechnic level in their admission requirements. Ghana offers an example of such disarticulation, but also shows some progress in tackling the problem (see Box 2).

Box 2. **Weak Articulation in Ghana's Tertiary Education System**

> The two main components of the tertiary education system in Ghana – the universities and the polytechnics – are poorly articulated at present. The two oldest universities in the country (the University of Ghana and the Kwame Nkrumah University of Science and Technology) do not recognise the HND awarded by the polytechnics as an entry qualification to any of their programmes of study. However, these same universities recognise their own diploma courses and qualifications for further studies at the degree level. The unfortunate impression created by this policy is that the HND qualification is irrelevant to university studies. However, this position is not shared by all the universities in the country and practices may change as cooperative exchanges develop between the universities and the polytechnics. Evidence of this tendency can be found in the fact that some of the public and private universities have started admitting HND holders into the second or third year of their four-year degree programmes, especially in the vocational and business studies areas. Among the well-known universities that currently give credit for polytechnic qualifications in their admission schemes are the University of Cape Coast (public), the University of Education at Winneba (public), the Central University College (private), and the Valley View University (private).

Interestingly, articulation and mobility between similar institution types is also rare. Students from private universities have little chance to transfer to public universities. Likewise, student mobility among public universities is frequently not well defined, particularly in Anglophone Africa. We conclude that the absence of an easily understood and mutually accepted credit transfer system is a major barrier to the articulation of many African higher education systems.

The situation regarding articulation in Francophone West Africa is different. In Senegal and Cameroon, higher education institutions that deliver sub-degree polytechnic-type qualifications are organizationally linked to the universities and are not seen as entirely separate or autonomous institutions. In fact, it is not uncommon for professors to teach courses at both the sub-degree and degree levels. For this reason, top graduates from the diploma-awarding university institutes of technology can be admitted into degree programmes at the appropriate level, subject only to passing an entrance examination.

Chapter Two

Differentiation and Articulation in Sub-Saharan Africa

Observations from the Literature

Evidence from the literature is corroborated by the findings from this study. The main conclusions from the literature are, therefore, similar to the conclusions that one would draw from this study. These are as follows:

Differentiation and articulation have become key issues within the recent development of higher education worldwide. The growing literature on this subject stresses the importance of providing varied types of institutions and programme offerings to meet the increasingly diverse needs of the changing labour market and student intake. Definitionally, the literature distinguishes between differentiation and diversity. Expansion of systems in terms of establishing more institutions does not necessarily mean differentiation, unless programme offerings are sufficiently dissimilar. A distinction can also be drawn between horizontal differentiation across institutional types and vertical differentiation within an institution, with the latter referring to diversity of programmes.

The literature suggests that differentiation has been driven mainly by market forces, and by government regulatory frameworks seeking to ensure an appropriate institutional and programme mix in order to meet national priorities. Two opposing tendencies are evident: one towards the traditional university type through academic drift and driven by aspirations for higher status, and the other towards institutional differentiation and diversity to accommodate a wider market. The latter includes vocational drift in universities in order to capture more of the lucrative short-term training market.

Patterns of differentiation within countries vary enormously. A growing literature describes the various forms of binary systems which have evolved in different countries. In the UK and Australia, the binary system was established as part of the massification of higher education, and subsequently dis-established as a result of academic drift and institutional isomorphism. Several other countries have generated different forms of binary and trinary systems. Within the proliferation of new institutional types, cross-border provision and the rise of private higher education, the boundary between university and polytechnic-type institutions has become increasingly blurred.

Articulation is far less documented than differentiation. Much of the literature addresses issues of student mobility. Articulation can be seen as somewhat contradictory to the principle of differentiation (a) in implicitly conveying a lower level of status to the lower levels of provision, and (b) in reducing diversity through the pressure for uniformity and standardisation of programme and qualifications mixes.

Post-colonial higher education in Africa has been largely conditioned by colonial rule. In many countries, national universities were established on the basis of colonial precursors. Since then, non-university polytechnic-type institutions have developed. It is clear that to meet the demands of sustainable development, a suitably diverse, differentiated and cost-effective tertiary system is

required. On balance, differentiation in Africa seems to be at an intermediate stage, with the non-university institutional types suffering from lower status.

Some elements in the literature are pessimistic about the capacity of African nations to achieve a coherent mix of high-level research-based academic education and technical training. In the view of some, African higher education institutions remain peripheral to the global higher education community. African nations clearly face a tremendous challenge to ensure that their systems of higher education are sufficiently differentiated in order to meet national priorities and the requirements for sustainable development.

Nature of Differentiation

The general finding from the study is that differentiation in higher education systems is apparent within Africa, but the nature and extent of it vary from country to country. Table 3 outlines the differentiation profile for each tertiary system studied. These differences originate in the varieties of colonial experience, political economy and immediate post-independence history. They also reflect how countries have subsequently been able to position themselves in relation to the internationalisation of higher education and to the market forces associated with globalisation. Thus, South Africa, for example, exhibits a fascinating picture of institutional differentiation quite simply because this was an integral dimension of the apartheid policy. Nigeria too displays considerable institutional differentiation, this time on account of its size, societal complexity and consequent nature of the demand for higher education. As expected, small and historically different countries, such as Rwanda and Malawi, reveal less differentiated and, therefore, less complex higher education systems. On a continuum of differentiation, South Africa and Nigeria would be at one end, while Malawi and Rwanda, and perhaps Senegal, would be at the other end. Not unexpectedly, significant variations were found between the Anglophone and Francophone countries in the forms of differentiation, again on account of the respective colonial/cultural/linguistic foundations of the systems. *This general finding is to be expected and is therefore not significant. What would have been significant is a finding that did not reveal variations in the level and extent of differentiation.*

Table 3. **Differentiation Profiles for Selected African Tertiary Systems**

Country	Buffer Body	Quality Assurance Agency	Public Univ.	Private Univ.	Public Polytechnic or Prof Inst	Private Polytechnic or Prof Inst	Public Tech. Colleges	Private Tech. Colleges
Cameroon	1	1	6	20	3	X	X	X
Ghana	1	1	7	28	10	0	n.t.	n.t.
Kenya	1	1	7	17	4	0	n.t.	n.t.
Malawi	0	0	2	2	2	1	X	X
Mozambique	1	0*	3	5	8	6	n.t.	n.t.
Nigeria	2	2	50	25	51	6	46	9
Rwanda	0	0	2	6	4	4	4	4
Senegal	0	0	2	3	15	44	X	X
South Africa	1	1	22	3	0	0	100	350
Tanzania	1	1	8	13	15	X	X	X
Uganda	1	1	4	13	1	X	67	X
Zambia	0	0	2	5	0	0	3	n.t.

* = In process of establishment.
X = in existence, but data not collected.
n.t. = not included in tertiary system.

The Prevalence of Binary Systems

Though the systems are quite varied, evidence suggests that the binary system is dominant, with universities and polytechnics as the main sub-systems (see Table 4). Most systems began with a binary structure, and Ghana, Kenya, Malawi, and Tanzania retain them today. But variations occur around the binary model, with Cameroon, Nigeria and Senegal being classified as differentiated, Uganda as trinary, and Zambia as unitary. Mozambique and Rwanda seem to be in transition towards differentiated systems.

The traditional binary boundary between universities and non-university institutions is becoming increasingly blurred. Some interesting university-non-university institutional hybrids have emerged: for example, the Kigali Institute of Science, Technology and Management (KIST) in Rwanda, the 'comprehensives' in South Africa, and the University of Malawi. This blurring is the result of two main drivers. The first relates to market forces, which create a two-way drift: 'academic' drift (the aspirations of non-universities to gain university status), and 'vocational' drift, (universities seizing market opportunities by offering vocational courses). Academic drift is evident in Ghana where polytechnics have been agitating for university status, in Nigeria where polytechnics have been offering degrees as affiliates of universities but now want and have been allowed to offer their own degrees, and in Kenya where polytechnics are in the process of being elevated to university status. Vocational drift is evident everywhere as universities attempt to make up financial shortfalls by offering high-demand, market-driven vocational programmes.

The second driver, especially in complex higher education systems such as those of South Africa and Nigeria, is a lack of policy clarity regarding the appropriate boundaries between polytechnics and universities in terms of their mission, purpose, curricula and programmes (and the knowledge underpinnings of these). This has allowed the two-way drift to proceed unencumbered by regulation. The continuation of the strict binary divide and, in particular, the narrow interpretation of polytechnic training within this, has been contested as technicist and divisive, particularly in South Africa. This tends to inhibit debate on important issues such as equity, access, mobility and the relationship between education and training in general. Though contestation around the binary divide has been more evident in South Africa, compared to the other countries in this study, it is a debate that could benefit other countries as well.

A strong driver of differentiation between universities and polytechnics is the public perception of polytechnic vis-à-vis university education. With very few exceptions, mainly Uganda and South Africa, the overall public perception is that polytechnic education is of much lower status than university education. This perception results from: (i) public misunderstanding of the orientation and philosophy of polytechnic education vis-à-vis university studies; (ii) the correct perception that entry requirements are in general less rigorous for the polytechnics, making it easier to enter a polytechnic than a university; (iii) lack of a clearly defined institutional mandate of the polytechnics; (iv) inadequate human and material resources for effective teaching and learning in polytechnics, often reflecting similar status misperceptions within the government budgeting process; (v) inadequate skills training of polytechnic students; (vi) limited well-paying job opportunities for polytechnic graduates; (vii) ill-defined articulation and credit transfer mechanisms between polytechnics and universities, and (viii) the absence of academic dialogue between university and polytechnic authorities. (We shall say more on drivers later.)

Table 4. **Classification of Tertiary Education Systems in Selected Countries**

	Cameroon	Ghana	Kenya	Malawi	Mozambique	Nigeria	Rwanda	Senegal	South Africa	Tanzania	Uganda	Zambia
Type of System Differentiation	**D**	**B**	**B**	**B**	**SD**	**D**	**SD**	**D**	**D**	**B**	**T**	**U**

B = Binary D = Differentiated SD = Semi-differentiated T = Trinary U = Unitary

Institutional vs. Programme Differentiation

As a broad exploratory survey, this study was able to document the nature and extent of institutional differentiation, but was less able to establish the nature of programmes differentiation in any detail. This is because an adequate documentation of programme differentiation would require different analytical methods. Specifically, it would need to be informed by a detailed content analysis of the programmes on offer in order to ascertain whether they are indeed different. This is especially so with regard to programmes offered in similar institutional types, such as polytechnics or universities. Table 5 presents the academic award structure for the Anglophone and Francophone tertiary systems.

Universities, for example, are increasingly branding their programmes through re-labelling. To go beyond the label in order to ascertain whether the programme content is indeed different from those of other universities requires detailed content analysis. The issue of programme differentiation has been made even more complex by the current practice of simultaneously splitting and combining programme content. Thus an MBA degree could yield several specialised degrees such as Masters in Marketing, Masters in Accounting, Masters in Finance, etc. Simultaneously, universities are increasingly combining disciplinary content to create new multidisciplinary programmes such as development studies, environmental studies and gender studies. What does this mean in the context of differentiation? It means there is a need to establish whether the simultaneous process of splitting and combining is yielding new knowledge areas. To establish this requires detailed and patient programme content analysis.

Table 5. **Structure of Tertiary Degrees Awarded in Anglophone and Francophone Tertiary Systems.**

	Anglophone	***Francophone***
Universities/*Grandes Ecoles*	Phd MA/MSc BA/BSc	*Doctorate* *Maitrise* *Licence*
Polytechnic/*Institut Universitaire de Technologie*	Higher National Diploma National Diploma Certificate	*Diplome Universitaire de Technologie* *Brevet de Technicien Supérieur*

Proliferation of Non-University Institutions

Though this study has concentrated on the relationship between universities and polytechnics, the researchers were struck by the proliferation of other non-university institutions, a recent

phenomenon in most countries.[2] This dynamic is based on widespread recognition of four fundamental rationales for differentiation: (a) to accommodate increasingly diverse student body; (b) to meet changing labour market needs and national development priorities; (c) cost effectiveness; and (d) increased access, mobility and equity. The higher education landscape in Africa is clearly no longer dominated completely by universities. Indeed it could be said that the post-secondary education which some countries regard as higher education and not simply as tertiary or further education, is now dominated by non-university players.

This is not necessarily a bad thing. Indeed it can be a positive development, given the capacity limitations of universities. However, the proliferation of these institutions poses a serious regulatory challenge. It calls for the creation of policy frameworks and quality control mechanisms to rein in such institutions and integrate them into a coherent system. The problem in doing this is that most countries do not have comprehensive human development policies to guide this process. This leaves the door open for anybody claiming to provide "human development" to set up shop within the tertiary system, purely to test the extent of demand.

An Explosion of Domestic Private Universities

A common feature in most of the countries covered in this study is the appearance and multiplication of private providers of university education. This is a significant regional trend. Since 1990 private universities have increased at a much faster rate than public universities. Although the number of public universities has expanded by 66 percent over the past fifteen years – from 113 to 188 – the number of private universities has multiplied seven-fold during the same period from 14 to 107 (Darvas 2007:17).

The rise of private provision in higher education responses to two factors. The first is the high demand for university education. A common feature in the countries covered in this study is that nearly all those who qualify to enter university would much prefer to go to university as opposed to attending another type of institution such as a polytechnic. As we have seen, this reflects the high social status accorded to university education and the resulting household pressure "to go to the university." The overall result is very high demand for university education even when market conditions (e.g., graduate unemployment) indicate that this might not be the most rational thing to do. The second factor is the inability of the public sector to meet this demand for university access. Data from all the countries covered in this study indicate that only a small fraction of those who obtain the minimum requirements to enter universities are actually admitted to the public universities. The explanations for this exclusion include: inadequate funding from the government; linking of admissions to available bed space in universities; and inadequate staffing in the universities.

Private providers have stepped in to meet some of this demand. In the context of this study, the private providers have certainly helped to expand access to higher education, but only to a limited extent because of their low enrolments. In most of the countries, private universities outnumber the public universities. This means that if, as institutions, they develop vertically by way of diversifying

[2] These field observations are neither supported nor contested by the very limited UNESCO data available on non-university tertiary enrolments in Africa. One of UNESCO's classifications of educational enrolments is for post-secondary but non-university programs (i.e., ISCED Level 5B). On this measure, comparative data are available for only 11 African countries between 2000 and 2004. They indicate that non-university tertiary enrolments increased over this period in five countries (Botswana, Burundi, Madagascar, Mauritius, Rwanda), declined in another five countries (Ghana, Kenya, Nigeria, Tanzania, Uganda), and remained essentially unchanged in Mali.

their programmes and increasing their enrolments, they will become increasingly important in both systemic and institutional differentiation. *At the moment, private universities tend to offer limited and similar programmes, thus contributing little to differentiation.* In particular, they tend not to offer science-based programmes because these are expensive to mount and student demand in these areas may be somewhat less. In some countries—including Tanzania, Kenya and Uganda in East Africa—private universities are beginning to offer science-based programmes. But here again, the programmes being offered are quite similar to those available in public universities. Thus, although the private universities have expanded access, it is debatable to what degree they have contributed to systemic programme differentiation.

On balance, private universities and other private tertiary education providers are beginning to take shape as an educational force in the region. But they are not yet a major force. *However, they are even more undifferentiated horizontally than public universities, concentrating as they do on offering the less expensive humanities, social sciences, business and ICT programmes.* As privately operated institutions, they are unaccustomed to working together except on collective responses to regulatory requirements from the government that affect their mutual self-interest. Not only do they not engage in collective discussions amongst themselves, but they also do not seem to value the thought of formally engaging the public universities to identify common ground for possible collaboration. Perhaps the potentially controlling and financially onerous tutorial relationships of public universities that are imposed by governments on private universities are to blame for this resistance.

Differentiation vs. Expansion

The proliferation of private universities illustrates an important distinction made in this study. That is, the distinction between differentiation and expansion. Not every expansion produces differentiation. This is especially so with regard to increasing the numbers of institutions. What is evident from the study is that many of the higher education systems studied have been undergoing expansion in the last decade or so, primarily as a response to increasing demands for access. This expansion has taken place in both the public and the private universities. With regard to the public universities, the considerable expansion has often occurred as a political reaction to intense public demand and not as a planned diversification of the higher education system. The result is that programmes on offer tend to be similar, and sometimes even copied from, the older and better-established universities.

The resulting institutional isomorphism has offset any increase in market demand for graduates, as the market is flooded with university products holding similar qualifications—even down to the course titles listed in their transcripts. While expansion is a legitimate policy response to the problem of access, it bears repeating that expansion does not necessarily produce differentiation, either in institutional types or in programme variety. It is necessary to underscore the distinction between the two because evidence from this study suggests that this difference is not always fully appreciated by policy makers. Even less appreciated is the point that it is not enough to have diverse institutional types; within different institutional types, conscious efforts are also required to develop programme differentiation. Evidence from this study indicates that this is not happening quickly enough. One exception is Tanzania, where a significant degree of horizontal differentiation can be observed (see Box 3.)

Box 3. **Horizontal Differentiation in Tanzania**

The tertiary education system in Tanzania, more than in most of the countries studied, shows significant

elements of horizontal differentiation. Each of the eight public universities is intended to specialise in specific aspects of development, e.g., agriculture, architecture and physical planning, distance education, teacher education, medical sciences, postgraduate programmes, technology, and wildlife management. Likewise, the thirteen private tertiary institutions reflect a certain 'division of labour' among accounting and finance, business administration, communications, health sciences, social sciences and humanities, technology, theological studies and others. In this way, the Tanzanian tertiary system has largely avoided the institutional *isomorphism* or imitation that characterizes many other systems in the region, thereby enabling expansion with differentiation.

Differentiation through Physical Decentralisation

Establishing new universities in different parts of the country is usually a political response to access and equity pressures. In some countries, it has been a deliberate response to the problem of lack of differentiation. Mbarara University was established in western Uganda in order to decentralise university education away from Makerere in the capital city. Likewise, Moi University in Kenya was also established 20 years ago in order to decentralise away from the University of Nairobi, which is located in the national capital some 250 km distant. The University for Development Studies in Ghana and the Northern Campus in Namibia are other cases of physically de-concentrating university education. Most recently, Mozambique has announced the creation of a new public university in Nampula to serve the central region of the country.

To their credit, some of these new universities have gone on to introduce distinctly new programmes and pedagogies, thus contributing to institutional and programme differentiation. For example, even though both Mbarara and Moi universities offer medical training of the type also offered in Makerere and Nairobi universities respectively, they have done so by using the innovative Problem-Based Learning (PBL) pedagogy. The same can be said of the different medical training pedagogies characterizing the more traditional University of Ghana and the newer University for Development Studies, which espouses a strong community-based orientation. But it bears emphasising that this strategy of differentiation, if carried out without adequate planning or the establishment of coordination structures, can fragment the higher education system rather than diversify it, with immense implications for quality.

Cross-Border Provision

A key feature of higher education differentiation within the countries covered in this study is cross-border provision. As a result of the financial constraints that limit the expansion of their physical and academic facilities, the higher education systems of the poorer or more populous countries of Africa are unable to accommodate the enrolment pressures exerted on them by the large numbers of school leavers from their pre-tertiary systems. Cross-border educational activities, including the importation of courses and services and the physical movement of students across borders are, therefore, assuming important dimensions in Sub-Saharan Africa. For example, many Nigerian students now attend Ghanaian universities on a full fee-paying basis. Similarly, Nigerian universities have for a long time been training students from Cameroon and other neighbouring countries. Senegalese higher education institutions receive students regularly from other francophone countries in the sub-region who consider Senegalese qualifications of comparable standard to those obtained from France, but at a lower cost. The situation is repeated in East Africa where many Kenyan students study in Ugandan universities because higher education is cheaper there. South Africa has also become an attractive destination for students from nearly all English-

speaking African countries because of its diversified system, demonstrated quality and less expensive higher education compared to Europe and North America.

While the importance of cross-border provision cannot be denied as a way of improving access, it is legitimate to debate the extent to which it is increasing "knowledge diversity" in the country of student origin. The issue is this: quite often students will seek university education across the border because they cannot access the programmes they want, say medicine or engineering, within the borders of their own countries. This may be for any number of reasons, but the most common is cost. Only in very rare cases are they likely to seek education across the border because the programme is not available in their own countries. This is because, more often than not, African universities across the continent tend to offer similar programmes. What this means is that, in the context of differentiation, cross-border provision can only be considering as widening the range of student choice following a detailed analysis of the programmes available both in the country of origin and in the recipient country. Only after that can one conclusively decide whether this kind of provision adds to the differentiation of "national knowledge."

Off-Shore Satellite Campuses

A second type of cross-border provision that is gaining ground in Sub-Saharan Africa is the setting up of offshore or satellite campuses by foreign providers that offer "international" qualifications, most often in computer and business-related disciplines. This type of trans-national higher education provision has far-reaching implications for differentiation and articulation within the host higher education system. While the offshore satellite campuses contribute a degree of differentiation, this is limited to the extent that they avoid the science-based programmes. In addition, many of them also offer similar programmes. Furthermore, they articulate neither with each other, nor within the domestic providers. This is because they owe their presence mainly to the surplus number of qualified pre-tertiary students who may have missed places in public universities, or wanted to pursue overseas university education, but could not afford to travel abroad. The consequence, as has been seen in Kenya, is that such campuses do not always fulfil locally accepted needs, including any policy requirements to provide a different product.

A major problem with off-shore provision is that the terrain they are occupying has hardly been mapped. Quite often, even regulatory bodies do not have a full picture of who is offering what programmes, let alone the details of whether the programme label is reflected in the programme content. It is apparent that, like cross-border providers, the off-shore providers tend to provide what is already available in local institutions. Their contribution to differentiation thus accrues more in institutional than programme diversity. Perhaps their major contribution to differentiation is in modes of delivery, given that a number of them have introduced new delivery methods into the host higher education systems. In addition, they have sometimes perfected the existing delivery systems, such as distance learning. They have also created fairly innovative pathways.

Competent domestic regulatory mechanisms are required to ensure quality and comparability of the foreign diplomas and certificates with domestic qualifications as well as their relevance to the domestic labour market and national development needs. In the case of francophone countries that do not have national quality assurance or accreditation bodies, the issue of quality control and system regulation becomes even more acute.

Chapter 3

Drivers and Inhibitors of Differentiation and Articulation

Drivers of Differentiation

The findings identify a number of drivers of differentiation. We now turn to these.

Market-Driven Programmes

All the studies of reform taking place in the African universities, including this study, have identified the proliferation of market-driven courses and programmes, sometimes also referred to as income-generating academic programmes, as one of the major changes to take place in African universities in the last decade. Sometimes these programmes have been offered at the degree level; in other cases they have been packaged as discreet short courses tailor-made for specific clienteles. Either way, the objective has been the same: to provide instruction for a fee with a large skills component using pedagogies that are closer to training than conventional university pedagogies. Public interest in these types of programmes, be they in law, business or information technology studies, has been shaped by the perception that skills in these areas will enhance chances of employability.

Universities compete in their offerings of these types of programmes. Even though the academic justification for programme differentiation does not feature in the discourse on these programmes, they have on the surface, at least, increased *programmes differentiation*. *However, as we have argued earlier in this study, the vocational drift inherent in these programmes could also be having the opposite effect: blurring the binary divide between universities and training institutions such as polytechnics. In this way, they could be reducing institutional differentiation. In the context of differentiation, therefore, the programmes are analytically ambiguous, though on the whole, they have arguably increased programme differentiation.*

National Policy

A major finding of this study is that government policy documents are beginning to articulate the need for differentiated tertiary and higher education systems. In some cases, the policy is prompted by political considerations. In other cases, it is informed by developmental positions, such as the World Bank argument (1994; 2000) that Africa requires a diversified workforce in order to respond effectively to the continent's development priorities and challenges. Regardless of the underlying motive, higher education differentiation as a policy is evident in most of the countries covered in this study, notably South Africa, Mozambique, Tanzania, Rwanda, Nigeria, and to some extent in the Francophone countries. A summary of Mozambique's policy approach to differentiation is provided in Box 4.

Box 4. **Explicit Differentiation Policy in Mozambique**

One of the strategic goals of the Mozambican government, as stated in its *Strategic Plan of Higher Education in Mozambique 2000-2010*, is to diversify institutions, training opportunities and forms of delivery. To achieve these objectives, an explicit guiding principle is to encourage "diversity and flexibility of institutions, courses, curricula and methods of delivery, to ensure responsiveness to changing social, cultural and economic demands." Specifically, the *Strategic Plan* outlines two goals regarding differentiation: (1) to develop a diversified system of public and private higher education institutions; and (2) to encourage innovation and diversity in higher education training programmes. To achieve this, the following strategic actions are being undertaken:

a) Encourage the development of new public and private institutions within a general framework for the higher education sub-system to be established, privileging links between them and the existing technical-professional schools;
b) Consolidate existing institutions, taking into account their experience, resources and economies of scale;
c) Conduct an inventory of opportunities, resources, and use or re-conversion of the existing infrastructures to implant and develop tertiary institutions or their branches in the provinces, without jeopardizing the activities of the other educational levels;
d) Promote a greater variety in the length of courses through introduction of courses with diploma, bachelor and master levels; and
e) Increase flexibility in higher education programs in order to facilitate student choices and enable them to adjust their studies to their aspirations in terms of career and job opportunities.

Source: Ministry of Higher Education, Science and Technology, 2000.

However, two shortcomings are often associated with these policies. The first is the tendency to upgrade polytechnics into universities, a trend that is evident in Uganda, Kenya Ghana and Nigeria. The danger here lies, not in upgrading the polytechnics into universities, but in doing so without catering for their replacement and the instructional gap they leave behind. This danger might not be evident now. But it will increase as the polytechnics acquire the autonomy commensurate with their university status, thereby obtaining the freedom to "deviate" from technical training into programmes currently catered for by the "non-technical universities." In this case, a gap in skills provision might emerge. Avoiding this possibility will require well-designed regulatory mechanisms of the kind that South Africa university communities are unhappy about.

The second risk is the policy ambiguity surrounding the establishment of private universities. Though these institutions have mushroomed in the past decade, there is a sense in which they are still regarded in policy circles as the "illegitimate brothers" of their public universities counterparts. They are, therefore, made "welcome" in the context of increasing access, but they are not fully integrated in higher education planning and policy discussions. Notably, few national policies, if any, have defined the role of private universities in medium and long-term system differentiation.

Internal Institutional Reforms as Possible Drivers

A number of studies on African higher education, particularly those sponsored by the Partnership for Higher Education in Africa, have documented reforms that have been taking place in African universities in the last ten years. These reforms are still going on and a number of them have implications on programme differentiation. These include: rapid expansion in the number of universities – both private and public; reforms in university governance, particularly decentralisation of governance; introduction of income-generating activities, including introduction of "market driven" courses mentioned earlier, etc.

One reform that bears emphasis here is the tendency to create university schools or colleges out of faculties or departments. One motive for this is to provide institutional "space" for the schools to introduce more programmes, especially in new knowledge areas. This trend is clearly centred on differentiation. Whether it will succeed in driving further differentiation is, however, yet to be seen.

Industry as a Probable Driver

In theory, industry ought to be a driver of differentiation. But this did not come out in this study. To the extent that industry has a stake in higher education, it is in its demand for skills rather than what it refers to, sometimes contemptuously, as merely theoretical knowledge. Tunisia offers a useful example of how employer demand can be identified and addressed (see Box 5).

Box 5. **The Higher Institutes for Technology Studies in Tunisia.**

In Tunisia, a labour market survey in 1990 demonstrated a severe lack of middle managers, which was estimated at 70 percent of the job market. At the same time, two studies analyzed the types of skills that employers were looking for and concluded that the current educational system was less relevant than it could be. This led to a 1992 government decision to create a new type of tertiary institution – the Higher Institute for Technology Studies – which began operation in 1995. The mission of the Institutes was three-fold: to train middle managers, to offer professional development and continuing education for people already in the work force, and to provide technical support services to the economic sectors. The Institutes were set up under the Ministry of Higher Education as non-university institutions. They were designed to have strong ties with the economic sectors through their governance arrangements (employers participate on governing boards, scientific councils and advisory committees), through teaching (30% of classes are taught by business professionals), and through work placements. Notably, a new type of instructor, the technologist-teacher with business understanding, has been crafted to teach in these Institutes. Courses last for two and a half years. Coursework includes integrated learning, practical problem-solving, two work placements, and a final-year applied project. After ten years, Tunisia has 22 Institutes with 30,000 students. A recent study concluded that the student success rate is 88 percent and that 82 percent of graduates find jobs within six months.

Source: Mazeran 2007: 82-83

In Malawi, tracer studies and rising graduate unemployment and underemployment (especially in the fields of languages and other humanities) indicate a general lack of relevance of the University of Malawi (UNIMA) curricula for the world of work (Chimombo, 2003: 418). In particular, graduates of UNIMA participating in the tracer studies felt that vocational studies were too academic in nature, and did not pay sufficient attention to the demands of the professions. Part of the problem reportedly lies in the weak linkages between industry and the university.

In this context, industry is beginning to take more interest in building a better working relationship with higher education. Most often, this takes the form of (a) employer representation in governing councils; (b) industry funding through student scholarships; (c) R & D collaboration; (d) provision of student internships; and (e) joint patenting of innovations. As the industries become more sophisticated, so will their demand for more differentiated skills. Industry is thus a potential driver of higher education differentiation. It is worth noting here that industry could also become an inhibitor of differentiation if it begins to demand liberal arts training as an alternative to the current disciplinary focused training. This is not happening yet, but there are signs that it could be at the horizon (Ng'ethe et al. 2006).

Regional Policies as Drivers

Regional higher education policy does not feature in this study for the obvious reason that it has remains at an early stage of development. To the extent that regional higher thinking exists, it is dominated by the issue of student mobility. Yet it is important to remember that the emerging regional economic blocs, if they succeed, will sooner or later demand collective thinking on human development, if only in the context of common markets and the resulting free movement of labour. What will this mean for higher education? Will it, for example, mean that each region will be required to identify education and skills gaps and plan how best to fill the gaps at a regional level? It is a safe bet that the regional thinking would be a driver for rationalisation of higher education in the region, a process that would lead to more regional differentiation than is the case at the moment. In this context, cross-border provision would not be driven primarily by local access concerns, but also by availability of a different higher education product across the border that is also marketable within the region.

Inhibitors of Differentiation

Global Trends vs. Resource Constraints

A perpetual observation by higher education administrators, especially deans and departmental chairs, is that they are not only fully aware of global trends in higher education, a key feature of which is more and more differentiation as new knowledge domains emerge, but they are also frustrated that they are unable to introduce new areas of study and specialisation because of resource constraints. Most departments, for example, operate at less than optimal staff capacity and, as we have observed in this study, research, the key generator of new knowledge areas, is barely funded, except by donors. In this context, the move by some universities to increase programme differentiation by creating schools is unlikely to bear fruit in the absence of more resources.

The Problem of Isomorphism

This study indicates that one of the inhibitors of differentiation is institutional isomorphism, or the gradual adoption of a single set of institutional characteristics within a higher education system. As indicated in Chapter One, isomorphism takes two forms: mimetic (strategic seeking of status) and normative (seeking of quality and professionalism). A certain amount of isomorphism might not be a bad thing as new institutions seek mentoring from older and more experienced ones. However, isomorphism will undermine differentiation if the new institutions lose sight of their separate missions and distinct mandates and engage in unimaginative copying.

This study finds that isomorphism is evident in some countries where newer universities are fashioning themselves after older ones, or where newer polytechnics are simply copying the programmes of older ones. Isomorphism is likely to be worse in poorly regulated higher education systems because the individual institutions have the liberty by default to stray from their original mandates – assuming that they were established with different mandates from those of older institutions.

Undifferentiated Governance and Funding Structures

One of the findings of this study is that higher education governance structures tend to be similar for universities and similar for polytechnics. While the effects of this on programme differentiation are not obvious, they are fairly predictable with regard to institutional differentiation. That is, similar governance structures are likely to result in institutions that behave the same way. Indeed institutions sometimes conspire to behave the same way with regard to some contentious issues, such as staff union matters. The problem is reinforced by common funding structures, especially with regard to public institutions, all of which are highly dependent on scarce public resources, which they cannot afford to "alienate" by "behaving creatively."

Absence of Shape and Size Debates

A notable absence from most of the countries covered in this study is a higher education "size and shape" debate of the kind that has been taking place in South Africa. The South African higher education community might not have been fully happy with the outcome of the debate, but it did lead to resourceful thinking on what ought to be the objectives of higher education both in redressing historical wrongs and in achieving stated national development objectives.

To the extent that this debate is taking place in other countries, it is still confined to a few policy experts and higher education specialists, the main forum being the occasional workshop. Part of the problem is that higher education is insufficiently researched, and the research that does exist is often not disseminated beyond academic audiences. This means the corpus of knowledge has not reached the critical mass necessary to fuel popular discourse. Because of this, the role and benefits of higher education in producing both scientific knowledge and practical skills remains poorly understood by the general public.

The need for a "shape and size" debate is more compelling when one takes into account the demographics summarised at the beginning of each of the country reports and compares these with university enrolments. Quite clearly, the enrolment figures are minuscule compared to the share of the population who ought to be in university. The political solution of "uncontrolled" expansion of higher education might be popular, but is likely to fail the development test of producing differentiated knowledge and skills. The size and shape debate would help establish the various dimensions and priorities for higher education, including its political and developmental parameters.

Drivers and Inhibitors of Articulation

An overall finding of this study is that we know more about differentiation than we do about articulation. Table 6 compares some of the more common indicators of system articulation across the countries studied. Based on the limited information available, it is possible to glean from the research a few observations on drivers and inhibitors of articulation.

Table 6. **Summary of Articulation Indicators for Selected Tertiary Education Systems**

	Unified System Oversight Body	Recognition of Qualifications Structure	Admissions Criteria for Tertiary Institutions	Student Mobility/ Transferability of Credits	Staff Mobility	Collaboration; Partnerships in National Tertiary System
Cameroon	No	Yes	Similar	Yes	Yes	Rare
Ghana	Yes	No	Similar	No	No	Rare; A*

Kenya	No	No	Dissimilar	No	Limited	Rare
Malawi	No	No	Dissimilar	Yes	No	Rare
Mozambique	No	No [1]	Similar	In progress	Yes	Rare
Nigeria	No	No	Dissimilar	No	Limited	Rare; A*
Rwanda	No	No	Dissimilar	Limited	No	Rare
Senegal	No	Yes	Similar	Yes	Yes	Rare
South Africa	Yes	Yes	Similar	Yes	Yes	Occasional
Tanzania	No	No	Dissimilar	No	No	Rare
Uganda	Yes	Limited	Similar	Limited	Limited	Rare
Zambia	No	No	Dissimilar	No	No	Rare; A*

*A = required affiliation of private colleges with public universities.

[1] planned for 2008.

National Policies as Drivers vs. Institutional Practices

A quick look at national higher education policies suggests that the issue of articulation has not received as much attention as that of differentiation. Perhaps this is a reflection of the inherent tension between articulation and differentiation, an issue we discuss elsewhere in this report. Within this tension, most of the countries covered in this study are tackling the issue of differentiation, but few are addressing articulation. Even though almost all countries acknowledge the need for articulation is as a means of producing a non-fragmented and more productive labour force, the practices indicate otherwise. Thus, even in those cases where formal articulation routes exist—and these are few—little evidence of articulation can be found. One exception is Senegal (see Box 6). We suspect the reason for this is that engendering articulation is a great deal more complicated because it involves multiple institutional actors and multiple sub-sets of the educational system.

Box 6. **System Articulation in Senegal**

The first two years of university studies in Senegal are *multidisciplinary* and oriented towards the acquisition of basic knowledge in either the sciences or the humanities. At the end of two years, successful students may opt to continue for one additional year to obtain a bachelor's degree or take a competitive selection examination to enter an Advanced Professional Engineering School (a *Grande Ecole*) for three years in order to qualify as an engineer. Alternatively, holders of the secondary level *baccalaureate* certificate may enter an advanced college of technology for two years' study leading to the award of a University Diploma in Technology or DUT. The DUT certificate is in many respects similar to the Higher National Diploma (HND) qualification offered in Anglophone African countries. Like the HND, the DUT is a vocationally oriented qualification for the world of work in essentially the production, technology and service sectors. But in contrast to the situation in English-speaking Africa, the DUT is a university diploma and the colleges that offer this qualification are affiliate units or institutes of a parent university. Holders of the DUT may, on passing a very rigorous entrance examination, be admitted to a *Grande Ecole* or the Advanced Polytechnic School in Dakar or Thiés to study for a higher qualification or degree in the same discipline. Thus, in spite of the diversity in course offerings, qualifications and admission requirements, articulation within the higher education system in Senegal has clearly defined pathways for academic progression and mobility of students. Recognition of prior learning and formalised credit transfers across institutions are two of the unique and important articulation mechanisms of the Senegalese higher education system.

Internal Structures/Governance of Institutions

The internal structures of institutions have tended to inhibit articulation amongst and between institutional types. The universities are under no obligation to articulate with polytechnics. This is because of their legal autonomy and the way they jealously safeguard that autonomy. Consequently, they tend to view articulation—even amongst themselves—as a managerial nuisance that is best avoided.

Industry and the Market as Possible Drivers

This study turned up no evidence that the market, in general, or industry in particular, is driving articulation. On the contrary, industry tends to inhibit articulation with its tendency to partner with specific institutions. A scholarship is thus awarded to take up studies in a particular institution and for a specific programme. The same is true of R & D where the details of the partnership are sometimes a closely guarded secret. The market, on the other hand, tends to be indifferent to articulation so long as it obtains the skills that it needs.

Summary

Though elements of horizontal differentiation are beginning to emerge among universities, this is less true with regard to articulation. Considerable differentiation is evident between the university systems and the polytechnics in all the countries, which reflects the prevailing binary higher education system. However, emerging tendencies towards academic drift among polytechnics and vocational drift among universities are observed. Articulation between the universities and the polytechnics is incipient but far from fully evolved. The polytechnic sub-systems are largely undifferentiated, and the extent to which they articulate among themselves is unclear.

Chapter 4

Differentiation and Articulation: Policies and Practices from Other Regions

Are there any lessons in differentiation and articulation that the higher education systems covered in this study can learn from other regions of the world? Glimpses into the United Kingdom and French higher education systems (countries with strong educational and colonial ties to Africa), the experiences of trend-setting nations such as Chile, Korea and Singapore, together with the recent Bologna Process, may provide useful insights.

Historical Reference Points: United Kingdom and France

After operating a binary system for decades, the UK government took the bold decision in 1992 to convert all of its polytechnics into universities. At the time of this policy change, British polytechnics were well-resourced institutions of higher learning that awarded HNDs, centrally certified degrees and, in some cases, postgraduate qualifications. Yet the polytechnics suffered from a public perception of inferiority. But since their conversion to university status, these new or modern universities (as the former polytechnics are now called) have carved a niche for themselves in the UK labour market, by working closely with industry and commerce. As a result, they have gained in popularity and prestige. They still offer HNDs and career-focused degrees, but as autonomous university institutions they can guarantee a seamless academic progression route to the highest level possible for holders of vocational qualifications.

The higher education system in France is organised essentially in two sectors, namely the university sector and the non-university sector. Contrary to the higher education system in Anglophone Africa, it is the non-university sector that is more prestigious because its highly competitive admissions and small enrolments make it elite. The university system is composed exclusively of the public universities and has the largest student population. There are no private universities in France. On the other hand, the non-university sector includes well-regarded institutions of higher learning in engineering, business and management – the *Grandes Ecoles* – which may be either public or private. Admission to the *Grandes Ecoles* is very competitive and includes a rigorous selection examination. In contrast, the secondary school leaving certificate – the *baccalaureate* – is the only qualification required by law for admission to the university.

It is important to note that the French equivalent of the Anglophone polytechnic-type institutions, the *Instituts Universitaire de Technologie* (IUT), belong to the university system. The IUTs are integral units of the universities and therefore have the same status. The public higher education system is rigidly controlled by the ministry of education, leaving no room for the type of course duplication and unhealthy rivalry characteristic of the systems in Anglophone Africa. Public universities deliver national qualifications on behalf of the State, and members of the teaching staff are assessed for promotion on a national basis. Articulation and mobility for both staff and students is therefore extremely fluid. The higher education system in Francophone Africa remains a structural copy of the French system.

Chile[3]

Market liberalization and a series of regional trade agreements have given exports a central role in the Chilean economy. This gain has forced the labour force to confront major challenges in improving its productivity and quality. Although significant progress has been made in the education sector (e.g., 12 years of education is compulsory), opinions differ on whether the country's education system is now good enough to provide for long-term needs and contribute to a sustainable national development effort. The system's potential is limited by a shortage of educational institutions with the capabilities to actually offset social and personal disparities among students that derive from inequities in the system itself. This lack of differentiated instructional capacities constrains the country's efforts to continue upgrading labour force productivity and national competitiveness.

Chile's substantial economic gains, however, have been underpinned in part by a far-reaching reform of the higher education sector that included a major diversification of educational institutions. Private tertiary institutions were authorised in 1990 and tertiary education was sub-divided into three levels: universities, professional institutes, and technical training centres. System expansion led to a doubling of enrolments that brought in a more diverse and less well-prepared pool of students. Concerned that the numbers of higher technicians from the technical training centres were not keeping up with the numbers of engineers and the proportions were becoming unbalanced, the Ministry of Education worked to make the technician sub-sector more attractive by improving course quality, improving pathways of articulation among institutions, and expanding the student grant program. It was rewarded by a 25 percent increase in technician enrolments between 2000 and 2004.

What specific interventions led to this achievement? One was the "Chile Qualified" program launched by the Ministries of Finance, Education and Labour to create a lifelong learning system for workers and citizens. This included a voluntary quality assurance program for technical education, continuing education opportunities for technical instructors, better definition of technical training streams to allow for improved articulation among streams and accreditation of prior learning, the creation of learning networks among educational institutions, employers and professional associations, and an expansion of work-based learning programs. A second was a competitive grants program that encouraged the overhaul of course content, curricula structure and pedagogy through the provision of financial awards for related equipment and facilities. A third was the introduction of the concept of educational benchmarking with the aim of comparing strategically important courses with world standards of quality. A fourth was the extension of the national student loans and grants program to include shorter term technology training. Finally, certain tax exemptions were provided to workers who sought to update their skills through continuing education.

Present challenges focus on institutionalizing quality assurance mechanisms for technical education, improving articulation among all educational streams, creating a forum in which key stakeholders can better coordinate efforts around their respective interests, establishing a public information system to enable students to make better career choices, and developing a national qualifications framework for vocational skills.

Korea

[3] This section is condensed from Mazeran 2007:42-52.

Differentiation and articulation have been constant themes in Korea's long-term campaign to develop professional education capacities in support of its export industries. In response to a growing labour demand for technicians, the government set up in 1963 a series of five-year professional institutes that offered three-year vocational programs at the secondary level and two-year vocational programs at the tertiary level. At the top of the educational pyramid, the Korea Advanced Institute was created in 1971 to provide high quality MSc and PhD programs. After 1976 a number of the five-year professional institutes were converted into two-year vocational junior colleges as the market demand for higher skill levels became stronger. This was followed in 1979 by a broader two-year junior college system of both public and private colleges. Links between colleges and industry were fostered through research cooperation, field practice, staff exchanges for lectures and consulting, and contracted training activities. In 1995, the two-year college diploma was replaced by a two-year associate B.A. degree in order to increase attractiveness and emphasize articulation with the four-year degree programs. This junior college system was a major contributor to the massification of tertiary education in Korea. Today, it enrols 853,000 students (26% of tertiary enrolments) in 158 junior colleges, some 90 percent of which are privately operated (Mazeran 2007:56).

Other complementary initiatives reinforced these skills development undertakings (Sonu 2007). The Korea Science and Engineering Foundation was set up in 1977 to fund university research and award long-term research fellowships. Various Government Research Institutes were established in the 1980s with mandates to focus on strategic economic areas such as ship-building, electronics, and automotives (Chung 2007). Many of these were successful in attracting diaspora talent back to Korea. Engineering Research Centres were created on university campuses in 1990. At the same time, research and development were promoted through a competitive funding program, tax credits, and customs duty waivers on research equipment.

To a large extent, Korea's economic success has been due to the development of a broad, differentiated and articulated tertiary education system, a strategically oriented R&D program, policy incentives for industry in key export areas, and linkages among higher education, research and development, and industry.

Singapore

Singapore is a small city-state surrounded by very large neighbours. Yet it has generated an economy that belies its size and has achieved this largely on the basis of its human capital formation strategies. Singapore illustrates how it is possible to progressively construct a differentiated and articulated tertiary education system through a sequence of policy initiatives.

First, the country's two pre-existing colonial era universities were merged to form a stronger National University of Singapore in 1980. The next year the Nanyang Technological Institute was established, evolving into a technological university by 1991. It was designed to serve as the human resource cornerstone for an economic growth strategy based on competence in selected new technologies such as medical robotics, microelectronics and optics. During the 1990s a network of ten post-secondary Institutes of Technical Education was established to generate the middle level technical skills to support this effort. This had previously been the role of the nation's five polytechnics, which were re-directed to emphasize continuing education and post-employment professional development programs. Access to tertiary education was expanded by setting up several regional junior colleges that were linked to the national university through student transfer mechanisms. Likewise, strong student performers from the polytechnics were given opportunities to progress into university level studies. At the end of the 1990s, the National University of Singapore initiated a strategic shift to a comprehensive research-intensive university with a strong

complement of postgraduate programs. In 2000 the Singapore Management University was opened as a private limited company in partnership with the Wharton School of Business at the University of Pennsylvania in the United States. Part of its mandate is to provide lifelong learning options to working adults. At the same time, teaching pedagogy in the country's tertiary institutions was re-oriented towards problem-based, interdisciplinary learning with a strong practice orientation developed in collaboration with industry. In 2005 the first of three planned regional tertiary-level Institutes of Technical Education was opened. Strikingly, these new Institutes are intended to impart practical technical skills to the *lower* 25 to 30 percent of the secondary school cohort that previously had no access to tertiary education. In 2006 the two national universities were awarded greater institutional autonomy and corporate status, and higher education funding was re-shaped as a more competitive and performance-based process. In 2006 the University of Nevada at Las Vegas was invited to open BSc and Executive Masters programs in Singapore focusing on hospitality management and hotel administration. In 2007 the University of New South Wales in Australia has been authorized to set up a branch campus in Singapore. In this way, a differentiated yet articulated tertiary education system was progressively assembled over two decades in support of a national goal of economic competitiveness.

The Bologna Process

The Bologna process to establish a European Higher Education Area (EHEA) by 2010 is an evolving example of international cooperation in higher education. With various dimensions of differentiation and articulation, emerging and developing countries can draw lessons from it. Certainly, it would be unwise to transport wholesale the European experience in higher education to Africa. Yet the Bologna Declaration of 1999 contains certain challenges and objectives that transcend geopolitical and economic distinctions.

The Bologna process seeks to achieve "greater compatibility and comparability of the systems of higher education in Europe" by adopting a system of comparable qualifications and a credit transfer system that promotes student mobility. It also seeks a more cooperative approach to the various dimensions in higher education, including curricular development, inter-institutional collaboration and integrated programmes of study, training and research (Bologna Declaration 1999). As of May 2005, the number of signatories to the Bologna Declaration has risen to 45 nations, compared with the 29 European Ministers for Higher Education who initialled the original document in 1999. Clearly this is a train that everyone is eager to ride.

The Bologna process recognises that a common qualifications framework, based on a system of quality assurance, joint standards, mutual reliability and transparency, is a prerequisite for the mobility of students and staff across national boundaries. As Birger Hendriks, an official of the German Ministry of Education recently put it, "quality assurance is a cornerstone of the Bologna process" (Hendriks 2005). Notably, these same dimensions of quality and mutual recognition of qualifications are also necessary to promote internal articulation between the various levels of higher education within national boundaries. In both Ghana and Nigeria, for example, there is a deep suspicion within the universities of the quality of the HND qualification delivered by the polytechnics. The universities frequently cite, though not openly, the generally lower admission grades of polytechnic students and the lower academic qualifications of their instructors as two of the major factors militating against the adoption of a common credit system for polytechnic and university courses.

Quality assurance at all levels of the higher education system in Africa emerges, therefore, as one of the principal requirements for greater articulation within and between the systems examined in this study. In the Eastern Africa region, the three East African Community member-states (Kenya, Uganda and Tanzania) have recently (mid-2006) signed a protocol enabling the regulating

Commissions/Councils for Higher Education and the Inter-University Council for East Africa to formally engage each other with a view to developing collaborative regional approaches to higher education. Among the key issues to be harmonised is quality assurance.

Chapter 5

Towards Policy Options for Improved Tertiary Education

Perspectives and Interpretations

Higher education has a key role to play in advancing the development priorities of the continent. At a time when efforts to address these priorities are being renewed in the form of the African Union and NEPAD, it is particularly important to review the role and contribution of differentiated non-university higher education institutions and their articulation with the university sector.

Within increasingly competitive national and international environments, two opposite trends are evident. One is driven by isomorphic imitative institutional behaviour striving to reach the status of the research university model. The other inclines towards greater institutional differentiation, driven by a variety of contemporary factors. These include new demands from the changing labour market for varied graduate output and a growing social demand for access to higher learning (the so-called 'massification' of higher education), with the consequent influx of non-traditional learners. These pressures have generated the need for a more flexible range of programmes and institutional types that spans academic, general vocational and occupation-specific pathways at different qualifications levels.

As a result, institutional *differentiation* has become a feature of many higher education systems. In some cases, institutional differentiation is rigidly manifest in a binary divide that separates university and non-university polytechnic-type institutions. This split derives from long-standing curricular divisions between education and training, between academic and vocational streams, and between high-level knowledge assumed to be appropriate for 'thinkers' and practical-oriented training intended for 'doers.' This structure corresponds to, and helps to reproduce, the broad division of labour and social stratification between the elite and the masses, which in colonial contexts was overlaid by race and gender.

As part of these trends, most African countries offer, as they have done for decades, a differentiated post-secondary education consisting of a mix of colleges, trade schools, vocational centres and technical institutes. At the top of this educational pyramid one finds the polytechnics and universities (Sawyerr, 2002). The diverse configurations of the higher education sector in Africa reflect various historical influences, as well as the national and global pressures brought to bear on this sector. The emergence of mass higher education, not only in Africa but also across the globe, has swayed governments to introduce policies favouring institutional and programme differentiation. In Africa, new types of higher education institutions and differentiated programmes have come forward despite an increasingly constrained financial environment.

As part of this differentiation process in educational provision, the traditional divisions between academic education and work-oriented training have increasingly been dissolved by several recent developments. First and foremost, in the new market-oriented higher education environment, public and private institutions are increasingly defining new niche areas, missions and functions in relation to market opportunities. This has resulted in the widespread occurrence of both *academic drift* (that

is, the tendency of non-university polytechnic-type institutions to aspire to and offer university-level programmes) and *vocational drift* (that is, the tendency of universities to seek new market opportunities by offering job-specific certificate and diploma vocational qualifications). In addition, amidst the proliferation of new organisational forms and the widespread utilisation of the new information and communication technologies (e.g., virtual, corporate and distance education universities), it is increasingly difficult to retain a coherent definition of the university. This has generated the notion, as Scott (2000) has put it, of the 'post-modern university,' which captures the view that no simple definition of the university suffices in the midst of the emerging multiplicity of ever-differentiating institutional forms. In addition, the demands of the knowledge-driven economy, high-tech innovation and complex social problems have generated new modes of inter-disciplinary and trans-disciplinary knowledge production. As a result, the traditional disciplinary-based curricular boundaries have become more obscured, as have the boundaries between basic, applied and strategic research.

Although differentiation has become a key education policy issue and has been strongly advocated in current reform discourses, the concept still lacks clarity. The precise identity, role, appropriate boundary and form of regulation between the different institutional types and the programme offerings which underlie these continue in search of consensus. As a result, the epistemological and organisational foundations of university and non-university education remain an under-theorised area in the literature.

In Sub-Saharan Africa, universities articulate poorly with each other. This is perhaps the result of "youthful territoriality." More importantly, it could be a reflection of the absence of a national policy dialogue regarding the appropriate shape and size of the higher education system. Higher education oversight bodies such as national commissions or councils for higher education should ideally spearhead this national agenda-setting discussion. But these bodies are uniformly young or non-existent. As a result, they are yet to establish their leadership credibility with pre-existing (and sometimes suspicious) tertiary institutions.

In spite of the increasing knowledge that has been recently accumulated about universities in Africa, a dearth of knowledge surrounds the non-university sectors. In addition, considerable lack of clarity characterizes the precise identity and role of university and non-university institutional types and the articulation linkages and boundaries between them. With the proliferation of public and private institutional types, and the rise of borderless higher education provision, the dividing line between university and non-university types is blurring. As indicated, academic and vocational drift occurred on both sides of the binary divide. Non-universities continue to aspire towards university status, while universities are seizing market opportunities by offering popular job-specific certificates and diplomas. A key issue is how the notions of 'university' education and 'polytechnic-type' training should be operationalised in the African context.

Regarding *articulation*, greater social demand for higher education and for equity of access has generated an increasing emphasis on the creation of articulation and mobility pathways for students throughout the education and training framework. To this end, a number of countries worldwide have developed integrated national qualifications frameworks (NQF) to facilitate access, mobility and progression within education, training and employment. Central to the construction of an NQF is an integrated approach to education and training among formal institutions and the workplace. This aims to ameliorate traditional tensions between discipline-based learning, which occurs mainly in institutions, and work-based learning, which occurs mainly in the workplace, but includes professional practice. To this end, the qualifications framework defines levels of qualification

against which outcomes-based qualifications and standards can be pegged. This seeks to create equivalences upon which credit accumulation and transfer can occur.

Implementation of these progressive intentions is a formidable challenge, if the South African experience is anything to go by. Following extensive debate about qualifications standards and a range of other issues, the South African National Qualifications Framework has just been thoroughly reviewed. A South African government discussion document, in response to the review, noted "with some notable exceptions little progress has been made in enabling learners to transfer their learning credits from one context to the other" (Young 2003:9). It acknowledges "it is true that all learning is not portable, that unit standards and qualifications are not automatically transferable across career paths, and that moving between one learning context and another requires the adaptation of skills and the integration of new knowledge" (ibid:21). Likewise, recent research (Breier, 2003) has approached the progressive claims of recognition of prior learning with greater circumspection, based on a deeper understanding of the contrasting structures of academic and workplace-based 'practical' knowledge.

Tension between Differentiation and Quality

This study did not look into the relationship between differentiation and quality assurance. However, from the literature and our own observations of African higher education systems, it is evident that there can be an inherent tension between differentiation and quality. This is because, the more differentiated the system of higher education, the more likely that quality will be affected negatively, unless detailed planning has gone into the process of differentiation. A key plank in this planning is the development of the necessary human resources and physical infrastructure. A second element that could create tension between differentiation and quality is that of quality assurance through regulatory mechanisms. Clearly, the more differentiated a system is, the more competences it will demand from its quality assurance/regulatory agencies. Given that most quality assurance/regulatory agencies we have observed in this study are still struggling to find their footing,[4] if they exist at all, a case can be made for matching the rate of differentiation with the rate at which the quality assurance/regulatory agencies acquire the requisite competences.

Tension between Differentiation and Articulation

We note in conclusion that a fundamental conceptual tension is apparent between the purposes and intentions of differentiation and articulation – a key consideration for the purposes of this study. This is not to question the relevance and validity of both differentiation and articulation, but pursuing both simultaneously as policy goals can produce a conceptual tension.

Simply put, the issue is as follows. The primary rationale for differentiation is to provide the range of graduate outputs needed to meet the varied requirements of the contemporary labour market, and at the same time to accommodate an increasingly diverse student population. These goals are achieved by providing a differentiated range of programme and qualifications mix at a variety of institutions. Articulation, on the other hand, is an equity-driven principle to facilitate access to 'higher' university-type qualifications for students entering the system at 'lower' polytechnic-type qualifications. Encouraging articulation, as a normative goal, can thus be seen to be inconsistent with the principle of differentiation. This is because an unmediated emphasis on articulation would

[4] For an in-depth analysis of existing capacities for quality assurance, see: World Bank, 2007, *Higher Education Quality Assurance in Sub-Saharan Africa,* Africa Region Human Development Department, World Bank, Washington, DC.

obstruct the purpose of differentiation, as the required number and range of graduate outputs at the intermediate and vocational levels would be reduced. In reality, articulation must necessarily remain selective, because only a limited numbers of students are able and motivated to pursue the process. In addition, normatively emphasising articulation runs the risk of widening the reputation gap between academic and vocational elements. Unavoidably, the 'higher' qualifications offered at universities will tend to attract higher status.

Towards Tertiary Education Systems

The literature and this study affirm that differentiation and articulation are key features in the definition of any system of education. This is particularly so with the higher education system, as opposed to basic or secondary education because higher education is almost by definition meant to be differentiated education. Compared to the others, it is intended to be specialised. In this regard, one of the painful conclusions of this study is that true higher education systems are yet to fully emerge in the countries covered in this study. What exist now are incomplete systems characterised by almost discreet institutional types. Until the institutions and institutional types are sufficiently differentiated and sufficiently articulate with each other, the national systems will, at best, be classified as fragmented systems. For this reason alone, this study is strategically timely. While limited in its scope, it will hopefully fulfil its aims to inform the ADEA Working Group on Higher Education in its activities, to add to our knowledge in this area, and to provide a point of departure for future research and analysis. To these ends, we therefore recommend the following:

Points for Policy Consideration

In general, institutional and programmatic differentiation appears to be increasing – driven by both market forces and government policy. But the extent to which articulation is becoming operational appears to be minimal, even though formal channels for articulation between the university and non-university sub-sectors exist. Consequently, differentiation and articulation within African higher education systems remain vital but largely unused policy instruments for enhancing equity and contributing effectively towards national development goals.

1. Participation and access should be encouraged but in a targeted way through both institutional and programmatic differentiation in order to meet development goals. To maximise diversity of offerings, cost effectiveness and access, the binary divide should be *flexibly* maintained through appropriate regulation to control academic and vocational drift. Prospects for effective regulation are dependent on national conditions. In some cases, such as Mozambique and South Africa, strong centralised national policy frameworks are conducive in this regard. In smaller systems, much greater institutional autonomy is evident, creating bigger challenges for regulation.
2. The dominance of universities (other than in Francophone countries) should be reversed. Expansion does not always imply diversity and many new universities, rather than non-university institutions, are being established. This implies confronting popular aspirations for universities as institutions of first choice, and the persistent attribution of low status to non-university institutions. This could be advanced through: (a) publicly clarifying complementary roles and identities; (b) encouraging and rewarding collaboration; and (c) creating unified supervision and stakeholder bodies.
3. Comprehensive hybrids and combinations of residential and open leaning should be developed, especially to provide access to rural areas. This is already beginning to happen. Quality must be maintained in the process of differentiation despite ongoing fiscal constraints in most African countries.

4. Given the problems of articulation and the absence of any meaningful policy dialogue between the two institution-types, the creation of parallel universities with distinct mandates within the higher education system may be the option of the future, as is already happening in South Africa and indeed happened in the United Kingdom more than ten years ago. This policy has also been adopted in Kenya. The policy, however, is controversial in that it could leave a "middle level skills vacuum" if the new technical universities fail to cover this level of training. If the polytechnics are upgraded to technical universities offering "skills degrees" and training programmes to the highest level possible, the traditional universities will then concentrate on research and the awarding of predominantly "knowledge" degrees. Even then, it will still be necessary to have transparent, mutually recognised, easily understood and comparable national qualifications frameworks that would bridge the two systems. This will not only enhance the prospects of articulation within the entire higher education system, particularly with respect to the provision of life-long and continuing professional education opportunities, but also underscore the notion of complementarity inherent in the concept of knowledge and skills. At the national levels, agencies charged with promoting quality standards and the accreditation of higher education programmes should strive to establish a mutually acceptable and easily readable credit transfer system to improve articulation within the entire higher education sector. This they can do by specifying minimum credit requirements for the different levels, by developing generic descriptors, and by crafting instruments for measuring and classifying learning outcomes and competences within national qualifications frameworks. The imperatives of articulation across institutions and qualification levels require an overarching national, regional and eventually international framework. This does not, however, imply the "uniformisation" of courses, but rather the creation of convergence in the appreciation of achievement levels.
5. The identity of non-university institutions should be made more distinct. One possible suggestion for strengthening non-university institutions and differentiating them from universities is to customize their admission requirements on a distinct curriculum at the secondary school level that more adequately prepares potential students for vocational training in terms of acquisition of practical pre-career skills. In other words, the curriculum for secondary school students aiming for traditional first degree programmes of study should not be the same for those who are better inclined for the more practically-oriented, career-focused education in non-university tertiary institutions. This horizontal differentiation at the secondary school level should not prevent the mobility of students between universities and non-universities, provided the entire educational system is well articulated.
6. The image and reputation of non-university institutions should be enhanced by improving the quality of their training and through effective collaboration with industry in the design of their training packages and the mounting of vigorous campaigns of sensitisation regarding their important role in national development. This will not be an easy task. Contrary to what the polytechnics in Anglophone West Africa would want the public to believe, the HND holder is not appreciated as a graduate with practical skills superior to those of his university counterpart. The polytechnic graduate suffers from lower status.
7. Evidence from this study appears to support the view that articulation between the two institutional types is smoothest in a unitary higher education system with a common supervising authority and with the university at the top of the educational ladder. However, it is doubtful if non-university institutions, particularly the polytechnics, would accept a subordinate status to the universities, after all these years as autonomous higher education institutions.

8. Formal articulation channels must be created and actual articulation encouraged within which emphasis on differentiation and diversity should be retained.
9. Collaboration between universities and non-university institutions must be asked for and rewarded.
10. Linkages between higher education and industry should be strengthened to improve quality and relevance.
11. The private higher education sector should be encouraged to provide complementary systemic institutional and programmatic differentiation. However, its quality and relevance must be assured through appropriate regulation.
12. Debate on the role of higher education in a developmental context should be encouraged. Towards this end, more detailed research on the issues raised should be mounted as a matter of urgency. In particular, programme differentiation should be mapped in greater detail. In addition, research on articulation should be given even more attention, given that we know less about articulation than we know about differentiation.

In this regard, the Association of African Universities (AAU) is well placed to initiate a policy dialogue between the universities and regional associations of polytechnics and other non-university tertiary institutions. These representative bodies include the Conference of Polytechnic Principals in Ghana, the COHEADS (Rectors of Polytechnics) of Nigeria, the National Board for Technical Education of Nigeria, and the Commonwealth Association of Polytechnics in Africa (CAPA). Increasingly, non-university institutions are playing important roles in the economic development of their countries, and in this they are beginning to follow the Asia pattern. Their contributions to overall human capital formation may be more beneficial if these are channelled and gently steered to fill the human resource development gaps in the university system. The cost of inaction on this front will be costly duplication of courses and training programmes and unnecessary rivalry with the universities.

Finally, it must be recognised that universities and non-university institutions share the same ultimate goal of contributing to national development, either by advancing knowledge and promoting scholarship, creating a knowledge society as it were, or by directly supporting industrial and economic growth through the application of existing knowledge. How effectively these tasks are divided up between the two institution-types should be a parameter that defines the overall efficiency of the higher education system. As the tidal wave of increased enrolments in primary education generated by Education for All campaigns surges through secondary education to crash against the door of tertiary education, the creation of diverse institutions and programs will help to accommodate the rising demand for tertiary access. This is why issues of differentiation and articulation must engage the serious attention of governments and policy makers.

Topics for Future Research

As noted at the outset, this study was cast as a preliminary mapping exercise in the application of two important policy variables for tertiary education – differentiation and articulation – which have been poorly appreciated and rarely understood in Sub-Saharan Africa. The intent was to blaze a trail into this relatively unstudied area of African tertiary education in the hope that others might follow. Much therefore remains to be done in this area. Among the topics that strike us as priority candidates for follow up investigation are the following:

- Articulation mechanisms linking secondary and tertiary education.

- Complementary understanding of the roles, forms of integration, and articulation of other non-university institutions beyond polytechnics (teacher training colleges, technical institutes, etc.).
- Deeper analysis of francophone articulation mechanisms and their associated management capacity requirements in order to derive lessons learned of relevance to Anglophone universities.
- Comparative assessment of existing module credit and transfer systems in Africa and a few selected non-African experiences to identify good practices for future reference in fostering better system articulation as interest and experimentation with credit transfer begins to expand in Africa.
- Projections of the impact of increased primary enrolments under Education for All on tertiary education over the next twenty years.

Association for the

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